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ePosters on Demand (ePOD) on the Kubify ePoster Platform
Contents
ePOD abstracts
Unravelling the threads of race, racism and medicine

Date of Presentation: 28 August 2021
Time of Presentation: 17:55 to 18:55

Dipesh Gopal, NIHR In-Practice Fellow in Primary Care, Queen Mary University of London, UK

Summary: Dipesh will explore how race and racism impacts health, healthcare, medical education and everyday life. He will consider ways to challenge the impact race and racism including bias training, systemic change, and decolonisation of the medical curriculum.

Biography: Dipesh is a General Practitioner (GP) in London, England and a National Institute for Health Research (NIHR) In-Practice (research) Fellow in Primary Care at Queen Mary, University of London. His research interests lie in research related to Cancer Survivorship and Health inequalities.
#FR1: Fringe 1

#FR1.1 Chatterbox or wallflower? Reflecting on introversion and extraversion in the classroom (9825)

Date of Presentation: 28 August 2021
Time of Presentation: 19:15 to 19:35

AUTHOR(S):
Reinoud de Jongh, Erasmus University Medical Centre, The Netherlands*
Anne de La Croix, Amsterdam UMC, The Netherlands

ABSTRACT:
WhatsApp offers the opportunity for affordable team-based health professions education in sub-Saharan Africa. Here are some thoughts to help colleagues in sub-Saharan Africa develop WhatsApp CMEs from the teaching done on the app, and to increase awareness and hopefully start a think-tank to work towards promoting, customizing and adapting WhatsApp as a respected clinical teaching tool. The point is that 10% of surgeons in the region use WhatsApp for teaching and learning (Jonathan Ajah & Barbara Jemec 2020).
#P2: What does a student or trainee want or need most from an educator?

The changing roles

Date of Presentation: 29 August 2021
Time of Presentation: 07:45-09:00

Jo Bishop, Bond University, Australia
Sawsan Abdel-Razig, Clinical Associate Professor of Medicine from Cleveland Clinic Lerner College of Medicine, Abu Dhabi, UAE
Abdullah Al-Khafajy, International Federation of Medical Students’ Associations (IFMSA)

Moderator: Afsana Elanko, Director of Education, British Association of Surgical Oncology, UK

Summary: The roles of a teacher or trainer have been described: Information provider, Facilitator, Curriculum Developer, Assessor, Role Model, Manager, Scholar, and Professional (Harden and Lilley, 2018). In recent years an important trend has been a greater engagement of students and trainees with given aspects of the education programme. The COVID pandemic has also had an impact on the delivery of education programmes, with implications for what is expected of a teacher or trainer. This symposium will explore from very different perspectives the changing role of a teacher or trainer in the light of what learners now want or need.

Biographies:

Dr Afsana Elanko graduated from University of Nottingham Medical School, UK with a degree in Medicine and a BMedSci (Medical Education). She has expertise in multiple aspects of medical education including delivery methods, assessment, quality assurance and policy formation which covers the breadth of undergraduate and postgraduate continuing medical and surgical education. She has pioneered an integrated approach for interprofessional learning which is transferable into healthcare settings globally. Her attention to detail and tenacity for enhancement of standards has led her to be a formidable “trainer of the trainers”. She is renowned for her innovative approach to education delivery and implementation of new strategic development at the forefront of healthcare improvement and advancement. Ideas she has pioneered in eLearning have been at the forefront of the advancement of electronic educational delivery globally. Dr Elanko is Director of Education at the British Association of Surgical Oncology, where she has led the development of the infrastructural changes to sustain and improve the delivery of education and membership involvement. In 2019 Dr Elanko was awarded the prestigious Global Health Medal for Education and Healthcare for her outstanding contributions to the advancement of global education and development and sustainability of healthcare improvement. In 2021 she has been awarded the Royal Society of Medicine Medal (the largest provider of Continuing Medical Education in the UK) in recognition of her long term commitment to providing multidisciplinary educational courses for students, trainees and consultants.

Jo Bishop is the Associate Dean for student Affairs and Service Quality for the Faculty of Health Sciences and Medicine at Bond University, Gold Coast, Australia. With over 2 decades experience as a medical sciences educator Jo is also the Curriculum lead for the Bond Medical Program and works extensively with key stakeholders within the tertiary and health service sector. Jo moved to Australia in 2013 following a successful career as curriculum director for graduate entry in medicine program in Swansea, Wales, UK. As a member and chair of many national and international working groups within AMEE, Medical Deans Australia and New Zealand (MDANZ) and Australian and New Zealand Association for Health professional Education (ANZAHPE) Jo contributes significantly to discussions on student support and medical education pedagogy, with a specific interest in the transition of graduates into the medical workforce. Our philosophy at Bond University and within faculty is to ensure each student has a personalised experience and thrive. Jo’s research focus is specifically in the area of student (and staff) well-being and its
alignment within curricula using empirical evidence. Jo has coordinated the recent review of mental health and well-being within the University as the chair of the promoting well-being working group. The group contributes to the work of the Student Wellbeing and Safety Advisory Committee that reports directly to the VC. Jo contributed to the publication of the Medical student wellbeing – a consensus statement from Australia and New Zealand in 2019 and led the writing of the Learner wellbeing chapter in the Understanding Medical Education; Evidence, Theory and Practice textbook.

Dr. Abdel-Razig is a clinician educator with expertise in educational policy development, health systems regulations, and graduate medical education. She currently serves as the Chair for Medical Education and inaugural DIO at the Cleveland Clinic Abu Dhabi where she oversees undergraduate, post graduate, and continuing educational initiatives. She also continues to see patients and teach as a staff physician within the hospital medicine program. Her research interests include challenges in international medical education, medical professionalism, and issue of gender equity in health. Dr. Abdel-Razig received her B.A. degree in Biological Sciences from Barnard College, Columbia University, her M.D. from University of Connecticut School of Medicine, and completed her internal medicine training from New York University Langone Medical Center. Dr. Abdel-Razig also holds a master’s in education of health professionals from Johns Hopkins University and serves a clinical Associate Professor of medicine at the Cleveland Clinic Lerner College of Medicine.

Abdullah Al-Khafajy (aka Abdullah Rajeeb) is a final year medical student at Baghdad University College of Medicine, with five years’ experience in the field of student advocacy and medical education on a national, regional, and international level. He currently serves as Liaison Officer for Medical Education Issues at the International Federation of Medical Student Associations (IFMSA), representing 1.3 million medical students from 134 countries. Throughout his years of activity in the IFMSA, he has shown interest in Accreditation and Quality Assurance of medical schools, social accountability in medical education, and Health Workforce Education and Regulation, as well as his dedication towards Meaningful Student Engagement and Advocacy. Abdullah is currently working on areas including the Global Health Workforce crisis, Open Science, and Global Health Education within IFMSA, and he aims to continue his advocacy work after graduation.
ABSTRACT:
Traditionally, healthcare students have been educated in discipline-specific silos with minimal interprofessional exposure and socialisation. Interprofessional education is fundamental for the development of interprofessional socialisation and is now widely recognised as an important component of healthcare education, although when and how best to implement IPE remains unclear. Current IPE curricula commonly develop by joining multiple activities rather than developing the activities around an established framework. We describe the utilisation of recognised team function and formation frameworks to develop an IPE curriculum.
We combined Lencioni’s five-levels model of team function with Tuckman’s model of five-stages of team formation, to better understand how IPE teams could be more effectively formed and developed. By recognising the five stages at which a team develops, we appraised current and designed new activities which ensured student interaction allowing the five stages of team development: forming, storming, norming, performing, and adjourning. Furthermore, by recognising the five levels at which teams can become dysfunctional, we aligned the current and new activities with developing student awareness and learning of these levels, ensuring learning outcomes were avoidance of these problems.
Armed with a greater awareness of the way to develop and maintain highly functioning teams, we ourselves as developers and delivers of IPE within our Faculty, developed further IPE activities, which linked-in both prior and subsequent to current curricular IPE activities, ensuring a smoother and more logical student progression of IPE learning.
Harmonisation of IPE activities is difficult when there are many invested parties, and therefore a greater collective understanding of what is best for student IPE development within curricula can be attained when an established overarching framework is used.
Take home messages
- IPE curricula are critical for the future of healthcare, and the current common development of siloed activities can lead to a poor understanding of and recognition of IPE by healthcare students.
- Developing IPE curricula around established frameworks for team function and formation can lead to a greater alignment of learning outcomes, as well as a shared greater understanding and awareness of IPE within a more collaborative Faculty.
#FR2: Fringe 2

#FR2.2 Now is the time to teach physical examination skills with kinesthetic learning (9821)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 09:20 to 09:40

**AUTHOR(S):**  
Kiyoshi Shikino, Chiba University Hospital, Japan*  
Takaaki lino, Chiba University Hospital, Japan  
Daiki Yokokawa, Chiba University Hospital, Japan  
Shoichi Ito, Chiba University Hospital, Japan  
Masatomi Ikusaka, Chiba University Hospital, Japan

**ABSTRACT:**  
Modern medicine is in danger of losing a powerful and primitive tool: physical examination. Recent publications have highlighted the decline in physical examination skills. Undoubtedly, the high-tech transformation of medical care has resulted in diminishing direct patient-physician interaction, but the difficulty of teaching physical examination skills is the main reason behind this decline. Some physical examinations are considered to be student killer. A good example is the physical examination of jugular vein pressure, which requires an understanding of anatomy and physiology in order to be performed adequately. To address this challenge, we propose teaching physical examination skills with kinaesthetic learning, in which learning takes place through the students carrying out physical activities. In this Fringe session, we will share how to teach physical examination skills, especially examining jugular venous pressure, with kinaesthetic learning through physical movements. Your inspiration will also be sought in this session. Using any tool that you have around you (for example, a pen or sometimes your finger), express the jugular vein, the carotid artery, and the sternocleidomastoid muscle. We believe that your ideas will inspire our participants. Let us have a physical examination session with kinaesthetic learning and feel our jugular vein!
#S1: Symposium 1

**#S1** Postgraduate trainees: Students, workforce or learners? (7579)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:00 to 11:30

**PRESENTER(S):**  
Leila Niemi-Murola, University of Helsinki and Helsinki University Hospital, Finland  
Rille Pihlak, University of Manchester, UK  
Kenneth Cho, Cardiology Department, Campbelltown Hospital and Western Sydney University, Australia  
Jenny Mladenovic, FAIMER, USA  
Gustavo Salata Romão, University of Ribeirao Preto, Brazil  
Wunna Tun, University of Medicine, Myanmar

*(on behalf of the AMEE Postgraduate Committee)*

**Summary:** Most of postgraduate Resident education is learning at the workplace. The where residents start by observing the senior clinician’s work and then gradually take on additional responsibility and tasks first under before starting to work under direct supervision and later independently. However, there is a huge discrepancy in the PG trainee status within the healthcare system around the world that influences other aspects of their education like supervision, protected time for learning, salary and work environment, and in turn these aspects are known to have a direct impact on the quality of their education.

In some countries residents are taken as full time students, who receive plenty of supervision but have scarce opportunities for working independently, whilst in others under distant supervision. In other countries, residents are full members of the workforce from the start of their PG training with often limited protected time for learning. Especially at the time of a global pandemic there has been a dangerous shift in the balance between service and education, where more trainees have had to take on more clinical duties sometimes leaving the education in the background. With the shift to the CBME also in PG training, these differences between the status of the PG trainee during their specialty training raise important and contrasting will create challenges in both settings.

The purpose of this symposium is to present the pros and cons of these contrasting systems, highlight good practices of resident education in different parts of the world and try to find the ideal balance between service and education in PGT. We also aim to share ideas of facilitating implementation of competency-based medical education in these different systems and showcase how to overcome the challenges.

This is a submission from the Postgraduate Committee

**What participants will gain:** Participants will be able to share their experiences and contribute best practices from their own contexts. After the symposium, the participants will be able to apply some practical ideas in their own institutions.

**Who should participate:** All interested in postgraduate education and in implementation of CBME, especially trainees, supervisors and programme directors
#S2: Symposium 2

#S2 Lessons learned for using Technology Enhanced Learning during the COVID-19 pandemic (7418)

Date of Presentation: 29 August 2021  
Time of Presentation: 10:00 to 11:30

Presenters:  
*John Sandars, Edge Hill University Medical School, UK*  
*Dario Fernandes, University of Campinas (Unicamp), Brazil*  
*Goh Poh-Sun, National University of Singapore, Singapore*  
*Rakesh Patel, University of Nottingham, UK*  
*(on behalf of AMEE TEL Committee)*

**Summary:** The COVID-19 pandemic has seen a global increase in the use of Technology Enhanced Learning (TEL) across the continuum of medical education, from undergraduate to postgraduate to continuing professional development. There has been numerous publications across a diverse range of sources and it is difficult to identify what works or does not work and why and in what circumstances. Understanding the complex factors that have enabled and constrained the use of TEL during the COVID-19 pandemic is essential for providing effective TEL in the future.

The symposium will provide an opportunity to present the key messages from across the literature, including insights from low and middle income countries, and to offer key messages for the future design and implementation of TEL in medical education.

**What participants will gain:** Participants will increase their understanding of the lessons learned from using TEL during the COVID-19 pandemic and to use these insights to inform their future design and implementation of TEL in medical education. The complex factors that have enabled and constrained the use of TEL during the COVID-19 pandemic will be highlighted.

**Who should participate:** All medical educators who have an interest in providing effective use of TEL across the continuum of medical education, from undergraduate to postgraduate to continuing professional development
#RP1: Research Paper - Context in HPE

#RP1.1 Trainee-environment interactions that stimulate motivation - a rich pictures study (7743)

Date of Presentation: 29 August 2021
Time of Presentation: 10:00 to 10:20

AUTHOR(S):
Wieke van der Goot, Martini Hospital & University of Groningen, University Medical Center Groningen, The Netherlands
Sayra Cristancho, Schulich School of Medicine and Dentistry, University of Western Ontario, Canada
Marco de Carvalho Filho, University of Groningen, University Medical Center Groningen, The Netherlands
Debbie Jaarsma, University of Groningen, University Medical Center Groningen, The Netherlands
Esther Helmich, University of Groningen, University Medical Center Groningen, The Netherlands

ABSTRACT:
Introduction: In postgraduate medical education (PGME), working and learning take place in clinical workplaces. These environments are often complex and dynamic. Staying motivated when working and learning in complex workplaces can be challenging for medical trainees (1). When the complexity of these workplaces exceeds trainees’ aptitude, this may reduce feelings of competence, which may hamper their motivation. Motivation, however, is essential for healthy development and learning. Motivation theories aim to explain how intrapersonal and interpersonal aspects influence motivation. We expected that clinical environments include additional aspects that may not necessarily fit into motivation theories. Therefore, we used a systems approach to explore how different aspects of the clinical environment influence trainees’ motivation and how they are intertwined.

Methods: We employed the rich pictures drawing method (2) as a visual tool to capture the complexities of the clinical environment that are not so easily explored or verbalised. This method stimulates people to reflect on experiences and think in different ways, which may lead to richer descriptions compared to interviews only. A purposeful sample of fifteen first- and second-year PGME trainees drew a rich picture representing a motivating situation in the workplace and were interviewed afterwards. The trainees worked in six different hospitals in one educational region in the Netherlands. Data collection and analysis were performed iteratively, following a constructivist grounded theory approach, using open, focused, and selective coding strategies as well as memo writing. Both drawings and the interviews were used to reach our results.

Results: Trainees drew situations pertaining to tasks they enjoyed doing, and that mattered for their learning or patient care. Four dimensions of the environment were identified that supported trainees’ motivation. First, social interactions, including interpersonal relationships, supported motivation through close collaboration between healthcare professionals and trainees. Second, organisational features, including processes and procedures, supported motivation when learning opportunities were provided, or trainees were able to influence their work schedule. Third, technical possibilities, including tools and artefacts, supported motivation when tools were used to provide trainees with feedback or trainees used specific instruments in their training. Finally, the physical space supported motivation when the actual setting improved the atmosphere or trainees were able to modify the environment to help them focus. The drawings illustrated that, especially, interactions between these dimensions made clinical situations motivating. Both trainees and other healthcare professionals could modify aspects of these four dimensions to optimise the motivation of trainees. Optimal motivation was observed when there was a synergism in the dimensions and the complexity of clinical practice was in line with trainees’ level of competence.

Discussion and Conclusions: This study illustrates that trainees’ motivation is interwoven with the clinical environment where they work and learn. Our findings suggest that social interactions, organisational features, technical possibilities, and the physical space are complementary dimensions of clinical workplaces that may support (or hamper) motivation. Both trainees and other healthcare professionals can modify aspects of these dimensions to create a safe environment and optimal learning opportunities. It seems important that trainees as well as other healthcare professionals aim to tailor clinical situations to
meet the abilities and needs of individual trainees to optimally support their motivation in practice. This includes fine-tuning and balancing trainees’ needs with the requirements of clinical practice and building an entrusting relationship between trainees and supervisors to empower trainees in their learning. While existing motivation theories often focus predominantly on the social environment, we suggest to incorporate more dimensions of the (clinical) environment. Being receptive to and include these non-social dimensions may help to further increase our understanding of motivational dynamics during PGME and support trainees to navigate through their training.

ABSTRACT:

Introduction: COVID-19 has caused major disruptions to healthcare, with voluntary opportunities offered to medical students to provide clinical support. Other studies have shown a discrepancy between intention to volunteer and actual volunteering behaviour during COVID-19, but they have not explored the reasons why this may be the case in depth [1]. We used the conceptual framework of prosocial behaviour – behaviours whose primary focus is benefiting others – to examine factors motivating and inhibiting medical student volunteering during COVID-19. Latane and Darley proposed that, in prosocial behaviour theories, there are five factors that motivate someone to help during an emergency [2], and Baron et al. posited these were the same for volunteering [3]. They are: 1. Noticing something is abnormal; 2. Interpreting the situation as an emergency; 3. Deciding you are responsible; 4. Deciding whether you have the skills or knowledge to help; and 5. Making a final decision on providing help [2,3].

Understanding the factors that influence prosocial behaviour during the current pandemic is important, as there is a continuing need to develop surge capacity [4]. Through improving understanding of students’ motivations to volunteer, we aimed to identify educational strategies that support prosocial behaviours during COVID-19.

Methods: We conducted an in-depth, mixed-methods cross-sectional survey developed from previous literature. The survey was distributed from 2nd May to 15th June 2020 to medical students studying at UK medical schools via their medical schools and social media. Ethical approval for the study was obtained from the University of Cambridge Psychology Research Ethics Committee (PRE.2020.040). This research was conducted within the paradigm of pragmatism. We used a theory-informing inductive data analysis approach. We first inductively analysed qualitative responses, later applying Latane and Darley’s prosocial behaviour theory to our data as a ‘sensitising concept’.

Results: A total of 1145 medical students from 36 medical schools completed the survey. While 947 (82.7%) of students were willing to volunteer, only 391 (34.3%) had volunteered. The majority (92.7%) of students understood that they may be asked to volunteer, which we interpret as widespread recognition of an emergency situation. However, we found that deciding one’s responsibility to volunteer was mitigated by a complex interaction between the interests of others and self-interest. Further, concerns revolving around professional role boundaries influenced students’ decisions over whether they had the required skills and knowledge to volunteer. Deciding to volunteer depended not only on possession of necessary skills, but also seniority and identification with the nature of volunteering roles offered.

Discussion and Conclusions: To our knowledge, this is the first study to explore a conceptual framework for student volunteering during the COVID-19 pandemic. This study demonstrates that Latane and Darley’s theory of prosocial behaviour can be applied to medical student volunteering during COVID-19 and can be used to explore the reasons why there is a discrepancy between intention to volunteer and actual volunteering behaviour. This study expands on existing theory through the addition of two domains that
students consider before making their final decision to volunteer. These are logistics - whether it is logistically feasible to volunteer - and safety - whether it is safe to volunteer personally, and for others. We identified a number of modifiable barriers to prosocial behaviour encountered by medical students and provide suggestions of how our conceptual framework can be operationalised within educational strategies to address these barriers. Optimising the process of volunteering can aid workforce planning and healthcare provision, and may facilitate a volunteering process that is safer for students, staff, and patients.

References:
4. Iacobucci G. Covid-19: NHS is placed on highest alert level as intensive care beds fill up. BMJ 2020;371:m4296. doi:10.1136/bmj.m4296
#RP1: Research Paper - Context in HPE

#RP1.3 Relationships between co-regulatory network characteristics and self-regulated learning: A social network study (7801)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:40 to 11:00

**AUTHOR(S):**  
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**ABSTRACT:**

**Introduction:** Clinical clerkships are challenging learning environments in which medical students often struggle to self-regulate their learning [1]. Self-regulated learning involves formulating learning goals, planning, implementing and adjusting strategies to achieve goals while monitoring progression, followed by self-reflection and formulation of new learning goals [2]. Recent conceptualizations of self-regulated learning acknowledge the importance of co-regulation, i.e. students' interactions with others in their networks to support self-regulation. During co-regulated learning, learners regulate their cognitions, motivation and behaviour together with other individuals in the environment, temporarily mediating regulatory learning processes [3]. Using a social network approach, this study aims to explore and describe relationships between characteristics of medical students' co-regulatory networks in clinical settings (network size, network diversity, and interaction frequency), students' perceptions of learning opportunities, and their self-reported self-regulated learning.

**Methods:** The authors collected survey data from 403 undergraduate medical students during their clinical clerkships (response rate 65.5%). The survey explored various self-regulatory learning behaviours as well as the composition of and interaction frequencies within their co-regulatory networks. Using multiple regression analysis, structural equation modelling techniques, and analysis of variance, the authors explored relationships between co-regulatory network characteristics (network size, network diversity, and interaction frequency), students’ perceptions of learning opportunities, and their self-reported self-regulated learning.

**Results:** Across all clerkships, data showed positive relationships between interaction frequency and self-regulated learning ($\beta=0.095$, $p<.05$) and between network size and interaction frequency ($\beta=0.530$, $p<.001$), and a negative relationship between network diversity and interaction frequency ($\beta=-0.474$, $p<.001$). Students’ perceptions of learning opportunities showed positive relationships with both self-regulated learning ($\beta=0.295$, $p<.001$) and co-regulatory network size ($\beta=0.134$, $p=.01$). Characteristics of clerkship contexts influenced both co-regulatory network characteristics (size and interaction frequency) and relationships between network characteristics, self-regulated learning, and students’ perceptions of learning opportunities. Within the surgical clerkship, network size was largest, and interaction frequency strongest. Interaction frequency was weakest in the last clerkship of the program.

**Discussion and Conclusions:** The present study reinforces the importance of co-regulatory networks for medical students’ self-regulated learning during clinical clerkships. By elucidating the scope of co-regulation in clinical workplaces, this study builds on, contributes to, and reinforces changing conceptualizations of self-regulated learning as socially embedded learning activities [5,6]. Findings imply that supporting development of strong networks aimed at frequent co-regulatory interactions may enhance medical students’ self-regulated learning in challenging clinical learning environments. Additionally, rather than focusing students’ self-regulated learning training on individual skills such as goal setting, self-assessment and reflection, medical education programmes may need to pay more attention to development of skills that enable students to engage in co-regulated learning, such as feedback seeking and engaging others in learning conversations. With its social network orientation, this study offers methods for operationalizing self-regulated learning and co-regulated learning in clinical workplaces,
thereby paving a way along which medical education research can continue to disentangle social, relational, and contextual factors influencing self-regulated learning.

#RP1: Research Paper - Context in HPE

#RP1.4 Students player types in medical education: a Q-methodology study (7646)

**Date of Presentation:** 29 August 2021
**Time of Presentation:** 11:00 to 11:20

**AUTHOR(S):**
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**ABSTRACT:**

**Introduction:** Game-based learning (GBL) is increasingly applied in medical education in order to keep learning enjoyable, engaging but still educational [1]. Yet, the understanding of how and when to implement game-based learning remains in its infancy [1]. There are numerous options to design GBL but there is little data-informed knowledge on which design choices could be made for GBL to be effective (i.e. promote learning outcome) in a given educational context. Different views in the liking of play are shown to be receptive for different GBL-designs [2]. Hence, individual differences in game preferences should be taken into account before selecting a specific GBL design. In this study we took inspiration from the research of player types in games [2] in order to investigate our research question: what patterns in students’ perceptions of play and games can be identified, and what are their most important characteristics?

**Methods:** We explored patterns on game preferences in undergraduate medicine students using Q-methodology. Q-methodology aims to map all the opinions in a quantitative and qualitative way. While the qualitative techniques of Q-methodology allows expression of subjective opinions, the quantitative method ensures statistical analysis for grouping participants with shared opinions. We enrolled 102 participants (which is sufficient for Q-methodology research) and had them characterise their game preference by sorting 49 statements about games on a continuum, while letting them explain the reason for the sorting afterwards. The statements were extracted from a prior focus group study and based on literature. To identify common viewpoints (individuals with similar sorts), we used by-person factor analysis. The resulting factors and qualitative data were used to interpret and describe patterns on game preferences.

**Results:** We identified five distinct patterns in game preferences; the social achiever, the explorer, the socializer, the killer and the troll. These patterns centre upon two themes that are salient in existing scientific and grey literature on play and player typologies: sociability and achievement. The five patterns varied mostly regarding: cheating, playing alone, story-telling and the difficulty of winning.

**Discussion and Conclusions:** The patterns were clearly interpretable, distinct and showed that medical students range widely in how they perceive play. According to existing literature on game preferences, such patterns may require different types of design which illustrates the importance of taking subjectiveness into account when designing GBL, and demonstrates that GBL is far from a uniform entity. We present a novel conceptual framework that could aid future researchers and educators in choosing effective GBL designs in a purposeful and student-centred way.

**References:**
ABSTRACT:

Background: The sexual orientation of students is associated with persistent disparities in academic performance in higher education. Research suggests that creating an inclusive learning environment for students who do not identify as heterosexual may improve their academic attainment. However, a paucity of research exists on the impact of students' sexual orientation on learning, particularly regarding UK healthcare degrees.

Summary of Work: This research forms part of a larger project examining attainment gaps in pre-registration healthcare degrees. It is a pilot study focusing on comparing the learning environments experienced by healthcare students who do and do not identify as heterosexual. An online survey was distributed to all students undertaking a pre-registration healthcare degree in dentistry, dietetics, medicine, midwifery, nursing, pharmacy or physiotherapy at a London university. 498 valid responses were analysed using SPSS (Version 26). 431 (86.5%) participants identified as heterosexual. 67 (13.5%) did not identifying as heterosexual.

Summary of Results: Compared to their heterosexual peers, students not identifying as heterosexual reported their sexual orientation had negatively impacted their learning. 51.7% (n=35) of students not identifying as heterosexual found their academic learning environments to be welcoming whilst 47.5% (n=32) found their clinical environments welcoming. Students not identifying as heterosexual were less likely to feel they could be themselves at university (p<0.05) and in clinical placement (p<0.05). They were less likely to agree their feedback had been valued (p<0.05). They were less likely to have regular access to computer/laptops/tablets, reliable internet, and a quiet study environment (p<0.05).

Discussion and Conclusions: This research highlights that students not identifying as heterosexual perceived their learning environments to be insufficiently supportive. This lack of support is likely to negatively impact their attainment. Differences in access to essential study items and a quiet study environment is a further barrier to maximising their academic potential. Further qualitative research is needed to explore the factors impacting the learning of students not identifying as heterosexual.

Take-home Messages: The non-inclusive learning environment experienced by students not identifying as heterosexual has a negative impact on their academic attainment. Acknowledging this and providing support for this group of students should contribute to narrowing the attainment gap between these students and their heterosexual peers.
#EP1: ePoster - Diversity

#EP1.2 Exploring the pervasion of systemic racism in medical education: Experiences of Physician Assistants from the USA (8964)

Date of Session: 29 August 2021  
Time of Session: 10:00 to 11:30

AUTHOR(S):  
Robert Wooten, Wake Forest School of Medicine, USA*  
Chris Gillette, Wake Forest School of Medicine, USA  
Nicole Rockich-Winston, Medical College of Georgia, USA  
Tasha Wyatt, Uniformed Services University of the Health Sciences, USA  
Carol Hildebrandt, Wake Forest School of Medicine, USA  
Sonia Crandall, Wake Forest School of Medicine, USA

ABSTRACT:

Background: According to the United Nations, systemic racism is prevalent and growing throughout the world. Systemic racism affects access to and the quality of education, particularly medical education. Professional identity formation (PIF) is a key component in medical education, yet, the unique experiences of racial/ethnic minorities have been largely excluded from this research.

Summary of Work: This qualitative study explored the influence of race and ethnicity on the PIF of those considered to be underrepresented in medicine (UiM) physician assistants (PA) in the United States (US). First- and second-year PA students and actively practicing PAs were interviewed. Trainees were located in the southeast region while clinicians were practicing throughout the country. Data were analyzed by 5 trained researchers using constructivist grounded theory to better understand how social-, historical-, and cultural systemic racism continues to impact UiM PA students and clinicians.

Summary of Results: We recruited 45 students and clinicians. The majority of the sample identified as Black/African American (51%, n=23), 12 (27%) identified as Hispanic, 4 (9%) identified as Native American/Indigenous, and 6 (13%) identified as Mixed Race. The majority of the same were trainees (62% n=28). The results indicate that students and clinicians racial/ethnic identity is highly salient and guides how they practice medicine. Respondents also noted they are frequently the only UiM in clinical and educational settings. Results also indicate that students and clinicians experience micro-aggressions from fellow students, faculty, and clerkship preceptors. Respondents also described methods to improve support from educational institutions and profession.

Discussion and Conclusions: Students and clinicians are acutely aware that they are frequently the only UiM PA trainee or clinician in clinical settings. Being intentional in recruitment efforts to ensure that more UiM students enter the PA profession is imperative to resist institutional racism in healthcare.

Take-home Messages: Educational institutions who wish to enroll more UiM students into health professions should understand how historical and present-day socio-cultural systemic racism impacts the professional development of students and clinicians. Ensuring that students, faculty, administrators, and clinical preceptors are aware of their own micro-aggressions, and actively recruiting UiM students may positively influence educational and clinical environments.
ABSTRACT:

Background: LGBTQIA+ people are at higher risk for physical and mental health conditions. Despite key health disparities, medical schools severely miss- and under-represent LGBTQIA+ health issues, resulting in health professionals perpetuating discrimination, ignorance and being ill-equipped to provide appropriate medical care to LGBTQIA+ patients. The International Federation of Medical Students Associations (IFMSA) aims to advocate for this issue and support capacity building activities on LGBTQIA+ issues for medical students.

Summary of Work: From May to September 2020, a survey was conducted by the IFMSA, to collect data on the inclusion of LGBTQIA+ health in medical curricula across the globe. IFMSA has a Program on Realizing SRHR, under which members of IFMSA can enroll their activities that focus on LGBTQIA+ issues. This abstract presents the results of the survey and a summary of activities, which target medical students, enrolled in the relevant Program from October 2018 until January 2021.

Summary of Results: 130 responses were gathered, referring to 93 medical schools from 44 countries. 40.7% of the respondents mentioned no topic of LGBTQIA+ health is included in their curriculum. 88.4% of respondents mention they have extracurricular activities targeting LGBTQIA+ health in their medical schools. Out of those activities, in the IFMSA Program, there were 26 activities enrolled that target capacity building of medical students on the focus area of LGBTQIA+ issues. Respondents rate their satisfaction on the learning acquired in their medical curricula with 1.68/5, their satisfaction with their schools approach to the topic with 1.62/5, their confidence to tackle this topic with 3.31/5 and the importance of this topic with 4.16/5.

Discussion and Conclusions: Medical students see the need for LGBTQIA+ issues in their curriculum and they are willing to address the needs of the community in their medical practice, but this is not illustrated in the medical curricula. In contrast, students express a high level of confidence to address these topics. This can be the result of extracurricular activities, such as the ones organized by IFMSA.

Take-home Messages: There is a clear need for inclusion of LGBTQIA+ issues in medical curricula.
ABSTRACT:
Background: Gender bias is perpetuated in the medical profession despite last decades feminization process. The growing number of female medical students and professionals is not followed by any change in the harsh reality: unequal pay and treatment, harassment and misogyny. Within this context, a recent phenomenon has been observed inside brazilian medical schools: the creation of female student organizations guided by feminist ideals, well known as feminist collectives.
Summary of Work: In order to better understand them, we have conducted a qualitative study, approved by the local ethics committee, based on survey responses with the participants of these collectives in the state of São Paulo, Brazil. The sample was defined through the Snowball method, and we obtained 110 valid responses from 20 medical schools, both private and public.
Summary of Results: The results revealed that these associations are collaborative and horizontal in their construction, and represent a stronghold of support and welcoming of these women, in which they feel safe, share experiences, discuss feminist theory, unite with other students from different graduation years or even other health courses and strengthen themselves in order to acquire something they hardly experience in other medical contexts: having a voice and being heard. The gender discrimination is subtly inflicted in a wide range of contexts, and not only by students superiors, like teachers and doctors, but also by peers, former students and even the medical school itself.
Discussion and Conclusions: Women still suffer the effects of gender bias in medicine, from early in their career, beginning in medical school, most of them associated with hidden curriculum, not predicted by the formal curriculum and practiced throughout every established relation. Feminist collectives are a form of student engagement that represents a response to a wider problem, determined and influenced by sociocultural, structural and psychosocial aspects. It involves affections, sense of belonging and the development of professional identity.
Take-home Messages: Institutionalizing and strengthening student engagement initiatives and creating a welcoming environment for female medical students can minimize the suffering generated by gender discrimination in medical schools.
**ABSTRACT:**

**Background:** We don't just want to strive for equality in GP training, we want to strive for equity. Kath Woolf's 2014 study on differential attainment concludes there is inequality throughout training. The number of International Medical Graduate (IMG) GP trainees rises, and the differential attainment gap in our Deanery is wide. Covid has also highlighted the inequity in being an ethnic minority doctor, and we want to level the playing field for all trainees. Local educators felt that to achieve greater equity, we first need to understand our trainees' experiences, thoughts, and feelings about their training and hear their views on how to improve their experience.

**Summary of Work:** We developed an online survey covering topics including perceived support needs of IMG trainees, experiences of discrimination, and ideas for improvement. The survey link was emailed to all trainees in our Deanery by training patches. Responses were anonymous. The survey specifically covered areas that were within the power of local educators to change, enabling us to use results to drive improvement.

**Summary of Results:** We received 187 responses from a cohort of approximately 530 trainees - 35% response rate. Responses range from completely unaware of additional support needs for trainees from different backgrounds through to those who had experienced uncomfortable situations. Many had clear ideas for ways to improve. Thematic analysis allowed us to summarise the findings into three key areas. Training needs around: • Culture - NHS & UK • Language & communication skills • Training - portfolio & exams

**Discussion and Conclusions:** Our results triggered discussions within Patch Teams, and more widely, to facilitate changes in practice. Improvements to date include: • Named IMG Lead on each Wessex training Patch • Introduction to GP Training for International Graduates course • Journey to GP session in trainee small groups • Awareness-raising workshops for Programme Directors and trainers. These changes utilised the trainees' ideas for solutions.

**Take-home Messages:** Culture can be changed with effort and commitment from those in educational role models. Engagement with trainees leads to ideas that can influence that change and create opportunities to strive for equity for all.
# EP1: ePoster - Diversity

# EP1.6 Assessing the level of training provided to foundation doctors regarding caring for LGBTQ+ patients (9058)

**Date of Session:** 29 August 2021  
**Time of Session:** 10:00 to 11:30

**AUTHOR(S):**  
Reshma Shanmugam, University Hospitals Birmingham Trust, UK*  
Sharvari Vadeyar, University Hospitals Birmingham Trust, UK*  
Habiba Ali, University Hospitals Birmingham Trust, UK

**ABSTRACT:**

**Background:** Existing evidence shows that health outcomes are generally worse for those who identify as lesbian, gay, bisexual, transgender and queer (LGBTQ+) than for the rest of the population. Many report experiencing inappropriate questioning and curiosity from healthcare staff (1) and feeling their specific needs are not considered (2). The importance of appropriate training for healthcare professionals in this area has become increasingly recognised (3), with studies showing a need for dedicated LGBTQ+ health training (4).

**Summary of Work:** This project aims to assess the level of training provided to foundation trainees in Birmingham’s Heartlands, Good Hope and Solihull Hospitals regarding caring for patients of the LGBTQ+ community compared to the standard: All health and social services should deliver mandatory equality and diversity training for all staff, which explicitly includes: needs and experiences of trans patients and service users, privacy and confidentiality. (5) We conducted a retrospective questionnaire of 30 foundation trainees, collecting data on the types of formal and informal training received, as well as how this teaching impacted their knowledge and confidence in patient care.

**Summary of Results:** 90% of respondents had never received any formal training regarding caring for LGBTQ+ patients and of the remaining 10%, all formal training was received during undergraduate training. Only 55% of those who reported receiving informal teaching stated that these sessions improved their confidence in caring for such patients while 87% of all respondents felt that receiving formal education on this topic would be useful.

**Discussion and Conclusions:** There is a clear need for the integration of formal LGBTQ+ centred teaching in the core foundation training syllabus. Such training may not have occurred thus far due to issues surrounding delivery and prioritisation of LGBTQ+ education. However, we believe that imparting such teaching through specialist external speakers would greatly benefit both healthcare workers and the care experience of the LGBTQ+ patient community.

**Take-home Messages:** 1) These results show a demand for formal education in LGBTQ+ health for foundation trainees. 2) We believe delivery of this education should occur via specialist external speakers. 3) Further evidence is required on the impact of LGBTQ+ education for healthcare workers on patient care.
#EP1: ePoster - Diversity

#EP1.7 Clichés and stereotypes in roles for simulated patients (SP) - revising SP roles for a modern medical education (8034)

Date of Session: 29 August 2021
Time of Session: 10:00 to 11:30

AUTHOR(S):
Julia Freytag, Charité Universitätsmedizin Berlin, Germany*
Susanne Lück, Charité Universitätsmedizin Berlin, Germany

ABSTRACT:
Background: Research has shown that in simulation, (racial) diversity is underrepresented. Through underrepresentation and other mechanisms, SP scripts can include and therefore reproduce stereotypes connected to gender, ethnicity, or sexual orientation.

Summary of Work: At Charité Universitätsmedizin Berlin, undergraduate medical students undergo a communication skills training involving 20 scenarios with simulated patients (SP). Their roles were searched for stereotypical descriptions. Especially, we looked for: • Gender aspects: Reflecting clichés and prejudices is a learning objective in the German Competence Based Catalogue of Learning Objectives for Undergraduate Medical Education. We checked if the scripts included stereotypical descriptions of gender and questioned why some roles are only played by women/men. • Portrayal of (minority) groups: Certain population groups are often portrayed as connected to certain diseases/problem (e.g. a homosexual man with an STD). Our goal was to make sure these groups do not only occur in connection to supposedly typical diseases. SP scenarios were analysed and revised by three experienced SP educators - afterwards, changes were discussed in the whole team.

Summary of Results: Up to this point, 16 scenarios have been revised, 5 of which have already been discussed in the team and a consensus has been reached. We analysed aspects like description of personality, mother tongue, socioeconomic status, career, and sexual orientation. Changes include, for example, a role of a woman wanting to quit smoking (motivational interviewing), which was changed to her being in a homosexual instead of a heterosexual relationship. Apart from the changes we made, certain gaps of the curriculum became obvious, e.g. the lack of an SP case with a trans person.

Discussion and Conclusions: Revising SP scenarios is a resource intensive task, but mandatory for ensuring the curriculum reflects the modern society and the situations medical students will face in their professional lives. It is also important to make sure SP scenarios do not reinforce biases.

Take-home Messages: Taking action to revise SP scenarios including stereotypes and clichés contributes to a modern medical education. Resource constraints and/or a pool of SP, which is not diverse enough to portray a diverse group of patients, can limit revision work.
#EP1.8 Understanding the academic attainment gap in medical education: the important role of theory (8332)

**Date of Session:** 29 August 2021  
**Time of Session:** 10:00 to 11:30

**AUTHOR(S):**  
Muhammad Bojang, King’s College London, GKT School of Medical Education, UK*  
Andrew Bassett, Kings College London, GKT School of Medical Education, UK  
Shuangyu Li, Kings College London, GKT School of Medical Education, UK

**ABSTRACT:**  
**Background:** The academic attainment gap (AAG) describes the differential degree outcomes between different student groups that can be measured in terms of varying socio-demographic characteristics. Medical educational research shows that pedagogy and assessment styles may influence the AAG for students from Black and Minority Ethnic Backgrounds. Such investigations have foregrounded the categorisation of the AAG in undergraduate medical education; however, its causes remain under-researched. Theories from the social sciences have been under-utilised but help to unpack the complexity of the AAG.

**Summary of Work:** This work seeks to show how four pre-existing and established theories in the social sciences can contextualise the AAG in undergraduate medical education. A critical reflection on, as well as a cross comparison of these theories is presented, in light of their application to the AAG in undergraduate medical education.

**Summary of Results:** Self-determination theory (SDT), critical race theory (CRT), a theory of practice (ToP) and the hidden curriculum (HC) may help to explicate the causes of the AAG. Several studies have applied these theories in educational contexts, with SDT showing the strongest empirical basis. A ToP and CRT centralise social class and race respectively but have scope for recognising the interplay between various systems of inequality in impacting academic attainment. The HC and a ToP overlap in their emphasis on socialisation but both theories have been criticised as overly deterministic. All these four theories are structural in orientation and therefore challenge deficit models of academic underachievement.

**Discussion and Conclusions:** SDT is a universalistic theory of human motivation, within which the other aforementioned three theories can be utilised. The structural causes of the AAG need to be adequately theorised, so that their underlying effects can be mitigated. Student experience is inextricably linked to academic performance; therefore, formal as well as informal outcome measures such as competencies should be investigated.

**Take-home Messages:** Future research may consider how coexisting demographics shape students experiences of undergraduate medical education and seek to theorise the AAG.
#EP1: ePoster - Diversity

#EP1.9 Perceptions of inclusive learning in academic and clinical environments: a survey of pre-registration healthcare students (8072)

**Date of Session:** 29 August 2021  
**Time of Session:** 10:00 to 11:30

**AUTHOR(S):**  
Jia Liu, King's College London, UK*  
Dr Andrew Bassett, Kings College London, UK  
Dr Heidi Lempp, Kings College London, UK  
Dr Shuangyu Li, Kings College London, UK

**ABSTRACT:**  
**Background:** Pre-registration (on-course) education in healthcare plays an intrinsic role in creating an inclusive professional culture and a culturally competent workforce. However, previous research suggests the existence of inequality and barriers for healthcare students with protected characteristics, such as gender, ethnicity, disability, and sexual orientation.

**Summary of Work:** This research examined healthcare students perceptions about the inclusivity of their academic and clinical learning and teaching. A self-completed online survey was distributed from 15 October-30 November 2020 (LRS-19/20-20168). All students enrolled in a Dietetics, Dentistry, Medicine, Nursing, Midwifery, Pharmacy or Physiotherapy pre-registration degree at a large London university were invited to participate. 498 valid responses were collected. Descriptive statistics and non-parametric tests were calculated in SPSS (Version 25).

**Summary of Results:** 85.4% (n=381) of students agreed their current curriculum is inclusive to people from white ethnicities while 67.5% (n=301) agreed their curriculum is inclusive to students who are Black, Asian and Minority Ethnic. 44.8% (n=200) agreed their curriculum is inclusive to people who are lesbian, gay, bisexual, transgender and queer or questioning. 32.5% (n=145) agreed their curriculum is inclusive to people with disabilities. Students reported different levels of sense of belonging at university and on clinical placement. Students with disabilities are more likely to have a diminished sense of belonging at university (p<0.05) and on clinical placement (p<0.001). LGBTQ students are more likely to have a diminished sense of belonging at university (p<0.001) and on clinical placement (p=0.001). International students are more likely to have a diminished sense of belonging on clinical placement (p<0.05).

**Discussion and Conclusions:** This study provides unique insights into the inclusivity of learning for healthcare programmes and highlights the need to foster a greater sense of belonging for students with protected characteristics. Understanding the impact of these characteristics on students learning and attainment contributes to development and evaluation of strategies to support the development of curricula, teaching and assessment practices that are more inclusive.

**Take-home Messages:** The lack of inclusivity for students with protected characteristics can negatively impact students learning experiences. Bridging the attainment gap should create an inclusive academic and clinical environment for all.
#EP1: ePoster - Diversity

#EP1.10 Academic and social integration is experienced similarly by majority students and ethnic minority students (9149)

Date of Session: 29 August 2021
Time of Session: 10:00 to 11:30

AUTHOR(S):
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Janique Oudbier, AmsterdamUMC/location AMC, The Netherlands
Gerard Spaai, AmsterdamUMC/location AMC, The Netherlands

ABSTRACT:
Background: There is evidence that study achievement level of majority medical students surpasses that of their ethnic minority peers. Several studies have made links between students academic and social integration and study achievements, however results are contradictory and there is no consistent relationship between academic/social integration and study achievement. Because medical schools are increasingly investing in inclusive education, ensuring that all medical students feel that they belong, the aim of our study was to determine academic and social integration of medical students in their preclinical years and differences between majority and ethnic minority students in a medical school the Netherlands.

Summary of Work: In 2020 67 students in year 2 and 105 students in year 3 completed questions about academic and social integration in the context of a larger questionnaire evaluating our preclinical curriculum. Eight questions on a 5 points Likert scale were asked about academic and social integration. Scores were analysed using descriptive statistics.

Summary of Results: Majority and ethnic minority students are neutral about the items that represent academic integration such as my contact with teachers is good (resp Av 3.4; Av 3.2), and I am satisfied with student support. When asked about the items about social integration, both students groups were satisfied with contacts with other students (resp Av 3.1; Av 3.2), agreed that it was easy to make friends with peers (resp Av 3.7; Av 3.5), and felt at ease (resp Av 3.7; Av 3.4).

Discussion and Conclusions: We did not find any differences between majority and minority students in their scores on academic and social integration. This may entail that academic integration is similar for both students groups, for example because teachers are now more competent in creating an inclusive classroom for all students. Social integration may be similar because ethnic minority students find themselves comfortable with other students, either from majority groups or from ethnic minority groups. However, the measurement of academic and social integration may be too broad and unable to capture the nuances that are reported by students in qualitative studies.

Take-home Messages: Academic and social integration is important for all students, but may be difficult to measure.
#DR1: Doctoral Reports 1

**#DR1.1 Negotiating the Capability Imperative: Enacting Disability Inclusion in Medical Education (7626)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:00 to 10:20

**AUTHOR(S):**  
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**ABSTRACT:**

**Introduction:** Medical education is a critical site for disability inclusion. Despite increased attention to diversity, equity, and inclusion in this context, [1] disabled medical students report enduring marginalization that reveals deeply-rooted inequities in medical systems and education. [2-3] Research into this topic remains thin, and little work has meaningfully engaged disability studies theory. This thesis presents a grounded theory of disability inclusion at four U.S. medical schools. The central research question was, “how is disability inclusion enacted at the participating schools?”

**Methods:** Following a constructivist grounded theory methodology, [4] I iteratively conducted and analyzed 52 semi-structured interviews with 19 disabled medical students and 27 school officials (faculty and administrators). Relevant medical school policies and observations of physical spaces comprised additional data sources. Theories from the field of disability studies, primarily studies in ableism and crip theory, [5-6] were engaged to interpret findings.

**Results:** Student and school-official interactions with inclusion were informed by a flawed, dichotomous cultural logic of medical education, the capability imperative. Dominant conceptions of disability as individual inability contrasted with expectations of hyper-ability in medicine. Student and school-official accounts illuminated the capability imperative, which consists of three motifs: selfless superhuman physicians, the “real world” of medicine, and the malleable student. Together, these conditions demanded that students fit existing medical training environments. Competing, alternative conceptualizations of disability supported actions beyond rejection of disability or exclusion, however, the legibility of a student’s experience moderated understandings of disability and associated inclusive actions. I theorize disability inclusion in medical education as a process of negotiating the capability imperative. Students and school officials negotiated barriers to access depending on perceived consequences to seeking or making change. They upheld or worked the capability imperative to meet, or enable students to meet, existing expectations. Some actions resisted the capability imperative, through attempts to resignify capability.

**Discussion and Conclusions:** These negotiations illustrated an ableist hegemony at work, requiring hyper-able performances but with opportunities for subversion. [5-7] An accommodations-focused approach to inclusion that individualized disability and access supported this hegemony. [8-9] As a result, disability inclusion in medical education remains incomplete and requires transformation. [10-11]

In response, I reimagine educational structures that value disabled medical professionals. Fuelled by a politics of crip futurity, [11] this transformative vision is grounded by universal design, reconceptualizes notions of capability, and fosters disability epistemology in professional identity formation. Although disability inclusion in medical education has advanced in recent years, the focus of these efforts has been on accommodations to retrofit the existing environment. These mechanisms continue to mark disabled students as “other” and leave the ablest roots of medical education intact. A reevaluation of the structure, function, and purpose of medical education is necessary to advance inclusive ideals.

**References:**

#DR1: Doctoral Reports 1

#DR1.2 Performing identity within Longitudinal Integrated Clerkships: a multi-site, international exploration (7665)

Date of Presentation: 29 August 2021
Time of Presentation: 10:20 to 10:40

AUTHOR(S):
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Paul Whybrow, Academy for Primary Care, Hull York Medical School, UK
Catherine Ard, Department of Medicine, University of Colorado School of Medicine, USA
Jennifer Adams, Department of Medicine, University of Colorado School of Medicine, USA
Andrew ORegan, University of Limerick Graduate Entry Medical School, Ireland
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ABSTRACT:

Introduction: Continuity facilitates high quality medical care, yet, most clinical education is fragmented, devoid of opportunities for students to develop meaningful relationships. Longitudinal Integrated Clerkships (LICs) have been implemented worldwide to address this fragmentation, promoting ‘student participation in the comprehensive and multidisciplinary care of patients over time’ (1). Studies have found LICs attract practitioners to underserved areas and specialities and can mitigate the hidden curriculum. Less is known about how LICs impart their benefits. One explanation is that LICs strengthen identity development, which is important for career choice (2). Despite the explanatory potential of this hypothesis, the impact of the model on identity remains unclear. Therefore, this thesis asks: “How do medical students construct and perform medical professional identities within longitudinal clinical placements?”.

Methods: The programme of study included a systematically conducted scoping review and in-depth longitudinal qualitative study. The scoping review, following Arksey and O’Malley’s framework, mapped research in regard to identity development within LICs to date to identify gaps in the literature. Operating from a social constructionist paradigm, a longitudinal qualitative study was conducted, recruiting 33 LIC students across four institutions within the UK, Ireland and USA, to explore students’ identity development during their longitudinal placements. In-depth, semi-structured interviews were conducted with participants at the entrance (n=33) and exit (n=29) of their programme. They also completed audio diaries throughout their placement. Data were analysed inductively using a reflexive thematic approach and Goffman’s dramaturgical model (3) was applied as a sensitising theoretical lens.

Results: The scoping review highlighted research that participation in LICs facilitates identity development. Through contextual continuities and increasing responsibility, students are co-providers of patient care. Most research conceptualised identity from sociocultural theoretical perspectives. There are studies of how LICs relate to identity and morals, but these are underdeveloped. In this presentation I will discuss how the review’s findings informed the subsequent longitudinal qualitative study, which identifies four themes which speak to the ways in which students construct and perform their identities within LICs: 1. Students’ domains of role within longitudinal placements adhere to more ‘doctor-like’ social norms; 2. Longitudinal relationships play central roles in role recognition and identity performance; 3. Longitudinal placement experiences shape performance of moral identity; and 4. Longitudinal placements, voluntary or mandatory, influence career aspirations.

Discussion and Conclusions: This thesis explores how LICs, through educational continuity, encourage relationship-building and the realisation of students medical identities. Students roles within LICs (which are facilitated by the contextual continuities of time and space and the relationships students develop) permit them to perform identities which adhere more closely to their perceptions of what a doctor is and should be like, and allow them to receive recognition of their status from others- be that through becoming a patient advocate, adhering to the status quo of professionalism, becoming increasingly competent, or assuming an increased level of responsibility. Continuity manifested differently between sites and systems, though there was evidence of enhanced benefit when students move between settings.
Longitudinal relationships with patients were a site of moral identity development, as continuity of care challenged the ways in which students thought about patients, promoting person-centred practice. Placements influenced career aspirations through challenging negative speciality or demographic stereotypes, highlighting the importance of continuity of care, and facilitating a sense of belonging. By highlighting the ways in which longitudinal placements influence professional identity development, these findings offer important insight for health professions education in regard to the future development, delivery and promotion of LICs. Further, for non-LIC programmes, this thesis offers transferrable findings regarding ways to centre and encourage relationships which foster identity development within medical education.

References:
#DR1: Doctoral Reports 1

#DR1.3 Why do doctors work for patients? Medical professionalism in the era of neoliberalism (7679)

Date of Presentation: 29 August 2021
Time of Presentation: 10:40 to 11:00

AUTHOR(S):
Hiroshi Nishigori, Center for Medical Education, Nagoya University, Japan*
Jamiu Busari, Maastricht University, The Netherlands
Tim Dornan, Queens University, UK

ABSTRACT:
Introduction: Earlier publications argued that programs to teach medical professionalism should acknowledge that this is socially situated. Medical educators need to take into consideration political and economic factors, cultural influences, rules and regulations, social upheavals, and other sociocultural factors that influence medical professionalism when teaching and assessing it. I chose the Japanese context as a suitable one in which to examine sociocultural influences on professionalism. My thesis deepened the exploration of the following questions from several different angles on the topic: How bushido, a Japanese unique value system, influences medical professionalism; how junior residents in a context influenced by bushido and other value systems experience workload; and what motivates doctors to work. I selected the 2011 Tohoku earthquake and tsunami as an informative situation to find out what motivates doctors to work for patients beyond expectations. I also selected Yarigai (a sense of fulfilment from being engaged in an activity for its own sake), a motivator that is specific to the Japanese culture, as a trigger to elicit doctors’ narratives of how values influence their medical work.

Methods: My thesis comprised four interconnected papers: one perspective and three qualitative studies, in all of which I took a social constructivist standpoint. The first study compared a frequently referenced Western guide to professionalism, the physician charter, with the concepts of Bushido, a Japanese code of personal conduct originating from the ancient samurai warriors. In the second study, I conducted semi-structured individual interviews with 31 convenience-sampled junior residents in seven focus groups at three community teaching hospitals and thematically analysed the data. In the third study, I conducted semi-structured individual interviews with 15 Japanese doctors who had joined disaster relief activities in Tohoku, Japan, and qualitatively examined their motivation for doing so. The fourth study was a narrative inquiry into the yarigai resulting from15 doctors experiences of caring for patients.

Results: The seven main virtues of Bushido; rectitude (or gi), courage (or yu), benevolence (or jin), politeness (or rei), honesty (or meiyo), and loyalty (or chugi) are applicable to medical professionalism. Seven factors influenced residents’ subjective workload: (1) interactions within the professional community, (2) feedback from patients, (3) being in control, (4) professional development, (5) private life, (6) interest and (7) protected free time. These influenced whether work improved residents’ wellbeing or exhausted them. I argued that doctors’ intrinsic motivation is a two-edged sword, in that it both makes doctors put themselves out for patients and can burn them out. Real-life doctors’ Yarigai stories could encourage medical students to envision the kind of doctors they aspire to become. Yarigai stories could also help them find personal meaning in their future work.

Discussion and Conclusions: The Japanese concept of Do, which includes bushido, refers to ones path through life. Other Dos include martial arts such as judo and aikido, the tea ceremony, sado, and Japanese calligraphy, shodo. When referring to a Do like bushido in the context of teaching and learning, we refer not only to knowledge and skills but also to attitudes and behaviour. I conclude that there is room for further research on Do in relation to medical professionalism. I note similarities between the Japanese concept of yarigai and the European sense of contribution to others, highlighted by the individual psychologist Alfred Adler, both of which are utilitarian. I argue that these approaches are relevant to teaching medical professionalism in the neoliberal political climate of the 21st century. My answer to the question - Why do doctors work for patients? - is that they do so because they want to gain a sense of contribution to others or yarigai.
#DR1: Doctoral Reports 1

#DR1.4 Motivation of medical specialists for medical practice and CPD (7745)

Date of Presentation: 29 August 2021
Time of Presentation: 11:00 to 11:20

AUTHOR(S):
Stephanie Van der burgt, Amsterdam umc, The Netherlands*
Rashmi Kusurkar, Amsterdam UMC, Faculty of Medicine, Vrije Universiteit Amsterdam, Research in Education, The Netherlands
Gerda Croiset, University Medical Center Groningen, Faculty of Medicine, The Netherlands
Saskia Peerdeman, Amsterdam UMC, Location AMC, Institute for education and training, The Netherlands

ABSTRACT:
Introduction: Health reforms and a continuously changing work environment, changing level of expertise, societal and personal changes over time can increase job stress and give rise to change in professionals’ motivation and performance. However it is necessary that medical specialists stay motivated to face the challenge of learning throughout their career and engage in continuing professional development (CPD) to maintain their professional competence. Motivation for medical practice and CPD was the key concept in this thesis and was investigated from the perspective of the Self-Determination Theory (SDT).
Autonomous motivation (AM), which is the desirable type of motivation, has positive outcomes like better performance, learning, wellbeing and more vitality. AM benefits from the fulfilment of the basic psychological needs for autonomy, competence, and relatedness. The aim of this thesis was to gain insight into medical specialists’ motivation for medical practice, motivation for continuing professional development, the relationship between the two and the fulfilment of autonomy, competence and relatedness.
Methods: We used a multi-method approach which was suitable for the research questions. Quantitative findings from a survey (n=193) were further explored by using qualitative research methods. This allowed for exploration of mechanisms involved in motivation for medical practice and continuing professional development. In the three qualitative studies a constructivist approach was used and the two quantitative studies followed a post-positivistic approach. For qualitative data collection, non-participant ethnographic observations (approx. 836 hours) were conducted. In addition face-to-face, one-on-one, in-depth interviews (n=40) were conducted. Furthermore, various quantitative and qualitative analytical methods were used; cluster analysis, structural equation modelling, thematic analysis using open, axial and selective coding, template and content analysis with sensitizing concepts. Data was collected in multiple hospitals in the Netherlands as well as in a hospital in the United States.
Results: Four motivational profiles were found among medical specialists with slight differences in background characteristics, like gender, specialty or type of hospital. The profiles that had a high score on AM had a positive association with motivation for medical practice and motivation for CPD. Additionally autonomy and competence need satisfaction were positively associated with CPD. The issues stimulating and/or frustrating motivation were related to: 1) technical issues, 2) working with colleagues, 3) patient care, 4) work environment, 5) organization. Furthermore, we found that factors influencing motivation negatively are seen at the organizational, department and individual level. Finally, we uncovered three coping narratives that specialists construct when they try to handle the factors that influence motivation negatively. Two coping narratives were about fulfilment of autonomy and one narrative was about fulfilment of relatedness. We did not find a coping narrative on competence.
Discussion and Conclusions: In comparison to results from studies among medical students and pharmacists the motivation of medical specialists, both in the Netherlands and in the US, for medical practice can be considered to be of good quality. The healthcare environments investigated in this thesis were not conducive to the fulfilment of medical specialists needs of autonomy, competence and relatedness. The factors that motivate specialists or hamper the fulfilment of autonomy, competence and relatedness were common to both Dutch and American context and cultures. Awareness of the different motivational profiles and the need thwarting factors for medical specialists provides hospital boards and other stakeholders with insight into creating an optimal work environment. Sustaining medical specialists...
motivation is likely to promote a culture and environment of optimal performance and engagement in CPD. Furthermore, tailored CPD pathways should be created for and with medical specialists. In this way specialists can decide themselves whether and how to fulfil their individual motivational needs for work and CPD. Additionally the CPD pathways should offer diverse learning formats that support autonomy, competence and relatedness, which enables specialists to map their own individual path for CPD which is in alignment with their needs.
#SC1.1 Can we measure how trainees learn non-technical skills in surgery? Developing a validated assessment tool (8434)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:00 to 10:15

**AUTHOR(S):**  
Joshua Whittaker, Dudley Group of Hospitals NHS Trust, Worcestershire, UK*

**ABSTRACT:**

**Background:** Non-technical skills (NTS) are metacognitive abilities employed by professionals in high demand occupations to manage human factors and avoid error. Multiple systems exist to rate NTS ability of surgeons, but no validated tools exist to examine the training methods for NTS.

**Summary of Work:** A mixed method approach was taken to generate and develop a measure of NTS training in surgery. Conceptual theory was based in social cognitive theory (particularly cognitive apprenticeship), situated and transformative learning, and communities of practice. Items underwent iterative content and construct validation using a Delphi survey of trainers and cognitive interviewing of trainees. A pilot survey was tested in surgical trainees (CT1-ST8) in the East Midlands, United Kingdom, between June and August 2019. Results were analysed using Statistical Package for Social Sciences (SPSS). Ethical approval was granted by the University of Birmingham, School of Education.

**Summary of Results:** 63 surgical trainees from 6 training programmes completed the pilot. Overall response rate was 82.1%. Data was collected on 102 items. Item completion ranged from 90.4-99.8%. There was a positive correlation between learning environment and learning activity scores ($R^2$ 0.454-0.569). Mean theatre training score was 56.3 (95% CI 53.2-59.4), on-call 56.2 (95% CI 52.9-59.4) and clinic 49.9 (95% CI 45.9-53.9) (maximum score 84). There was moderate inter-scale correlations between theatre and on-call items (0.588; $p<0.01$). Both had non-significant correlations to clinic items (0.160). Clinic training was strongly correlated to coaching and articulation training methods (0.746 and 0.724 respectively; $p<0.01$). Modelling had the greatest correlation to on-call training (0.691; $p<0.01$).

**Discussion and Conclusions:** There appears to be good predictive validity between learning environment and learning activities, meaning that training with a favourable learning environment will generally provide trainees with activities to develop NTS. Learning activities within the clinic environment appear to be less recognised than the theatre or on-call environments, but this is non-significant in this sample size. Certain cognitive apprenticeship methods appear to be used more in certain training settings. For example, coaching and articulation are more associated with clinic training.

**Take-home Messages:** Although significant refinement and further validation is required, it does appear that this assessment tool can detect variations in training methods in NTS in surgery.
#SC1: SC - Surgery Education 1

#SC1.2 Are we preparing New Zealand general surgery trainees for their role as clinical leaders? (8634)

Date of Presentation: 29 August 2021  
Time of Presentation: 10:15 to 10:30

AUTHOR(S):  
Tracey Barnes, Southern DHB/University of Otago, New Zealand*  
Sarah Rennie, University of Otago, New Zealand

ABSTRACT:  
Background: Leadership is the responsibility of every person who works within healthcare. However, there are no established leadership development programs aimed at all surgical trainees or defined leadership curricula within surgical training programs.  
Summary of Work: The aim of the current research was to identify clinical leadership behaviours New Zealand General Surgery trainees are developing. New Zealand General Surgery trainees were sent an online survey comprising the Clinical Leadership Survey and additional free-text questions. Data was analysed using descriptive statistics, simple linear regression and general thematic analysis.  
Summary of Results: Seventy-two trainees were invited to participate with 29 responses. Trainees agreed they were leaders and reported demonstrating clinical leadership behaviours. Both junior and senior surgical trainees regularly used transformational clinical leadership behaviours in clinical practice (62/75 vs 64/75, p=0.150). There was a significant increase in leadership behaviours with age (p < 0.001) and higher qualification (p=0.002) but no difference between genders nor between those with or without self-perceived leadership experience. Three clinical leadership themes emerged from the analysis of the qualitative data: leadership responsibilities, leading from within a team and the leadership learning environment.  
Discussion and Conclusions: Surgical trainees believe leadership is an everyday core skill and part of their role. Leadership is important for trainees trying to create collaborative teams and improve patient outcomes. Despite these beliefs our results suggest leadership behaviour does not develop over training, supporting the theory these behaviours are developed cumulatively through life experience and not necessarily the clinical workplace. Only a quarter of participants reported receiving leadership training, despite half completing a professional skills course or higher degree. This suggests one-off interventions are of limited value and the leadership curriculum is not transparent to trainees.  
Take-home Messages: • New Zealand surgical trainees believe they are leaders and use leadership behaviours but these leadership behaviours and their use do not increase during surgical training. • Older New Zealand surgical trainees and those with higher qualifications demonstrate more leadership behaviours regardless of training level. • Leadership skills need to be clearly defined for surgical trainees and longitudinal development opportunities provided to support skill accumulation throughout surgical training programs.
ABSTRACT:
Background: With increasing challenges in surgical training, simulation has been hypothesised to enhance progression along the initial phase of the surgical learning curve. SIMULATE aims to assess whether supplementary simulation training is superior to the current standard of exclusive OR-based learning in helping residents reach a level of proficiency sooner.

Summary of Work: This international, multicentre randomised controlled trial recruited 94 urology residents, with 0-10 procedural experience and no prior exposure to simulation in ureterorenoscopy, selected as index procedure. Participants were randomised to simulation or conventional operating room training, as is current standard globally, and followed for 25 procedures or over 18 months. Training sessions were conducted for the simulation arm, utilising an expert-developed multi-modality training curriculum. The primary outcome was the number of procedures required to achieve proficiency, defined as achieving a score of ≥28 on an Objective Structured Assessment of Technical Skill (OSATS) assessment scale, on 3 consecutive operations, without complications. Secondary outcomes included number of surgical complications and stone-free status in each arm. All participants were followed up for 25 procedures or over 18 months.

Summary of Results: A total of 1140 cases were performed by 65 participants where proficiency was achieved in 66% of simulation (n=21/32) and 55% of conventional (n=18/33) participants (OR 1.59 [95% CI 0.59-4.33]) over a mean of 9.6 and 10.9 procedures (HR: 1.41 [95% CI 0.72 -2.75]). More participants reached proficiency in the simulation arm in flexible ureterorenoscopy (OR 3.33 [95% CI 1.09-10.24]), requiring fewer number of procedures (HR 0.89 [95% CI 0.39-2.02]). Significant differences were observed in overall comparison of OSATS scores between groups (27.3 vs 25.9; p<0.0001), with fewer total (15 vs 37) and grade ≥3 Clavien-Dindo complications (3 vs 9 ureteric injuries) in the simulation group.

Discussion and Conclusions: Simulation-based training demonstrated higher overall proficiency scores than residents conventionally trained. Fewer procedures were required to achieve proficiency in the complex form of the index procedure with fewer serious complications overall.

Take-home Messages: This study investigated the effect of simulation training in junior surgeons and found that it may improve performance in real operating and reduce surgical complications for complex procedures.
Date of Presentation: 29 August 2021
Time of Presentation: 10:45 to 11:00

AUTHOR(S):
Adarsh Shah, University of Aberdeen, UK*
Kim Walker, University of Aberdeen, U.K.
Lorraine Hawick, University of Aberdeen, U.K.
Kenneth G Walker, NHS Education for Scotland, U.K.
Jennifer Cleland, Medical Education Research and Scholarship Unit (MERSU), LKC School of Medicine, Singapore

ABSTRACT:
Background: Much has been written about entrustable professional activities (EPAs), or trusting individuals to carry out tasks as they progress through training. However, trust in its more everyday meaning is also a key determinant of the trainee-trainer relationship; a relationship which can positively or negatively impact trainees experience of the specialty. Trust in this respect is influenced by trainers level of risk aversion and trainees motivation.

Summary of Work: This study explores how trainee-trainer relationships impact on U.K. core surgical trainees (CSTs) experiences during the Improving Surgical Training (IST) curricular reform. Data were obtained from semi-structured qualitative interviews with CSTs across Scotland. Data were analysed thematically then through the conceptual lens of game theory, a way of examining the strategic interaction between two or more interdependent players in a situation containing set rules and outcomes.

Summary of Results: Forty-six trainees participated. Trainees and trainers regularly interacting in clinical activities demonstrated growing levels of trust, aided by: specialty rotations of 6 months plus; structured weekly clinical activities and direct consultant supervision; clear communication of expectation and needs; regular progress checks; reciprocity of efforts, and meaningful and timely feedback. Cooperative relationships led to individual fulfilment, growth, and trainee autonomy. Conversely, absence of the aforementioned factors as well as temporal and/or geographical distance between trainee-trainer and lack of interest and enthusiasm from either party hindered development of trust. The level of trust in the trainee-trainer relationship determined the quality and time allocated for feedback by trainers when completing workplace-based assessments.

Discussion and Conclusions: Cohesive trainee-trainer relationships demonstrated cooperative equilibrium; both trainees and trainers met each others expectations and this positively impacted on trainees experiences. On the contrary, players in relationships deficient in trust achieved the minimum to ensure trainee progression. Further research is needed to explore trainers views of the trainee-trainer interaction.

Take-home Messages: The level of trust in a trainee-trainer relationship significant impacts on surgical trainees experiences of training. Curriculum design which acknowledges factors which foster a cooperative trainee-trainer relationship may be beneficial.
You can’t become who you don’t see: The impact of speed-mentoring on female medical students perceptions of barriers facing women in surgery (8228)

Date of Presentation: 29 August 2021
Time of Presentation: 11:00 to 11:15

AUTHOR(S):
Sonam Patel, University College London, UK*
Maria Georgi, University College London, UK
Khimi Karavadra, University College London, UK

ABSTRACT:

Background: Mentoring relationships are critically important in the professional and personal development of a surgeon; a novel method of establishing these relationships is speed mentoring. While the reasons accounting for the low uptake of women into surgery is unknown, seeing same-gender role models have proven to be instrumental in the early careers of aspiring surgeons. This study examines the impact of speed-mentoring on female medical students perceptions of barriers facing women in surgery.

Summary of Work: Mentees were randomly assigned into groups of 1 or 2 and were paired with a female surgeon. Each mentor-mentee group interacted for 8 minutes for a total of 12 sessions. Mentees completed the same questionnaire before and after the session.

Summary of Results: There were 104 female respondents. Prior to being mentored, 40% agreed that choosing to have a family will negatively impact a woman’s surgical career progression, afterwards, this was reduced to 21% (p < 0.0001). A significant change was also observed in women who believed that an old boys club attitude exists across surgical specialties (p < 0.0001). No significant change was observed in the percentage of mentees who agreed that it is more difficult for a woman to progress in her surgical career than it is for a man. Mentees maintained the belief that for a woman to succeed in a surgical career, she has to have a strong personality.

Discussion and Conclusions: Significant changes in mentees perceptions of family life and surgical work environment were observed. Speed-mentoring is an innovative technique which can be used to address the misconceptions young women have about a career in surgery. It can be an effective tool employed by surgical organisations to facilitate mentor-mentee relationships and encourage uptake into the speciality.

Take-home Messages: Mentorship from same-gender role models is influential for women interested in pursuing a career in surgery. Speed mentoring is an effective and efficient method that connects female medical students with surgical professionals. Conducting a speed mentoring program significantly changed female medical students perceptions and misconceptions of women in surgery and has the potential to encourage uptake into surgery.
**ABSTRACT:**

**Background:** All surgical training programmes in the UK have an approved curriculum which sets out the framework and syllabus for surgical training. Many educational programmes aim to supplement clinical experience and knowledge gained with formal teaching based on the topics of the syllabus. When designing a new departmental local teaching programme, to complement a formal regional teaching programme as well as an increase in online learning due to COVID-19, we sought to determine the learners’ unknown learning needs - those that neither the learner nor the educator were aware of as described by the Johari window.

**Summary of Work:** A survey was circulated to the learners to establish learning styles, known areas of knowledge gaps and identify unknown learning needs. The latter was done by asking learners to identify topics relating to challenging cases they had encountered.

**Summary of Results:** In total, there were 18 respondents (51.4% response rate). More junior members of the team preferred simulation and case-based discussions whilst senior trainees preferred small group teaching and case-based discussions. The topics identified as known learning needs were different to those identified when learners were asked to consider challenging cases - their unknown learning needs.

**Discussion and Conclusions:** For the individual, unknown learning needs can be identified through the use of workplace-based assessments and OSCEs. We sought to determine the unknown learning needs of a group through the use of survey to design a teaching programme. Learners will typically ask for more teaching in areas they do not get clinical exposure to or more complex concepts, which was demonstrated in our study. The areas identified as unknown learning needs were related to those cases encountered on a more regular basis. This highlighted the need to formalise knowledge relating to these topics and provide opportunities for discussion in a more formal educational setting. Therefore, as well as including these topics in the programme, we have a Trainee Cases Clinic where learners can present cases where they had difficulties or further questions.

**Take-home Messages:** To ensure a training programme is fully comprehensive and tailored to the needs of the learners, unknown learning needs should be explored.
Growing medical educators in the Pacific. Are workshops enough to change educational practice? (8796)

Date of Presentation: 29 August 2021
Time of Presentation: 10:00 to 10:15

AUTHOR(S):
Sinead Kado, University of Western Australia, Australia*
Iris Lindemann, Flinders University, Australia
Gabrielle Brand, Monash University, Australia

ABSTRACT:

Background: A growing need to support medical education in the Pacific resulted in a series of five-day medical education workshops. We pondered: How do Pacific clinicians translate knowledge and skills gained to their educational practice and what support do they need in their remote low-resource settings? Current medical education literature also advocates for exploration of the translation into practice phenomenon in different educational contexts to further contemporary understandings. Therefore, a social constructivist based, qualitative case study was conducted exploring this phenomenon to inform faculty development in remote low-resource settings.

Summary of Work: An explanatory (how change occurred) and instrumental (informing best practice) qualitative case study explored each clinicians unique learning journey. Nine clinicians were recruited through purposive sampling. We collected data through reflective journals, individual interviews, review of written lesson plans and video recordings of teaching sessions over four months. Interviews were transcribed verbatim and all data sets were analysed using Braun and Clarkes thematic analysis. Each case was analysed individually before searching for common themes.

Summary of Results: Six shared themes were identified: 1) Perception of the workshop; 2) Evolving teaching philosophy; 3) Changing practice; 4) Teachers perception of responses from the students; 5) Inhibitors to change; and 6) Enablers of change.

Discussion and Conclusions: Our study results were supported by the international literature on faculty development, including the importance of considering clinicians prior educational experiences, cultural organisational influences, communities of practice, and enablers and barriers to changing educational practice when designing faculty development. However, clinicians in remote low-resource settings, like the Pacific, also require contextual support through the provision of relevant flexible learning, culturally sensitive feedback, and promoting reflective practice to facilitate sustainable educational change. Workshops can initiate clinicians educational journey but ongoing support of faculty development is required in the Pacific. Therefore, we recommend that established medical education units assist through sustained collaboration to develop culturally and contextually situated flexible education programs that promote reflection and communities of practice, whilst also providing culturally acceptable and valuable feedback.

Take-home Messages: Workshops begin the educational change journey, but the question still remains: How can we better collaborate to support medical education development in remote low-resource settings?
How Critical Care Educators in Australia and New Zealand cultivated a virtual Community of Practice (8751)

Date of Presentation: 29 August 2021
Time of Presentation: 10:15 to 10:30

AUTHOR(S):
Manisa Ghani, Australia and New Zealand Clinician Educator Network (ANZCEN), Australia*
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Deb Massey, Australia and New Zealand Clinician Educator Network (ANZCEN), Australia

ABSTRACT:
Background: In Australia and New Zealand critical care, clinicians with interest in education are rarely formally educated in teaching and learning strategies. The Australian and New Zealand Clinician Educator Network (ANZCEN), a network of inter-professional critical care educators, was formed in 2017 with the aim of supporting critical care clinicians with an interest in education. The group initiated a number of activities, one of which was a year long programme called the ANZCEN Clinician Educator Incubator, a faculty development programme based on social learning theory, aiming to develop members scholarly teaching practice in addition to cultivating a virtual Community of Practice (vCoP).

Summary of Work: The Incubator was inspired by a year-long digital development programme for Emergency Physician Educators called the ALiEM Faculty Incubator. This North American programme was adapted for the Australian and New Zealand context, to cater for interprofessional groups (medical, nursing, allied health) and multiple critical care disciplines (adult and paediatric Intensive Care, Emergency, Retrieval and others involved in the care of critically ill patients). The programme was designed to promote the development of Clinician Educators and to cultivate vCoP. We are currently at the end of our first year, with the next iteration of the programme underway.

Summary of Results: We started with 72 programme participants (volunteer faculty members and Incubatees) which include clinicians in medical, nursing, allied health; and academics. There were approximately 10% withdrawal from the programme. We aim to undertake a formal evaluation of the program in April-May 2021 and disseminate the results of this evaluation.

Discussion and Conclusions: The discussion follows the 3-Ps model: Presage, outlines the context of learning and the people involved; Process, describes the process and approach to learning through, and forming, a vCoP; and Product, discusses the intended outcomes of the process and learning interventions, and the challenges.

Take-home Messages: Three key areas of learning from our initial evaluation: 1) Creating, developing and implementing the incubator project required distributed leadership, commitment and generosity from everyone involved, 2) Paying attention to value creation, positive and negative, early and regularly allows us to reframe and rethink our assumptions, and 3) There is a need to be process oriented not outcome driven.
ABSTRACT:
Background: The majority of the faculty development (FD) activities in Taiwan’s medical schools are held in the form of classroom-based lectures or workshops. We applied tutor shadowing for novice tutors of problem-based learning (PBL) in addition to the conventional FD course.

Summary of Work: The facilitator questionnaire used in this study included thirty-two items rated on 5-point Likert scale. Each of the items was loaded onto four key tutoring facilitation competencies, namely (i) Facilitation skills, (ii) Programme/curriculum knowledge, (iii) Personal qualities, and (iv) Subject-matter expertise. First, we performed content validation and exploratory factor analysis (EFA) of the questionnaire with 85 novice PBL tutors. To evaluate the effectiveness of tutor shadowing training, a total of 76 novice PBL tutors completed the questionnaire with self-rated confidence before (pretest) the tutor shadowing activities. After an FD workshop and tutor shadowing in PBL activities for two times, the participants completed the posttest with the same questionnaire.

Summary of Results: The content validity of the questionnaire was assessed by seven specialists in medical education. The item content validity index (I-CVI) ranged from 0.86 to 1, and the scale-CVI (S-CVI) was 0.95. To evaluate the construct validity, an EFA with a varimax rotation was performed. Finally, 24 items with significant loadings greater than 0.5 were remained and grouped into three factors: student contact, teaching expertise, and medical expertise. The Cronbach’s α coefficients for three factors were 0.95, 0.89 and 0.91, respectively. The self-rated confidence improved significantly after tutor shadowing across the three factors with pretest and posttest values of 3.8±0.6 vs. 4.2±0.5, p<0.001 for student contact, 3.9±0.6 vs. 4.2±0.5, p<0.001 for teaching expertise, and 4.0±0.5 vs. 4.3±0.5, p<0.001 for medical expertise, respectively. The pretest and posttest scores did not differ among the tutors gender, teaching grade, and specialty background.

Discussion and Conclusions: Tutor shadowing aids in fostering a successful PBL tutor. Novice PBL tutors could use this instrument with 24 items in 3 groups to measure the level of self-rated confidence after tutor shadowing.

Take-home Messages: Novice PBL tutors benefit from FD incorporating tutor shadowing regarding the 3 key domains of tutoring competencies.
ABSTRACT:
Background: Feedback discussions are important in health professions education. Contemporary research, informed by social-constructivist theory, suggests principles for interactive learning conversations but it is not clear how to translate these ideas into practice.
Summary of Work: The Feedback Quality Instrument (FQI) was developed for educators, to clarify how feedback discussions in clinical practice could promote learner improvement. Using an extensive literature review and Delphi process, we crafted a set of key observable educator behaviours. The research described here focused on analysing and refining this provisional instrument. Videos of authentic feedback discussions in clinical practice were collected. Raters used the provisional instrument to analyse the videos. This enabled usability testing and psychometric analysis involving multi-faceted Rasch (MFRA) and exploratory factor analysis (EFA). Qualitative analysis of video transcripts was conducted in under-researched areas, psychological safety and evaluative judgement, to assist instrument revisions. The FQI was refined based on usability testing, psychometric testing and qualitative research.
Summary of Results: Thirty-six feedback videos involved diverse educator-learner pairs across medicine (27), nursing (5) and physiotherapy (4). Video analysis generated 174 data sets. MFRA indicated reasonable coverage across the feedback proficiency range, and highlighted items and one rating category for review. EFA revealed item clusters indicating key concepts (domains) in quality feedback, and highlighted items for review. Following revisions, the FQI contained 25 items across five domains: set the scene, analyse performance, plan improvements, foster learner agency, and foster psychological safety.
Discussion and Conclusions: The FQI, ready-for-use, can guide and analyse educators contributions during feedback discussions. Empirically-informed items clarify how educators could support learners to reveal difficulties, ask questions and refine ideas, with the aim of improving learning strategies and performance so learners can enhance their understanding of their work, the required standards and instigate improvements.
Take-home Messages: The FQI contains explicit descriptions of practical ways for educators to collaborate with learners and foster quality, learner-centred feedback discussions. It offers future opportunities to analyse the influence of educator behaviours on learner outcomes.
ABSTRACT:
Background: Back in March 2017, a group of faculty members in the First Affiliated Hospital of Sun Yat-sen University (FAH-SYSU) deeply involved in and passionate about clinical teaching decided to form an interest group called the Medical Teacher Club and began to meet on a regular basis and discuss various topics in medical education with the aims of advancing faculty development. The overall quality and educational impact of these events had been gradually yet substantially transformed by the partnership between FAH-SYSU and AMEE.

Summary of Work: Partnership with AMEE opened up avenues for faculty development in FAH-SYSU: (1) participation of the Essential Skills in Medical Education (ESME) course series, including ESME basic, Objective Structured Teaching Encounters (OSTE), ESME Research, ESME Assessment, ESME Clinical Teaching, ESME Simulation, etc.; (2) exposure to various resources of AMEE (in particular with AMEE individual membership), e.g. access to electronic versions of <Medical Teacher> and MedEdPublish, as well as scheduled webinars on a variety of subjects; (3) participation in and contributions to AMEE annual conferences; (4) a small group of dedicated clinical educators also enrolled in a Joint Masters Programme for Health Professions Education (JMHPE), with the prospect of promoting research excellence and academic scholarship in medical education.

Summary of Results: With the aforementioned faculty development measures, the Medical Teacher Club in FAH-SYSU had gone through the following transformation: (1) its content went from sharing personal experiences to presenting cases of implemented educational strategies within a conceptual framework, or miscellaneous types of completed or on-going research work; (2) its participants went from consisting primarily of physicians to a diverse group of physicians, educational management personnel, basic science teachers, and medical students; (3) its radiance went from FAH-SYSU faculty members only to colleagues from ZSOM, other affiliated hospitals, even from non-medical backgrounds and from abroad.

Discussion and Conclusions: Partnership with AMEE brought forth training in essential skills in clinical teaching, updates on recent advances in medical education and opportunities for professional development, all of which dramatically transformed a local networking event with faculty development purposes.

Take-home Messages: An international partnership substantially facilitated local faculty development. We believe these experiences are transferrable to other similar contexts.
ABSTRACT:
Background: Clinical teaching-learning based on direct observation and feedback plays an important role in medical training. Teaching-learning through bedside rounds is a cornerstone of clinical training for trainees at all levels. Bedside rounding is often carried out by peers and near-peers. We hypothesize that formal training in bedside teaching will enhance trainees’ skills and have a positive impact on patient care.
Summary of Work: The aim of this study was to evaluate the effectiveness of bedside clinical teaching-learning by peers and near peers. This was part of a resident as teacher program. The intervention consisted of a 1 hour workshop introducing bedside teaching skills to residents and students in the pediatric clerkship at Haiphong University of Medicine and Pharmacy. Participants were surveyed 2 months following the workshop.
Summary of Results: 108 6th year medical students and 31 residents participated in the workshop. Pre-post comparison indicated that the proportion of students participating in teaching-learning by bedside rounds increased from 13.9% to 64.8% (p < 0.01); the average time spent with each patient increased from <10 min up to 15-20 min (p < 0.05); the total time for rounds increased from <45 min to 75-90 min (p < 0.05). The percentage of patients receiving immediate care when going to the bedside rounds increased from 21.3% to 58.3% (p<0.01). After the workshop, residents spent more time in the room and believed that bedside rounds were more educational (54.8% compared to 83.9%, p < 0.05).
Discussion and Conclusions: Time spent with patients increased for students and residents. Further studies may investigate if patient care and experience are enhanced through this intervention. Take-home Messages: Bedside clinical teaching is potentially beneficial to learners, patients and families. Because it is a cornerstone of medical training, bedside teaching should be taught and evaluated formally and rigorously.
#SC3: SC - Student Identity Formation/Professionalism

#SC3.1 Are today’s doctors honest? A comparative analysis of a questionnaire study exploring medical students’ attitudes and reported behaviour on academic misconduct in 2000 and 2020 (7947)

Date of Presentation: 29 August 2021
Time of Presentation: 10:00 to 10:15

AUTHOR(S):
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Angela Ballantyne, University of Otago, New Zealand
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ABSTRACT:

Background: Honesty and integrity are core professional and ethical values of medical practice. This study analyses students self-reported attitudes to scenarios of academic misconduct. We compared our results to research conducted 20 years earlier to identify changes towards academic misconduct over time.

Summary of Work: The 2000 data was used as a baseline. An anonymous questionnaire was distributed to medical students at Dundee Medical School. The questionnaire included 12 scenarios from the original study, in which a fictitious student engaged in different behaviours. For each scenario, students were asked whether they felt the student was wrong and if they had done/would consider engaging in the same behaviour. Results were analysed with SPSS.

Summary of Results: In keeping with the 2000 data, the majority of students in 2020 responded most of the scenarios were wrong. Exceptions were scenarios that could be construed as involving collaboration or teamwork, with fewer students in 2020 reporting these as wrong and more engaging or considering engaging in them. In 2020 Students were more likely to report scenarios involving plagiarism as wrong (2000 22%, 2020 80% p<0.001). Similar proportions of students reported they would write Nervous system examination normal when they hadn’t done this examination, with 51% of surveyed students in 2020 and 32% in 2000 reporting they had engaged in or would consider writing Nervous system written examination normal when the physical examination has not taken place (p<0.001).

Discussion and Conclusions: Changes towards plagiarism may reflect more active education about what plagiarism constitutes and also a greater technical capacity to detect plagiarism, which may act as a deterrent. In respect to scenarios related to collaboration this may reflect a greater maturity in curricula that expects collaborative learning practices and emphasises the importance of teamwork within healthcare. It was concerning to see that some students still consider writing examination normal when they hadn’t completed physical checks.

Take-home Messages: Most reported attitudes and behaviours to academic misconduct by medical students haven’t changed over the last 20 years. On exception to this is a reduction in plagiarism. Work needs to be done to understand the motivations behind students acceptance and practice of facets of academic misconduct.
Professional identity formation is a long process with accumulation of experiences in the community of practice (7958)

Date of Presentation: 29 August 2021
Time of Presentation: 10:15 to 10:30

AUTHOR(S):
Masami Tagawa, Kagoshima University, Center for Innovation in Medical and Dental Education, Japan *

ABSTRACT:
Background: The process of becoming a professional medical doctor is known as professional identity formation (PIF), and the importance of personal maturation and socialization for PIF has been indicated. Various experiences, reflection and feedback are recommended for training health professionals, but how these experiences and interventions affect PIF remains unclear. Five PIF scales including the developing scale (DS), which evaluates personal maturation and socialization as professionals, and four others evaluating Kegans stage-specific attributes, have been developed and enable quantitative analysis of the process and related factors of PIF.

Summary of Work: Sixth-year medical students, second-year residents, and medical doctors working at Kagoshima University Hospital responded to a self-administered questionnaire composed of the PIF scales (DS and four stage specific scales) and were asked to list up to three important events and experiences that affected their present attitude as a medical doctor. Listed topics were categorized and the number of respondents in each category was compared between high and low scale score groups by Fishers exact test.

Summary of Results: A total of 405 responses from 116 sixth-year medical students, 60 second-year residents, and 211 medical doctors were analyzed. The DS score increased after graduation, and medical doctors with ≥30 years of clinical practice showed the highest scores. One hundred eighty-two respondents listed at least one important event, including clinically significant events such as emergencies, patients words, death, birth, errors, role models, and other personal experiences from adolescence to the present. A greater number of respondents in the high score group provided experiences with patient care than the low score group, and the difference was significant among medical doctors.

Discussion and Conclusions: Doctors and young trainees at higher stages of PIF listed more clinical events than lower stage groups. Rich professional experiences in the early phase of clinical training are recognized later as significant when doctors socialize and establish their professional identity. PIF is a long process that takes many years, and experiences in the community of practice might be an essential factor.

Take-home Messages: Experiences in the community of practice might influence young trainees life-long PIF.
#SC3: SC - Student Identity Formation/Professionalism

#SC3.3 Human Rights Education in Medical Education - A Global Study (9456)

Date of Presentation: 29 August 2021
Time of Presentation: 10:30 to 10:45

AUTHOR(S):
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Mariem Galaaoui, International Federation of Medical Students Associations- IFMSA, Tunisia
Bisuk Batara, International Federation of Medical Students Associations- IFMSA, Indonesia
Tomoki Kishaba, International Federation of Medical Students Associations- IFMSA, Japan

ABSTRACT:
Background: Medical students are the core of medical education and, as future health workers, their future practice impacts health outcomes especially as, in practice, clinicians are also confronted with situations and systems of human rights abuses. In addition, as health in itself is a human right, and as it also intersects with the different other rights, its crucial to educate medical students and practitioners on human rights. In response to a perceived gap in human rights education (HRE) in medical curricula globally and a lack of analyses on its impact, IFMSA started a research project aiming to explore HRE in the context of medical education and understanding its impact on healthcare services.

Summary of Work: A multiphase project was initiated in December 2020. The first phase of the project, currently in process, comprises a survey targeting medical students worldwide and shared through IFMSA official channels. The survey has been translated into the 3 most used languages in medical education worldwide (English, French and Spanish) with the aim of reaching a wider audience and more inclusive responses. The survey was made of two main sections the first aims to collect data on the prevalence of HRE syllables in medical education, the characteristics of these syllables and the awareness and perception of medical students regarding HRE.

Summary of Results: Results will be analysed in the period between February and March and will be ready for presentation at AMEE2021 in August.

Discussion and Conclusions: Human rights education of medical students and practitioners is crucial to ensure dignified, people-centered and rights-based health care. However, not enough emphasis is being placed on HRE, and holistic and comprehensive human rights education is lacking.

Take-home Messages: Medical students should be equipped with a practical understanding of human rights and the skills to actually apply an intersectional lens and a human rights-based approach in the different settings of their future daily practice. This is crucial to promote a socially just health system that underpins the right to health and other human rights.
#SC3: SC - Student Identity Formation/Professionalism

#SC3.4 Nurturing professional identity formation through early clinical exposure to non-healthcare professionals (8628)

Date of Presentation: 29 August 2021
Time of Presentation: 10:45 to 11:00

AUTHOR(S):
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Yasuko Chiba, National Defense Medical College, Japan
Megumi Yasuda, Fukushima Medical University, Japan
Maham Stanyon, Fukushima Medical University, Japan
Koji Otani, Fukushima Medical University, Japan

ABSTRACT:

Background: Early clinical exposure (ECE) programmes support professional identity formation through socialisation and interaction with role models. Non-healthcare professionals form part of the hospital working community and yet are outside the culture of medicine. Professionalism encompasses non-clinical aspects such as altruism, however the potential of non-healthcare workers as role models remains unexplored. We used text mining of student reflective assignments to explore the impact of socialisation with non-healthcare professionals during ECE on professional identity.

Summary of Work: 259 first-year medical students at Fukushima Medical University, Japan, participated in a modified ECE placement, which included socialisation with non-healthcare professionals as part of a hospital tour and ward-shadowing programme. Student semi-structured reflections on key characteristics associated with professionals encountered and free-text essays underwent hierarchical cluster analysis to extract the most-frequently-occurring words. Interrelationships between the most-frequently-occurring words were analysed to create coding rules, which were applied to extract themes and code the remaining text.

Summary of Results: Seven themes emerged: contribution of non-healthcare professionals, occupational diversity, pride, responsibility, teamwork, patient care and gratitude. We noted a shift in terms associated with professional characteristics, from knowledge/skill after orientation and patient after ward-shadowing, towards pride [in ones work] and responsibility after the hospital tour. Students mentioning the contribution of non-healthcare professionals more frequently referenced occupational diversity (p<0.001), gratitude (p<0.001) and pride [in ones work] (p<0.05). Students spoke of the altruistic dedication and sense of purpose shown by non-healthcare professionals. These students more often expressed gratitude towards non-healthcare professionals for supporting clinical work from a doctors perspective.

Discussion and Conclusions: Socialisation with non-healthcare professionals provides important insights into professionalism and working culture, which may be overshadowed in traditional ECE experiences where priorities are focused on patient care. By role modelling altruism and responsibility, non-healthcare professionals had an emotional impact on students, positively influencing professional identity formation through promoting self-conceptualisation as a doctor. We suggest this represents a transition between Kegan stages of identity development, from stage 2 to stage 3.

Take-home Messages: Meaningful interaction with non-healthcare professionals during ECE may nurture student professional identity formation and engage non-healthcare professionals as coproducers in educating future community members.
**#SC3: SC - Student Identity Formation/Professionalism**

**#SC3.5 Supporting epistemological bridge building in the wake of Covid-19: An international study of medical student pandemic professional identity development (8534)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 11:00 to 11:15

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** Covid-19 has disrupted medical education through changes in clinical placement capacity necessitating more remote consulting and online learning. Such wide-ranging changes are likely to impact medical student professional identity development, or the ways students come to think, feel and act like a physician (Merton 1957). We employed Kegans five-stage model of identity development to explore students experiences during the pandemic, and to understand its impact on medical student growth towards socially responsible, ethical and self-reflective practitioners.

**Summary of Work:** From a constructivist orientation, an international qualitative study was conducted with medical students from Imperial College London and The University of Melbourne. Between 2020-2021, six focus groups were conducted, with three to six students per group. Students were in their second year at Imperial, and third year at Melbourne. Focus groups were transcribed verbatim and analysed using inductive framework analysis. Kegans five epistemological lenses were applied as sensitising concepts in a theory informing inductive data analysis approach (Varpio et al. 2020).

**Summary of Results:** Four themes were identified: 1. Influence of others on identity development; 2. Influence of curricula on identity development; 3. Impact of Covid-19 on self-definition; and 4. Tension between protecting own and others health and responsibility to serve.

**Discussion and Conclusions:** Students experienced tension between protecting their own and others health, and responsibility to serve others. Continuation of placements, while managing risk (e.g. provision of protective equipment), could help address student concerns and encourage transition towards a more socialized lens. Loss of clinical exposure removed the external validation that socialized lens students depended upon for identity development. Fostering patient and staff relationships can help promote the necessary elements required for transitions in identity. Covid-19 also impacted student values, skills and career aspirations, demonstrating the pandemics impact on development of a self-authoring lens. This has important ramifications, with students valuing continuity, advocacy and public health competency within future careers.

**Take-home Messages:** Global medical education needs to manage potential future disruptions to clinical exposure and the trend towards remote care by supporting students to build epistemological bridges between instrumental and socialized world views. Formal curricula provisions which highlight how students can work towards self-authored lenses could also aid identity.
ABSTRACT:
Background: Professional identity plays a crucial role in the transition from medical student to doctor, which might be affected by social and demographic factors. The COVID-19 has largely changed the social environment that medical students face all over the world. Healthcare providers have been confronted with enormous challenges that they have not been faced before. In spite of the high risk of being infected, they still work non-stop to treat patients. The resulting psychosocial and mental concerns might impair medical students professional identity. This study aims to provide empirical evidence on whether COVID-19 has shifted medical students professional identity.

Summary of Work: Our dataset was derived from the China Medical Students Survey conducted in 2019 and 2020. We assumed that the professional identity of medical students would not have changed significantly without COVID-19. Besides, the two years of data were comparable because of similar sampling methods. In addition to students demographic features, the data contains a professional identity scale consisting of 9 items and the Cronbachs alpha of the scale is 0.91. Descriptive statistics, t-tests and OLS regression were used to compare medical students professional identity before and after COVID-19.

Summary of Results: There were 9,598 and 9,049 medical graduates in 2019 and 2020, respectively. Using simple mean comparison, we found higher score of professional identity in 2020 than in 2019 (Mean=34.96±6.11 vs. 34.79±6.85, p=0.068). The OLS regression showed that students in 2020 on average had 0.27 points higher in the professional identity measure than students in 2019, holding all else constant (t=2.68, p=0.008).

Discussion and Conclusions: Although medical students have been perceiving high risk of medical profession during COVID-19, their professional identity remain at a relatively higher level in China. The possible reason is that the altruistic act among health professionals set an example for students and increase their prosocial identity motivations.

Take-home Messages: Professional identity is a key foundation for professionalism. Multiple factors within and outside of the educational system affect the formation of a students professional identity, such as role modeling and healthcare environment. Medical educators should understand the nature of professional identity and determine where they can intervene in the process of identity formation.
Background: Due to the Covid-19 pandemic and associated public health measures, a rapid transition from in-person to virtual care has occurred across the Canadian healthcare system. Virtual care is any form of healthcare occurring remotely between providers and patients, including online video chat, telephone consultation, text messaging, or email. Patient advisors provide healthcare related feedback with the goal of maintaining a patient-centred approach. This study explored patients and patient advisors experiences with virtual care across Canada.

Summary of Work: We adopted a qualitative approach whereby we interviewed 20 patient advisors across Canada. Semi-structured interviews conducted by a Health Education Researcher were used to delve into participants experiences with virtual care. The interviews were audio-recorded, transcribed verbatim, and analyzed thematically. Data collection stopped once thematic saturation was reached.

Summary of Results: Snowball sampling was used to recruit participants from five Canadian provinces. Many participants also had experienced virtual care encounters as patients and thus drew from these experiences. Three themes were identified 1) Qualities of effective healthcare, 2) Experiences with virtual care, and 3) Comparison between care modalities (eg., video-conferencing, telephone, in-person). Participants reported that high-quality healthcare included building relationships, considering the patient as a whole, ongoing communication, and showing compassion. Generally, participants described positive experiences, including greater efficiency, increased accessibility, and that virtual care was less stressful and more patient-centered. Participants comparing virtual care with in-person care reported that time, scheduling, and the content of interactions were similar across both modalities. However, participants also shared the perception that certain modalities were more appropriate for specific clinical encounters. For example using virtual care for prescription renewals and ongoing follow-up appointments. Participants also recommended education for both patients and providers to improve virtual care delivery.

Discussion and Conclusions: Participants reported experiences of virtual care encounters were relatively positive. Future work could focus on providing training and resources for providers and patients to help them navigate virtual care encounters.

Take-home Messages: The global pandemic has catalyzed the uptake of virtual care. While initial experiences with this format are positive, there is need for ongoing stakeholder engagement and evaluation to improve patient and caregiver experiences with virtual care.
#SC4: SC - Clinical Teaching & the COVID-19 Pandemic 1

#SC4.2 Resto Training Kit (RTK) Remote training for dental undergraduate students (9244)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:15 to 10:30

**AUTHOR(S):**  
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Michael Wendler Ernst, Universidad de Concepción, Chile  
Fabian Acuña Silva, Universidad de Concepción, Chile

**ABSTRACT:**  
**Background:** The pandemic caused by SARS-CoV-2 changed the daily activities. To date, social distancing is the main public policy to control its expansion. This scenario has deeply affected traditional educational practices, online teaching as the only alternative to keep up with programmes. However, this response was mainly able to cover theoretical contents. Dentistry is a profession which requires solid theoretical and practical background. Because of the pandemic, the latter was severely affected due to the students impossibility to attend on-site activities. Consequently, a critical gap in their clinical competences, jeopardise their future performance with patients. Therefore, new pedagogies are needed to complement online activities. The present approach analysed a Chilean dental school situation and identified from its curriculum those competencies where a practical training was crucial. Following Design-Based Research, an intervention was designed and implemented.

**Summary of Work:** The competences needed for a dentist to graduate from a dental school in Chile were analysed. Then, those not covered by online education were selected and included in an educative intervention. A specially designed restorative kit was sent to the students homes, enabling practical work without attending campus facilities. A permanent track of their progress was achieved using photography and video recording of their work. Feedback was provided synchronous and asynchronous through an online platform.

**Summary of Results:** The use of remote practical training enabled the development of the students critical competencies in the dental restorative field. The applied educative intervention was not only able to bridge the gap between theoretical concepts and their clinical application but also to lower the students anxiety. Thus, preparing them better for clinical practice once pandemic restrictions permit it.

**Discussion and Conclusions:** Practical training represents a fundamental component in the education process of a dentist. Therefore, the adequate build of these clinical competencies is a milestone in the curriculum of every dental school. The innovative approach proposed here demonstrated to be a good alternative to conventional on-site practical training. Moreover, it opens a wide spectrum of alternatives for remote clinical teaching in other fields.

**Take-home Messages:** New pedagogical strategies are needed to accomplish graduate competences. Remote training could be beneficial for practical skills in dental students.
ABSTRACT:
Background: The social restrictions resulting from fighting the COVID19 pandemic have disrupted the well-balanced clinical training of pre-clinical medical students. Traditionally, basic clinical skills training started with practice on peers and simulation patients and was completed by taking patient interviews during pre-clinical internships. Because students attendance in the hospital was restricted during the pandemic a digital clinical skills training was developed using video consultation with patients.

Summary of Work: Pre-clinical students were divided in small groups of 4 and coupled to a clinical doctor of a department of the Leiden University Medical Centre. The doctor acted as teacher and asked his patients permission to participate in educational video consultations. Students could participate online as a group in the video consultations at their individual homes. Per consultation one student interviewed the patient. Afterwards the peers and teacher provided feedback. Learning was designed to be interactive, constructive and contextual. Teaching goals were predefined by the stakeholders and based on constructive alignment principles. Teaching goals included development of clinical skills: communication, structuring of patient interview, empathy, professional attitude and clinical reasoning. Students, teachers and patients were instructed before participation by an instruction document. In addition teachers watched an instruction video and optionally attended an instruction meeting.

Summary of Results: Students impressions of the training were evaluated by an online questionnaire. Participation in the evaluation was optional: 44 of 117 students completed the questionnaire. Quantitative analysis of the questionnaire demonstrated that 80% of students scored the training as educational and useful. 35 of 44 students rated the training as technically and logistically well managed. Qualitative analysis revealed that the digital form of patient interviewing was highly valued. Improvement suggestions were mainly focused on technical issues: some patients experienced problems with computer audio or video connection, which interrupted the education.

Discussion and Conclusions: From the questionnaire we learned that the students evaluated the training as educational and useful. However improvements can be made in instructing patients in technical aspects before online participation.

Take-home Messages: Video consultation with patients is of value in training clinical skills of medical students. Patients should be trained in technical aspects before online participation.
ABSTRACT:
Background: During the COVID-19 pandemic, medical education is limited by restricted access to patients. However, heterogeneous access to clinical learning opportunities and inconsistency in teaching has long been a source of dissatisfaction amongst medical students. Mixed-reality (MR) technology may provide a solution, enabling a clinical live stream to be supplemented visually with digital information (e.g. radiographic imaging), superimposed as holograms onto the environment. We believe we are the first to describe the use of MR technology (HoloLens) to deliver a live-streamed, remote access, interactive teaching ward round for medical students.

Summary of Work: We conducted a proof-of-concept study at a London teaching hospital. Our objectives were to explore whether MR technology is feasible for the delivery of a remotely-accessed, interactive teaching ward round, acceptable to participants, and effective for interaction between students, patients and clinicians.

Summary of Results: Fifteen participants (11 students, 2 patients and 2 faculty members) provided feedback on the ward round. Students unanimously agreed that this technology was enjoyable and provided teaching that was otherwise inaccessible during the pandemic. The majority of participants gave positive feedback on the MR (holographic) content used (n=8) and agreed they could interact with and have their questions answered by the clinician (n=9). Quantitative and free text feedback from students, patients and faculty demonstrated that this is a feasible, acceptable and effective method for delivery of clinical education.

Discussion and Conclusions: We have used this technology in a novel way to transform the delivery of medical education and enable consistent access to high-quality teaching. This could be integrated across the curriculum and include remote access to specialist clinics, surgeries, and a library of bespoke MR educational resources for future generations of medical students and doctors to use on an international scale.

Take-home Messages: Our results support that MR technology is feasible, acceptable and effective for the delivery of remote access, interactive teaching ward rounds; a timely solution for the challenge of delivering clinical teaching during the pandemic, and beyond. We propose that this technology could be implemented by institutions worldwide to enable consistent and equal access to learning opportunities.
ABSTRACT:
Background: Work experience has traditionally been viewed as a crucial part of the medical school application process. However, due to the COVID-19 pandemic, there has been a significant shift in work experience requirements, and unexplained changes could cause confusion among students (1). In the UK, the Medical Schools Council (MSC) sets guidance for the undertaking of work experience. To determine how work experience requirements have changed during COVID-19, we compared the work experience requirements of UK medical schools for 2020 and 2021 entry, using MSC guidance as a framework.

Summary of Work: The MSC guidance was sourced online (2) and summarised into 4 criteria related to work experience. These included: 1) Location, 2) Length, 3) Reference of an intended learning outcome, and 4) Reference to volunteering or paid work. The criterion of location was further divided into community and non-community settings. Work experience requirements of all UK medical schools were accessed from the MSC website both in November 2019 and 2020. Statistical analysis was performed in SPSS (Version 26).

Summary of Results: Across all 39 UK medical schools, the mean number of criteria referenced for 2020 and 2021 entry significantly decreased (1.56 vs. 1.12, P=0.045, unpaired t-test). The modal criterion referenced was an intended learning outcome (2020: 56.4%, 2021: 48.7%), whilst reference of work in a community setting decreased considerably (2020: 48.7%, 2021: 15.4%). Analysis between different regions of the UK revealed no significant difference both for 2020 and 2021 entry.

Discussion and Conclusions: Our analysis reveals a significant decline in the detail of work experience requirements during COVID-19. One explanation is that fewer requirements could help facilitate alternative forms of work experience, which can overcome the restraints of the COVID-19 pandemic. Conversely, more time could be needed for medical schools to fully adapt their requirements, thereby presenting unique challenges for 2021 applicants.

Take-home Messages: Work experience requirements have become less detailed during the COVID-19 pandemic at UK medical schools. This could help facilitate a broader range of work experience or represent a time delay in the full adaptation of requirements, which may adversely affect 2021 applicants.
**ABSTRACT:**

**Background:** In-practice direct observation of clinical consultations by visiting GP assessors, known as Clinical Teaching Visits (CTVs), is an integral part of Australian General Practice Training. CTVs provide educational support to General Practitioners in Training (GPiT), allowing real-time assessment and feedback as well as identifying GPiTs who require additional assistance. From mid-March 2020, due to the COVID-19 pandemic, our face-to-face CTVs were suspended. GP Synergy required an urgent response to a complex set of circumstances to deliver excellence in medical education while ensuring the safety of assessors, patients and GPiT. We initiated innovative modes of CTV delivery utilising remote assessors, allowing GPiT education to continue. Technologies accessible in rural and metropolitan areas, and various educational strategies were utilised.

**Summary of Work:** We needed to address logistical and organisational challenges while meeting specialist college training standards and educational requirements to deliver remote-model CTVs. We were already undertaking a grant-funded research project to examine CTVs when the COVID-19 pandemic struck exploring outcome factors related to • prompting change in GPiTs clinical practice • prompting change in GPiTs education/training • feedback (from the assessor) being consistent with previous intra-practice feedback to the GPIT COVID-19 provided a unique opportunity to compare the remote CTV to more traditional face-to-face CTVs within this research project.

**Summary of Results:** The perceived utility of remote CTVs by GPiT was not statistically significantly different to face-to-face CTVs. Prompting change in education/training was significantly more likely in remote CTVs ($p=0.048$).

**Discussion and Conclusions:** Pandemic-related disruption to GP training created an urgent need for flexible approaches to CTVs. This presented major educational, organisational and logistical challenges requiring extensive cross-team collaboration. On the basis of interim statistical analyses, the effects of COVID-19 on this important aspect of GP vocational training have been minimised.

**Take-home Messages:** This experience has shown the effectiveness of remote CTVs in delivering education, assessment and feedback in Australian GP training.
#W1: Workshop 1

#W1 Anyone order an OSCE? A World Café approach to the challenges and solutions to delivering OSCEs in a pandemic and beyond (8204)

Date of Presentation: 29 August 2021
Time of Presentation: 10:00 to 11:30

PRESENTER(S):
Kirsty Jane Freeman, Duke NUS Medical School, Singapore
Claire Ann Canning, Duke NUS Medical School, Singapore

ABSTRACT:
Background: As governing bodies continue to revise restrictions to help flatten the curve, educational institutions have to undertake a rapid review of assessment practices and adapt to this ever-changing environment. This interactive workshop will explore the challenges faced by healthcare education providers when planning and delivering clinical and procedural skills examinations during a pandemic. Participants will identify solutions and develop practical strategies for delivering OSCEs in their unique contexts. The faculty have delivered six OSCEs during the current pandemic, and will draw upon their experiences as they facilitate the session.

Who Should Attend: This workshop is targeted to all involved in the planning and delivering clinical and procedural skills examinations across all healthcare disciplines.

Structure of Workshop: Applying the World Café method, this workshop will draw on participants’ experiences. To identify the challenges and barriers participants are experiencing, ‘café stations’ with large post-it notes will be positioned around the room. Each station will address a different topic area such as human resources, leveraging technology, and stakeholder engagement. In the ‘World Café’ style, participants will move around the stations in small group rounds to identify the specific challenges experienced in their own context.

In their small groups, participants will brainstorm solutions to the challenges, feeding back their ideas to the larger group. The facilitators will assist participants to develop individual strategies that can be applied following the workshop, and all challenges and solutions created by the participants during the session will be captured in a word document which can be shared with participants at the conclusion of the session. This workshop could be delivered on a virtual platform if required.

Intended Outcomes: 1. Describe the challenges that are experienced by healthcare education providers planning and delivering clinical and procedural skills examinations across the globe
2. Formulate solutions to the challenges in conducting clinical assessments, tailoring them to their local context
3. Create an international community of practice for healthcare education providers conducting OSCEs that will enable the sharing of experiences, ideas and resources.

Level: Due to the interactive, learning focused nature of this workshop all levels of learners are encouraged to attend.
Learning about and changing clinical practice: Paradigm-shifts in medical education using video-reflexive ethnography

Date of Presentation: 29 August 2021
Time of Presentation: 10:00 to 11:30

PRESENTER(S):
Aimee Charnell, Leeds Institute of Medical Education, University of Leeds, U*
Lisi Gordon, Centre for Medical Education, University of Dundee, UK
Jane Dickson, Population Health and Genomics, University of Dundee, UK
Aileen Collier, School of Nursing, University of Auckland, New Zealand

ABSTRACT:
Background: Changing healthcare demands and practices are making it increasingly difficult to support and educate those involved in delivering care. This educational support works most effectively when everyone involved is enabled to participate and is actively engaged. Video-reflexive ethnography (VRE), first described by Carroll et al. (2008), is a methodology aiming to surpass existing practice change approaches by enhancing participants understanding of their clinical practices and working environments. VRE engages participants in the development of bottom-up improvement solutions. VRE involves the production of video footage with front-line clinicians, allowing reflexive conversations about actions usually taken as given in everyday clinical practice (Iedema et al. 2019). After observing and video recording clinical activities, key moments and practices are chosen to show participants in reflexive sessions. Participants interpret and discuss these clips, considering ways to improve practice through collective noticing, which in turn provides further data (Carroll and Mesman, 2018). Central to VRE are issues of context, action, and social interaction. Making these issues visible to participants and researchers provides the opportunity for repeated scrutiny of everyday practices by those at the healthcare delivery frontline (Iedema et al. 2013; Gordon et al. 2017). VRE has been used to explore communication, patient safety, feedback, workplace learning, and leadership, across diverse healthcare settings internationally (e.g. Australia, UK, US).

Who Should Attend: This workshop is suitable for anyone with a basic understanding of qualitative research, wanting to learn more about video-reflexive ethnography.

Structure of Workshop: This highly interactive workshop aims to introduce participants to VRE by unpacking the underlying principles and practicalities of using VRE. Footage and exemplars from our research will illustrate VRE and prompt discussion.

Intended Outcomes: Participants will have the opportunity to:
1) Explore and understand VRE as a valuable participatory methodology in healthcare education research.
2) Learn about techniques for data collection and analysis, including running reflexive sessions.
3) Consider how participants may use VRE in their own workplaces or academic settings.

Level: Introductory
#W3: Workshop 3

**#W3** Team-Based Learning (TBL): a flexible and effective learning strategy for either Face-to-Face or Online Learning (7991)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:00 to 11:30

**PRESENTER(S):**  
Annette Burgess, The University of Sydney, Faculty of Medicine and Health, Sydney Medical School, Education Office, Australia  
Sandy Cook, Duke-NUS Medical School, Singapore., Singapore  
Michelle Moscova, The University of New South Wales, Australia

**ABSTRACT:**

**Background:** Public health measures due to COVID-19 forced many faculty to rapidly convert their learning strategies to an online environment. Being able to efficiently move from the typical face-to-face learning to online is critical in this uncertain environment. Team-based learning (TBL) has proven to be an adaptable learning strategy that works effectively in both the face-to-face and online environment. TBL provides large groups of students with small group learning experiences. Using a flipped classroom approach, with specific steps, TBL promotes: collaborative peer learning in large and small groups, student engagement and accountability, and provides standardisation of learning experiences across large student cohorts. The workshop facilitators are experienced in implementing and developing TBL modules (online and in person), designed to promote class discussion and critical thinking within health professional education across three universities. The purpose of this workshop is to empower attendees to explore the relative merits of TBL, provide practical strategies for how these may be applied to their own curricula, and tips on issues associated with the online environment.

**Who Should Attend:** Any individual (student, staff, faculty, deans level) involved in education and eager to learn about TBL.

**Structure of Workshop:** This interactive workshop will utilise TBL format. It will be conducted in either an online or face-to-face format, depending on the conference plans. Participants will be expected to do some pre-reading and be prepared to be actively engaged in the discussions. We will use a short video, individual test, team-test, feedback, and problem solving activities.

**Intended Outcomes:** Participants will gain an understanding of the application of TBL both in person and online. They will leave with the tools to apply best practice in the implementation of TBL, to suit the needs of their students, faculty, curriculum, and institution.

**Level:** Introductory/intermediate
#W4: Workshop 4

**#W4 Bringing EPAs digitally alive! (8471)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 10:00 to 11:30

**PRESENTER(S):**  
Brian McEllistrem, Irish College of General Practitioners, Ireland  
Aileen Barrett, Lighthouse Communications, Ireland  
Karena Hanley, Irish College of General Practitioners, Ireland

**ABSTRACT:**  
**Background:** The Irish College of General Practitioners has engaged recently in a multiyear project on workplace based assessments (WBA) (Barrett and Hanley 2020a, McEllistrem et al. 2020). Additionally, 18 Entrustable Professional Activities (EPAs) for GP training in Ireland were developed. EPAs represent a mechanism which allows faculty to make competency-based decisions on the level of supervision required by trainees (pg 157, ten Cate 2013). These 18 EPAs were hosted, with their WBAs, on an online platform. This online platform was initially voluntarily piloted, with extensive supporting documentation and promotion, with 6 of 14 GP training schemes in the Republic of Ireland between July and October of 2020. With over 200 feedback events completed to date, it was continued and expanded. The ICGP is now in consultation with the training community to plan best use of the data for training purposes at individual, training site and national level. This workshop aims to give those considering, planning or already implementing EPA development, particularly allied with online platforms, an overview of the experience, including the triumphs and pitfalls, of one training body. References Available upon request.

**Who Should Attend:** Health professions educators involved in assessment and EPA development, particularly if interested in leveraging online implementations.

**Structure of Workshop:** Presentation (15mins);  
Overview of the process to date.  
Round table discussions (60mins);  
Break out groups with particular focus areas;  
1) Implementation and management of EPAs on an online platform – what are the advantages, pitfalls, and educational goals possible?  
2) What are the training community’s experience to date?  
3) Optimising acceptability of new assessments – how is consultation best planned?  
Each group will be facilitated by a member of our team. Each group will explore one of the three questions above, with non-directive facilitation. 30 minutes is allocated for the discussions in groups, 30 minutes is allocated for the reports back to the main groups.

**Intended Outcomes:** Participants should be able to:  
Identity the main considerations for EPA implementation with WBAs, on an online platform in their own roles academically.  
Identity practical plans of action to support those in the training community when embarking on a voluntary online EPA pilot.  
**Level:** Intermediate and Advanced
#S3: Symposium 3

#S3 Defining scholarship in 21st century health professions education (7547)

Date of Presentation: 29 August 2021  
Time of Presentation: 12:00 to 13:30  

PRESENTER(S):  
Jennifer Cleland, Lee Kong Chian School of Medicine, Singapore  
Susan Jamieson, University of Glasgow, UK  
Susan van Schalkwyk, University of Stellenbosch, South Africa  
Subha Ramani, Harvard University, USA  
Rashmi Kusurkar, VU University, The Netherlands  
Tim Wilkinson, Otago University, New Zealand  

Summary: Definitions of scholarship vary across contexts and thus so do the values, understandings, processes and priorities considered representative of scholarship. For example, theoretical work may be privileged over applied work, writing research papers over service. In addition, narrow definitions of scholarship – for example, as the production of educational research – constrain policies and practices, limit exploration and innovation, and exclude much of value and importance in respect to contributions to students, institutions, and communities of practice.

As health professions educators, we are tasked with engaging with scholarship in ways which help us, our colleagues and future colleagues develop to their full potential. To do so requires constant scrutiny of how we educate and how we can educate better. To enable learners depends on enabling educators. We do so by providing a discipline-specific definition of scholarship which extends Boyer’s classic model into the 21st century by positioning scholarship as a process, an iterative journey which depends on constant, critical professional reflection and engagement in growth opportunities. The presenters will share their ideas of colleagues can develop as individuals within HPE and challenge remaining biases and assumptions about scholarship which may still exist in educational systems and structures.

What participants will gain: Participants of this symposium will benefit from learning to conceptualise scholarship as progressive and iterative, and to consider how they can engage with and support scholarship in their local contexts.

Who should participate: Anyone with an interest in scholarship in HPE.
#S4: Symposium 4

#S4 Revalidation of Knowledge and Skills of Surgeons in Practice (7871)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:00 to 13:30

**PRESENTER(S):**  
Ajit Sachdeva, American College of Surgeons, USA (Moderator)  
Julian Smith, Monash University, Australia  
Ian Finlay, Glasgow Royal Infirmary, Glasgow, UK  
Helen MacRae, Dept. of Surgery, Mount Sinai Hospital/University of Toronto, Canada  
James Garden, University of Edinburgh, UK (Invited Discussant)

**Summary:** Following completion of surgical training, surgeons enter professional practice that can span a period of several decades during which myriad changes impact their activities. Adoption of new models of health care, development of new procedures and technologies, advancement of the science of surgical practice, and evolution in practice patterns of individual surgeons continue to exert profound influences on the professional activities of surgeons. These require concrete steps to revalidate the knowledge and skills of surgeons in practice in an ongoing fashion and to offer surgeons opportunities to acquire new knowledge and skills, refine existing skills, and continue to remain on the cutting-edge of surgical practice. A personalized approach to training and retraining of surgeons is needed and this should include interventions to address specific needs to ensure delivery of high-quality surgical care. This Symposium will define the key elements of revalidation of knowledge and skills of surgeons in practice and describe strategies to support continuous lifelong learning. Speakers from across the globe will share experiences from various countries and highlight the advances that have been made in regard to revalidation of the knowledge and skills of surgeons in practice. Practical, take-home messages will help attendees implement new approaches at their home institutions and should foster collaboration among surgical educators from different countries.
ABSTRACT:
Introduction: Contemporary healthcare programmes often provide international learning experiences, such as study exchange or placement abroad. International clinical placements may change not only students’ professional outlook, but also positively affect personal behaviours like proactivity and self-confidence (Atherley et al. 2019). Evidence on workplace learning indicates that recognizing and creating opportunities for active participation in patient-related care and team activities is crucial to stimulate students’ learning-by-doing (Dornan et al. 2014). At the start of clinical placements students are likely to experience four different phases when looking for ways to learn in this new environment (Wijbenga et al. 2020). In international placements, initiation of student participation may be hindered by differences in professional practice, and thereby limit workplace learning. This study explores how healthcare students overcome differences in professional practice during initiation of international placements.

Methods: Twelve first-year physiotherapy students at the European School of Physiotherapy in Amsterdam, The Netherlands, recorded individual audio diaries during the first month of international clinical placement. Audio entries followed instructions on a prompt sheet, meant to invite students to freely share their personal experiences about working activities, collaboration and learning opportunities encountered in the workplace. Recordings were transcribed, anonymised and analysed following a template analysis approach. Team discussions focused on thematic interpretation of results.

Results: Students described tackling differences in professional practice via ongoing negotiations of practice between them, local professionals, and peers. Three themes were identified at the focus of students’ orientation and adjustment efforts: professional practice, educational context, and individual approaches to learning. The first theme describes how professional practice varied between host and home countries. After being introduced to the clinical environment and team, all students were quick to notice differences to what they had learned during preclinical training. Differences observed related to organization and quality of care, professional approaches or guidelines for practice, but also included team roles and responsibilities. Besides, many students were confronted with unfamiliar interventions or therapeutic modalities, such as technical applications or training equipment. The second theme indicates the important role of the supervisor and support network in students’ adjustment to the international setting of their learning environment. Building social relationships and creating dialogue within the workplace seemed crucial to open up opportunities for learning-by-doing, which increased self-confidence and mutual trust, and facilitated more autonomous practice. The third theme explains how students came to adjust their individual goals and learning strategies to differences in organizational and educational practice. In general, healthcare students’ initiation during international placements involved a cyclical process of orientation and adjustment, supported by active participation, team discussions and self-regulated learning strategies.

Discussion and Conclusions: The international clinical context has allowed us to reveal a more cyclical nature of orientation and adjustment, building upon the Four-phases model of initiation of clinical placements that described orientation and adjustment as separate phases (Wijbenga et al. 2020). This audio diary study among first year physiotherapy students reflects how ongoing orientation and
adjustment allows students to increasingly contribute to patient care, by means of negotiated professional, educational and individual practices.

Initiation of student participation during international placements can be supported by establishing a continuous dialogue between student and healthcare professionals. This dialogue helps align mutual expectations regarding scope of practice, and increase understanding of professional and educational practices. Better understanding, in turn, creates trust and favours meaningful students’ contribution to practice and patient care.

#RP2: Research Paper - Studying experiences over time

##RP2.2 A phenomenology of COVID-19 and medical education: Experiences of grief, relief, and opportunity (7716)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:20 to 12:40

**AUTHOR(S):**  
Victoria Luong, Dalhousie University, Canada*  
Kori LaDonna, University of Ottawa, Canada  
Bryce Bogie, University of Ottawa, Canada  
Lindsay Cowley, University of Ottawa, Canada  
Jennifer Klasen, University Hospital Basel, Switzerland  
Anna MacLeod, Dalhousie University, Canada  
Sarah Burm, Dalhousie University, Canada

**ABSTRACT:**

**Introduction:** COVID-19 has disrupted the international medical education community in unprecedented ways, potentially worsening problems like burnout and work-life imbalance that we have long been struggling to solve. At the same time, abrupt restrictions and lockdowns have forced us to integrate our work and personal lives in unprecedented ways—permitting real-world opportunities to strategize how long-standing calls for wellness and better work-life integration might be realized once the pandemic is over.

Medical education consists of a diverse community of scholars, yet much of the research examining the impact of COVID-19 focuses on medical learning and practice; we know little about the lived experiences of the broader community. This study explores how members of the international medical education community are adapting—and, in some cases, re-conceptualizing—their personal and professional roles during the continued COVID-19 crisis.

**Methods:** Between April and October 2020, we conducted 26 (16F, 10M) semi-structured interviews with medical trainees (7), physicians (8), graduate students (3) and PhD scientists (8) working in medical education in Canada, the United States, and Switzerland. Data collection and analysis occurred iteratively. In congruence with a phenomenological approach, each transcript was first read in full and summarized to delineate an overarching story of the data; next, codes and themes were identified and refined over a series of team meetings.

**Results:** Participants described significant changes to the nature of their work, such as working remotely, greater caregiving responsibilities, postponed electives and clinical work, and slowed research and committee responsibilities. Participants experienced a wide spectrum of emotions in response to both the pandemic and the changing medical education landscape.

For some, the abrupt shift to working from home, and subsequent loss of physical interaction and camaraderie, was experienced as grief. Participants grieved their sense of normalcy, structure, and control. Women with caregiving responsibilities, trainees, and early-career researchers grieved their (relative) sense of security: the changes brought on by COVID-19 were experienced as an inexhaustible threat to their loved ones, their productivity, the quality of their education, and their future opportunities for employment. At other times, however, some participants experienced relief. Cancellations meant that many of those who felt overworked were forced to slow down and focus on their personal relationships and well-being; some felt a strong (though often temporary) sense of empathy from their colleagues about their inability to be as productive as they once were. In turn, several participants experienced COVID-19 as an opportunity to reflect on the fabric of our institutions and to reimagine the way they work. For instance, participants expressed enthusiasm for changes that could potentially impact patient care and education (e.g., integrating virtual technologies), work structure (e.g., re-conceptualizing the division of the work week), and work-life balance (e.g., prioritizing mental health and transforming definitions of, and expectations for, productivity).

**Discussion and Conclusions:** The COVID-19 crisis has been tragic, disorienting, and often difficult to navigate. However, the disruption of the status quo it has caused could be an important catalyst for
change. COVID-19 has prompted questions about the way we were working even before the pandemic—a system driven by concerns about productivity; where cancellations and slowdowns can be both a source of grief (of our sense of certainty) and for some temporary relief (because we were overworked to begin with). It has brought to the fore the unique burdens women, trainees, and early-career researchers shoulder within our community. In this manner, COVID-19 has shed light on issues that can no longer be ignored, opening a doorway to new possibilities and opportunities previously thought inconceivable.

Conclusion: COVID-19 has the potential to incite collective, critical reflection on the way we live and work, or, more accurately, how we want to live and work. If the medical education community is to re-emerge from the pandemic stronger than when it began, it needs to consider how its current culture, structures, and policies align with the values and experiences of those living within it.
ABSTRACT:

Introduction: Uncertainty Tolerance (UT), a construct describing how individuals respond to uncertainty in their cognition, emotion and behaviour, is considered highly relevant to healthcare practice(i, ii). Prior research draws links between healthcare providers'/students' UT and healthcare related outcomes, notably impaired psychological wellbeing in both doctors and medical students(ii). Although debate continues as to whether UT is a static personality trait or modifiable state, the prevailing healthcare UT model suggests that various factors (so-called “moderators”) may impact individuals' UT(i). Despite the negative outcomes associated with lower UT, little is understood about how medical students on clinical placements experience uncertainty. To address this gap, our research question was “How do medical students, in their clinical years, experience and manage (i.e. “tolerate”) uncertainty?”

Methods: Through a social constructionist approach, we conducted a longitudinal qualitative study of medical students at an Australian medical school. Participants included students transitioning from preclinical years to clinical placements (n=23), and to practice (n=18). Data were collected across the 2020 academic year, with students completing reflective diary entries during semesters (n=229), and end of semester semi-structured interviews (n=39). Diary entries prompted students to describe and reflect on a scenario in which they felt certain, and one which they felt uncertain. Data were analysed by framework analysis, using an abductive approach based on the integrative model for UT as the theoretical lens(i) (i.e. oscillating between deductively applying the model to the data to identify uncertainty stimuli, moderators and responses, and inductively exploring UT theory within the context of medical students' experiences).

Results: Participants described a wide variety of uncertainty stimuli: Some related to clinical medicine (e.g. dilemmas of diagnosis and management where a single best approach was unclear), others extended to professional and personal uncertainties (e.g. uncertainty related to healthcare social structures, tensions between personal and professional identity, career progression, etc.). Multiple factors appeared to moderate students’ UT, including: People, past experiences, sense of purpose, personal characteristics, guiding clinical information, assessment, placement orientation and reflective learning. Interestingly, others sharing their own uncertainty was described by students as having a dominant beneficial impact on their UT. Responses were divided into those described in the moment of uncertainty, and those described upon reflection. In the moment, students described a range of responses across their cognition, emotion and behaviour from negative (e.g. helplessness, anxiety and avoidance), to positive (e.g. acceptance, interest and action); longitudinally, however, the dominant pattern across student data was negative responses in the moment. By contrast, responses on reflection were often positive, and included: Identifying learning opportunities, a sense of gratitude, and the development of resilience.

Discussion and Conclusions: Our results extend the prevailing UT model in several ways. We have improved the definitional characteristics of the UT construct, particularly in relation to moderator classifications, and responses on reflection within a clinical learner population. Importantly, many identified moderators are modifiable (e.g. placement orientation) and applicable outside of this context (e.g. sense of purpose). Together, this suggests opportunities for educational interventions for fostering students UT. Whilst our aim was to explore medical students UT on clinical placements, students identified that reflective diary engagement served to moderate their own experiences of uncertainty, and suggests that reflective practices, themselves, may serve as effective educational interventions for learners UT development. In conclusion, UT in medical students is complex and extends beyond clinical uncertainties described in
previous research. Reassuringly, this research supports UT as a modifiable state, with multiple avenues for educational intervention raised by this study.

#RP2: Research Paper - Studying experiences over time

**#RP2.4 Navigating the landscape of practice: A 4-year, longitudinal qualitative study of graduates of a Masters in Medical Education program (7744)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 13:00 to 13:20

**AUTHOR(S):**  
**Dorene Balmer, University of Pennsylvania, USA**  
**Samuel Rosenblatt, University of Pennsylvania, USA**  
**Donald Boyer, University of Pennsylvania, USA**

**ABSTRACT:**

**Introduction:** Postgraduate degree programs in medical education foster the development of communities of practice (CoP). However, these CoPs are time-limited and how graduates journey through the landscape of practice, with its multiple, overlapping CoPs, is unknown. Wenger proposes three complementary modes of identification which describe the process of navigating landscapes: engagement (being in practice); imagination (constructing an image of self); alignment (coordinating perspectives and activities). Longitudinal qualitative research (LQR) is ideal for studying processes of change, like navigating the landscape. Capturing the lived experience of graduates as it unfolds through time can inform postgraduate degree programs. In this 4-year LQR, we used Wenger’s work as analytic lens and asked, “What is the experience of navigating the landscape of practice for graduates of a Master’s program in medical education?”

**Methods:** Participants were 11/29 physicians in one cohort of a 2-year, Master’s in Medical Education Program (2 on-site sessions per semester, virtual small-group sessions between on-sites, no thesis requirement). We interviewed participants at program start (2016), midpoint (2017), graduation (2018), 1-year and 2-year post graduation (2019, 2020). We used reflective prompts to ascertain formative experiences. We followed-up on responses from prior interviews, allowing participants to narrate their unique journey through the landscape. We iteratively collected and analyzed data, creating inductive codes and organizing coded data thematically by mode and time. In line with LQR, we organized narratives from each participant into time-ordered data matrices so that our final analysis wove together theme, time and case.

**Results:** Participants consistently spoke of navigating the landscape of practice, which included but was not limited to the CoP in the Master’s program that disbanded upon graduation: “The program is part of the journey, but it doesn’t define the journey itself.” [Alignment] Initially, most spoke of alignment within the program-specific CoP as “finding my people”. Participants involved themselves with multiple CoPs through time; however, by 2 years after graduation they had focused their career and narrowed alignment in the landscape of practice. [Engagement] Participants evolved in how they engaged in medical education, moving from day-to-day connections with learners to building programs and producing scholarship. Over 4 years, they applied what they learned in the Master’s program to the other CoPs in the landscape. [Imagination] Early on, participants used the program as “a starting point for exploration”, moving from imitating role models to creating provisional selves in response to feedback afforded by the Master’s program. How they saw themselves in the landscape at 2 years post-graduation was expansive compared to earlier images of self.

**Discussion and Conclusions:** Participants experience of navigating the landscape of practice was transformative, as evidenced by changes in who they aligned with, how they engaged, and what they imagined they might be as educators. Although dissolution of CoPs could be problematic, we found the opposite: what participants in this LQR learned in the program-specific CoP they transferred to other CoPs in the landscape of practice after the program ended. For postgraduate degree programs, helping graduates navigate a dynamic landscape of practice, with its changes and challenges, may be more productive than sustaining a program-specific CoP.

**References:** Sethi A, Ajjawi R, McAleer S, Schofield S. Exploring the tensions of being and becoming a medical educator. BMC Med Educ 2017;17:62
#EP2.1 A Validity and Feasibility Informed Approach to Virtual OSCE Implementation in Undergraduate Medicine (8372)

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
Giovanna Sirianni, Department of Family and Community Medicine, Division of Palliative Care, Sunnybrook Health Sciences, Canada*  
David Rojas, University of Toronto, Canada  
Jana Lazor, University of Toronto, Canada  
Yuxin Tu, University of Toronto, Canada  
Glendon Tait, University of Toronto, Canada  
Kulamakan Kulasegaram, University of Toronto, Canada

**ABSTRACT:**  
**Background:** Pandemic-related disruptions to the learning environment have posed a threat to clinical skills development and assessment for medical students. There has been a shift to both virtual curricular and assessment offerings, including in the provision of Objective Structured Clinical Examinations (OSCEs). Recent literature has shown acceptability and feasibility as it pertains to virtual OSCEs, but this data has been limited by small cohort sizes and limited mention of validity evidence.

**Summary of Work:** The authors report on validity evidence including modifications to the OSCE based on content and response process validity, evidence of internal structure and consequential validity including acceptability by faculty assessors and candidates. In terms of feasibility, the authors discuss the process of modifying stations, faculty development, and implementation.

**Summary of Results:** Reliability of the 6 stations on each day reached satisfactory level with a G-coefficient of 0.51/0.53, which was higher than a previous in-person clerkship OSCE which had G-coefficients of 0.436/0.448. An online survey of student and faculty assessor experiences with the virtual OSCE revealed both groups felt the OSCE ran smoothly and was a feasible option for assessing history taking, clinical reasoning and counselling skills. When asked whether future iterations of the OSCE should occur in a virtual format, results were more equivocal with 38.2% of students and 54.35% of faculty assessors in agreement. In reviewing the narrative survey feedback, the primary hesitancies with virtual OSCEs included the limitations related to assessing communications skills and physical exam competencies.

**Discussion and Conclusions:** This implementation of a virtual, summative clerkship OSCE demonstrated adequate validity evidence, reliability and feasibility. Despite this, students and examiners were equivocal on whether virtual OSCEs should continue to be used in future, primarily due to the perceived limitation of assessing communication and physical exam skills. Exam blueprint considerations in future should include which skills are best assessed in a virtual format while leaving other skills to workplace based assessments.

**Take-home Messages:** A virtual OSCE can be a valid and feasible option for assessing clinical skills in the setting of the pandemic, but continuing to offer the OSCE in a virtual format has its limitations including assessment of communication and physical exam skills.
#EP2: ePoster - Assessment

**#EP2.2 Junior doctor led mock-OSCE series to supplement clinical learning for final year medical students affected by the COVID-19 pandemic (9039)**

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
*Hira Ghuman, Princess Royal University Hospital, Kings College Hospital NHS Foundation Trust, UK*  
*Jessica Omassoli, Princess Royal University Hospital, Kings College Hospital NHS Foundation Trust, UK*  
*Queenie Mae Torrente, Princess Royal University Hospital, Kings College Hospital NHS Foundation Trust, UK*  
*Joseph Byrne, Princess Royal University Hospital, Kings College Hospital NHS Foundation Trust, UK*  
*Edward Shelley, Princess Royal University Hospital, Kings College Hospital NHS Foundation Trust, UK*  
*Zian Khan, Princess Royal University Hospital, Kings College Hospital NHS Foundation Trust, UK*

**ABSTRACT:**

**Background:** The COVID-19 pandemic has had a significant impact on medical education. For clinical years students it has meant reduced exposure to real patients, less ward-based teaching and various missed subspecialty placements. To mitigate this limited clinical experience and aid in overall revision, we utilised the interactive OSCE (Objective Structured Clinical Examinations) framework with the aim to create a supportive learning environment for final year medical students.

**Summary of Work:** A mock-OSCE series was developed for two cohorts of final year medical students, run between September-December 2020. All sessions were delivered by Junior Doctors at the Princess Royal University Hospital, Kent. Each weekly session comprised of multiple stations providing either 1:1 or 1:2 practice opportunities for core skills, such as history-taking, examinations, data analysis and communications skills. Normal examination conditions were maintained, with the addition of station-specific teaching and feedback time. End of session feedback forms were used to gauge evolution of student confidence.

**Summary of Results:** On average 6 students were in attendance, with the majority (100%) satisfied with the format and opportunity. Confidence in different core skills was assessed on a Likert scale of 1 (no confidence) to 5 (very confident) before and after sessions. The mock-OSCE series showed to be effective in improving skills which often heavily rely on patient contact, such as confidence in examination skills (3.07 ± 0.22 Vs. 4.07 ± 0.26) and confidence in formulating management plans (2.88 ± 0.15 Vs. 3.98 ± 0.27). Student ability in communicating information demonstrated the most marked rise, improving by 36% post-sessions.

**Discussion and Conclusions:** We have shown how a mock-OSCE series covering a broad range of specialties, many of which were not accessible during the pandemic, is effective in improving all measured skills. The mock-OSCE stations conducted focused particularly on subjects students felt least comfortable with, such as musculoskeletal examinations. A notable outcome from these sessions was the high level of student satisfaction, which is important given the current ongoing disruption to teaching.

**Take-home Messages:** Regular face-to-face practice and teaching is imperative in building confident future clinicians. For small bubbles of medical students, this can be organised with social distancing, away from high-pressured clinical environments using a mock-OSCE format.
#EP2: ePoster - Assessment

#EP2.3 Preparing medical students for online clinical examinations during the COVID-19 pandemic: Evaluating the use of student run virtual mock OSCEs (8895)

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
Isabella Conti, Queen’s University Belfast, UK*  
Chloe Gilkinson, Queens University Belfast, UK

**ABSTRACT:**  
**Background:** The need for social distancing during the COVID-19 pandemic has led medical schools to make greater use of video conferencing platforms in their Objective Structured Clinical Exams (OSCE). Our aim was to see how student societies can help to prepare medical students for this novel virtual OSCE format by delivery mock examinations.

**Summary of Work:** Our student-run university PsychSoc (QUB Mind Matters) hosted a virtual mock psychiatry OSCE for 24 final year medical students using the video conference platform Zoom. The OSCE comprised 4 stations each lasting 8 minutes, and covered competencies of psychiatric history taking and drug counselling. Stations were marked by psychiatry trainees in individual breakout rooms to closely simulate how a virtual psychiatry station would be run under exam conditions. Post-event online questionnaires were distributed to all participants, with a response rate of 100% (n=24).

**Summary of Results:** The feedback from students was overwhelmingly positive, with 100% (n=24) agreeing/strongly agreeing that the mock OSCE left them feeling more prepared for their final exam. 95.8% (n=23) agreed that the opportunity to practice virtual OSCE stations improved their confidence in their clinical psychiatry skills. All 24 students agreed/strongly agreed that they would like further practice of virtual OSCE stations, as only 25% (n=6) agreed/strongly agreed that their medical curriculum had adequately prepared them for communicating with patients via online platforms.

**Discussion and Conclusions:** Medical students support the use of student-run, virtual mock OSCE stations to prepare them for this novel assessment format. Our student sample unanimously agreed they wanted further virtual OSCE practice to prepare for COVID-safe assessments. Therefore, PsychSocs have an important role in providing students with this virtual communication and history taking OSCE practice where undergraduate curricula are unable to meet the need. Given our mock only focused on psychiatry stations, we welcome further evaluation of the applicability of student-run virtual mock OSCEs to other specialties.

**Take-home Messages:** Virtual OSCEs represent a novel way to conduct undergraduate examinations in the COVID-19 pandemic. We have demonstrated that student society run virtual mock OSCEs can offer crucial practice to undergraduates in preparation for this new challenge.
#EP2: ePoster - Assessment

#EP2.4 Online Psychiatry Objective Structured Clinical Examination - Experience of Irish medical students (8539)

Date of Session: 29 August 2021
Time of Session: 12:00 to 13:30

AUTHOR(S):
Kieran Doherty, St. Vincent's University Hospital, Ireland*
Allys Guerandel, Department of Psychiatry, University College Dublin, Ireland

ABSTRACT:
Background: Psychiatry students at University College Dublin (UCD) routinely undertake an objective structured clinical examination (OSCE) on completion of their rotation. Covid-19 has necessitated the transition to an online assessment platform which uses video integration software developed by Qpercom, an Irish company providing bespoke assessment solutions to universities. This program integrates student, standardised patient, and examiner consoles to an existing electronic assessment software program on a single platform which allows remote examination to be undertaken. The aim of this study was to assess the feasibility and acceptability of an online clinical examination platform to medical students.

Summary of Work: Following participation in an online OSCE, 230 Final Year medical students were invited to complete a 19-item questionnaire. Participation was voluntary. Completion of the questionnaire was regarded as consent to participate. Ethical approval was obtained from UCD Human Research Ethics Committee.

Summary of Results: A total of 223 (97%) valid responses were received. 18% (n=39) of respondents had previously undertaken an online OSCE; 98% (n=218) had undertaken a face-to-face OSCE. Three quarters of respondents reported that the online exam structure was clear (79%; n=176) and the software was easy to use (77%; n=169). Online engagement was comparable to face to face contact for approximately a third (30%; n=64), with three fifths agreeing that they could effectively communicate and demonstrate empathy via the online medium (60%; n=126). While 50% (n=107) reported that online OSCE was more stressful than traditional face-to-face OSCE, 59% (n=124) reported it an acceptable means to conduct clinical examinations.

Discussion and Conclusions: While only a minority of students felt that the online OSCE format was comparable to in person OSCE, there was a high degree of acceptability among students for this format. The user friendliness of the exam software may have contributed to this.

Take-home Messages: Online OSCE assessment is a relatively new assessment medium for medical students, with little research on attitudes to and acceptability of the medium to this cohort in either an Irish or an international setting. The results of this study to date are encouraging and could potentially support the use of the online OSCE as an integral component of medical examinations.
ABSTRACT:
Background: During the core years of specialty training, anaesthetists are required to complete the Primary examination for the Fellowship of the Royal College of Anaesthetists (FRCA). A portion of this examination is a summative assessment as an Objective Structured Clinical Examination (OSCE); however, during the course of the COVID-19 pandemic, all FRCA examinations have migrated to a virtual format. This novel form of assessment has altered candidates preparations for and expectations of the Primary FRCA. We therefore created and evaluated a virtual mock OSCE course to aid candidates revision.

Summary of Work: The course was run via Zoomâ™c breakout rooms, facilitated by one moderator. The course consisted of a 7-station circuit, with an examiner allocated to each station, through which the candidates were rotated successively. Examination station questions were mapped to the format dictated by the Royal College of Anaesthetists - for example, History, Equipment, Monitoring. An interactive simulation station was also included, where candidates were shown a pre-recorded video, following which they were expected to answer questions regarding resuscitation. The circuit was followed by further rotation through the stations for individual feedback and a question-and-answer session.

Summary of Results: Of the 7 candidates, only 1 had previously attempted the examination in this format. 86% of candidates rated the Zoomâ™c format 5/5. Candidate evaluations found the questions realistic, attendance instructions clear, and revision in this format useful. Suggested areas of improvement included longer circuits with more stations, and more anatomy and radiology centred stations.

Discussion and Conclusions: Assessment of candidates feedback reflected satisfaction with the virtual Zoomâ™c breakout-room format. Some challenges included ensuring high quality video for interactive simulation stations and recruiting enough faculty during the pandemic to enable more stations and fully replicate the Primary FRCA OSCE.

Take-home Messages: The global pandemic has mandated virtual professional examinations for multiple medical royal colleges. Even as the pandemic wanes, it is highly likely this format will continue for some time. The evolution of medical education towards technology-based, virtual environments continually challenges the educator to reassess learners needs and adapt their pedagogical choices accordingly.
ABSTRACT:
Background: Around 160 medical students participate in an objective structured clinical examination (OSCE) before graduating from the Faculty of Medicine, University of Helsinki each year. OSCE stations have traditionally used paper sheets for evaluation, which has required lots of resources and time. We introduced a digital OSCE in September 2020.

Summary of Work: We piloted a Moodle-based digital evaluation forms in an OSCE-retake on all 5 stations in April 2020. A survey showed Moodle to be difficult and impractical. None of the responders was ready to use Moodle as an evaluation platform for a large-scale OSCE with 160 students. In September 2020, all 10 OSCE stations, containing a total of 37 OSCE cases, used an iPad-based FileMaker application for student evaluation. We developed and programmed an evaluation form for each case. Case examiners and simulation actors had own forms with predetermined number of fields and criteria. We created a 5-minute video with instructions on how to use iPad for evaluation. After an OSCE we asked examiners to evaluate the new digital OSCE in an anonymous structured Microsoft Forms questionnaire. The form contained Likert-scale questions and open fields.

Summary of Results: We got 32 answers and response rate was 53.3%. The digital OSCE evaluation was highly successful (4.34) and the digital evaluation form met expectations. Most of the examiners used the digital evaluation for the first time. Only 45.2% practiced the case beforehand and 12.9% did not practice at all. Nevertheless, 84% considered an instructional video to be an adequate and effective way to prepare for the digital OSCE. Moreover, all the responders got answers to their questions and considered organizers to be reachable.

Discussion and Conclusions: Moving to digital evaluation in OSCE was proven successful in many ways. We custom-made evaluation forms to respond to examiners needs. The whole evaluation period was shortened, with students receiving the results only three days after the OSCE week via email. OSCE was held during the Covid-19 restriction period, with each of the OSCE stations following strict procedures to ensure safe environment, with all the iPads disinfected regularly.

Take-home Messages: We used an iPad-based FileMaker application for a successful digitalisation of OSCE evaluation process.
Background: The benefits of sequential testing (SQT) are increasingly recognised in medical education (Homer et al., 2018), but little research has focused on the views of candidates (Duncumb and Cleland, 2019). The University of Liverpool MBChB has recently introduced SQT for knowledge testing, supported by extensive student preparation, and this study explored student perceptions of this form of assessment.

Summary of Work: Year 4 students were invited to complete an online anonymous survey (scaled questions and free text) about their recent SQT experience. Simple thematic analysis was applied to narrative comments.

Summary of Results: 25 students participated, with 80% indicating that their recent assessment was fair, authentic, and relevant. In the switch of exam formats, the majority of students had not changed revision strategies, and felt their results would have been reflected in a traditional format exam. All students commented on the impact of the second sequence of the exam (S2), reflecting fear of the unknown and in some cases, more thorough exam preparation to avoid it.

Discussion and Conclusions: Experience of this new format was influenced by numerous external factors; the Covid-19 pandemic, technology issues and the exam being the students finals. Despite the switch to SQT, responses focused on these external factors, suggesting the actual format was not a significant issue and student preparation was successful. Whilst the majority scored themselves as neutral or happier if their exams were in this format going forwards, the impact of S2 revealed personal, and mixed emotions centred on anxiety, uncertainty and comparison of individual performance to rest of the cohort.

Take-home Messages: Developing earlier literature, this exploratory study highlighted the importance of candidate preparation and orientation in advance of new test formats, including SQT. The exploration of candidates emotions around S2 revealed targets for both further enquiry and peri-exam support.
#EP2: ePoster - Assessment

#EP2.8 What factors influence examiners’ standard setting behaviour? (8229)

Date of Session: 29 August 2021
Time of Session: 12:00 to 13:30

AUTHOR(S):
Anne Robins, University of Cambridge, School of Medicine, UK*
Mark Gurnell, University of Cambridge, School of Medicine, UK

ABSTRACT:

Background: Medical School Final Examinations are an important gateway to professional practice. Satisfactory performance is an essential requirement for registration with the General Medical Council (GMC). The process of standard setting defines a pass-mark for these examinations, identifying those whose level of competence is below that required for future safe clinical practice, Cizek (2006).

Summary of Work: Previous studies investigated different methods of standard setting and panel formation, Berk (1986); however, less work has been undertaken on how individual standard setters act, Yeates et al. (2019). Here, we seek to further address this important issue. 14 members of the University of Cambridge standard setting panel completed a questionnaire, with eight undertaking a semi-structured interview. Discussion points included standard setting processes and methods, borderline candidate, and different influential factors. Three single best answer questions were standard set and the reasoning behind participants decisions explored. A thematic analysis was performed under two topics, Braun and Clarke (2006).

Summary of Results: Group Dynamics - The concept of the borderline candidate is essential whether based on teaching experience or current Foundation Doctors. - The peer group must provide a supportive environment to encourage respectful discussion. - The chair is vital to the collaborative nature of discussions. - Participants value panel members with specialist and teacher experience as a guide. Session Structure - A preference for the Ebel method was identified but likely linked to familiarity with the method in Cambridge. - Training for standard setters including the methods, borderline candidate and curriculum is essential. - Appropriate planning of the session including adequate rest / refreshment is required as fatigue can influence decision making. - The provision of performance data often led participants to change their answers potentially ignoring their own concerns.

Discussion and Conclusions: Experienced standard setters appear aware of the influences, either embracing or adapting their reasoning to reduce the effect. This study highlights the importance of those who participate in standard setting being aware of the factors that influence their decisions.

Take-home Messages: Standard setting that is undertaken with appropriate training, an adequate panel and good leadership is robust, defensible and vital in the development of the Medical Licensing Assessment (UKMLA).
#EP2.9 A modified Cohen method for standard setting anatomy practical examinations

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
Sujeevi Nawaratna, Griffith University, Australia*  
Niru Nirthanan, Griffith University, Australia  
Ray Tedman, Griffith University, Australia  
Lakal Dissabandara, Griffith University, Australia

**ABSTRACT:**  
**Background:** Various standard setting methods are used in medical education to determine the pass mark in assessments. While there are no gold standards, criterion referenced methods such as the Ebel method are widely employed. These are limited by substantial investment in time and effort, and requirement for an expert panel, especially in instances where a course consists of multiple low stake examinations such as practical exams in the delivery of the anatomy curriculum.  

**Summary of Work:** The Cohen, and modified Cohen methods (Taylor,2011), were applied retrospectively to four anatomy practical examinations, conducted for first and second year students over a 5-year period (total of 20 examinations) at the School of Medicine, Griffith University, Australia. Cumulative distribution function graphs were generated for all tests to evaluate how the entire cohort responded to the test difficulty and determine a valid reference point (K value) to calculate the pass mark. Pass marks, failure rates and variances of failure rates determined by the Cohen and modified Cohen methods were compared with those established by the Ebel method.  

**Summary of Results:** Lowest pass marks and failure rates determined by the original Cohens method [average pass mark and failure rate (in parenthesis) for the four exams were 57.3% (1.1%), 53.4% (5.8%), 54.8% (5.3%) and 52.8% (8.5%)]. Our modification of the Cohen method produced comparable average pass marks (69.8%, 61%, 60.4% and 57.3%) as the Ebel method (60.9%, 60.9%, 60.8% and 57.1%) for the four exams. The average failure rates across all the exams were 10.7%, 5.2% and 10% for the Ebel, original Cohen and modified Cohen method, respectively. Average variance of failure rates across all the exams were 4.6, 1.9 and 2.5 for the Ebel, original Cohen and our modified method, respectively.  

**Discussion and Conclusions:** Our modified Cohen method consistently yielded comparable pass marks and failure rates to the Ebel criterion referenced method.  

**Take-home Messages:** With modifications suggested by Taylor (2011), the Cohen method serves as a valid, affordable and practical alternative to the time- and resource intensive Ebel method for standard setting low stake anatomy practical examinations.
#EP2: ePoster - Assessment

#EP2.10 Scoping Review of Feedback in Pharmacy Education (8323)

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
Nicholas Nelson, UNC Eshelman School of Pharmacy, USA*  
Denise Rhoney, UNC Eshelman School of Pharmacy, USA  
Amanda Corbett, UNC Eshelman School of Pharmacy, USA  
Rebecca Carlson, UNC Health Sciences Library, USA  
Dennis Williams, UNC Eshelman School of Pharmacy, USA

**ABSTRACT:**  
**Background:** Feedback is a highly effective andragogy. It creates cognitive dissonance within learners and reinforces correct learning for consolidation. It is critical in clinical training programs, represents a required element of pharmacy training programs, and is deemed fundamental to resident development. This review intended to summarize the breadth and depth of feedback literature in pharmacy training and identify areas for future research.

**Summary of Work:** This scoping review followed the Arksey/OMalley and PRISMA frameworks using a two-phase, dual-reviewer screening process. Feedback was defined as information communicated to learners from teachers intended to modify learners thinking or behavior to improve learning. The search strategy contained terms related to education/learners, pharmacy, and feedback. Theory-talk analysis was conducted to evaluate the depth of literature, only including moderate and major theory-talk articles. Only original research was included, and peer-only feedback and non-English articles were excluded.

**Summary of Results:** Overall, 49 citations from 2,182 met full inclusion criteria, spanning from first programmatic year (BPharm, MPHarm, PharmD) to final year of post-graduate training. Four curricular settings were represented including didactic(n=29), objective structured clinical examination(n=6), experiential(n=8), and co-curriculum(n=6). Learners predominantly received written feedback(46.9%) followed by multimodal(34.7%) and verbal(18.4%) feedback. Feedback focused on an array of areas including communication, patient work-up, and career/interview preparation. However, less than half of articles were major theory-talk(34.8%), specifically incorporating analysis of feedback with only one assessing the quality of feedback provided and 21.7% of articles consisted of minimal theory-talk, thus excluded from full analysis.

**Discussion and Conclusions:** The breadth of feedback literature is expansive as feedback is frequently utilized throughout pharmacy education globally for a multitude of topics and settings. This scoping review found little depth to feedback literature, however, as about one-third of included articles assessed feedbacks impact, specifically. Feedback was more commonly a minor aspect of the educational intervention. Several opportunities for research emerged from this review in all curricular settings including feedbacks effectiveness, quality in patient and non-patient care activities.

**Take-home Messages:** From this review, feedback is clearly feasible for a myriad of objectives at all levels of pharmacy education. More research is needed, however, on feedbacks effect size and the quality provided from which training programs could be designed.
#EP2: ePoster - Assessment

**#EP2.11 Is formative assessment a valid predictor of academic performance? (8271)**

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
*Rosa Moreno Lopez, University of Aberdeen, UK*  
*Jane Smith, University of Aberdeen, UK*

**ABSTRACT:**

**Background:** Embedding assessment within the educational process is thought to provide information to steer and foster learning of the individual, using assessment to drive learning. Immediate performance feedback at online formative assessments, is thought to strengthen self-regulation and potentially improve performance. The purpose of this study was to gather student perceptions towards the use of feedback from formative assessment and to determine if this might improve student academic performance during summative assessment.

**Summary of Work:** Multiple short answer questions, in the form of clinical scenario cases were created and uploaded to an accessible online dental undergraduate learning platform (SDEO), during their revision weeks. Students were consented and encouraged to answer all scenarios relevant to their level of study. Once completed and submitted, a model answer was revealed, enabling the identification of learning gaps and areas of weakness requiring remediation. Detailed questionnaire data was then gathered, after the summative examinations, to obtain information about their perceptions towards the value of this formative assessment. Ratified exam scores, perceptions and platform usage were triangulated.

**Summary of Results:** A total of 49 dental students from years 3 (34.7%), 4 (32.7%) and 5 (32.7%) took part in this pilot study. 75% of participants were female, with ages ranging from 21 to 36. 41.6% of the students who took part used the formative questions on more than one occasion during the test period. Point biserial correlation between the examination results and the use of the formative assessments indicated a negative correlation (-0.126), those students who used the formative assessment online had a higher mark on their summative exams when compared with those that didnt use them. Qualitative data analysis showed 95% of the written comments being positive and with students keen to learn by using this testing technique.

**Discussion and Conclusions:** Pedagogical methodology to enhance learning by allowing students to self-regulate and identify their own learning goals has been perceived to be of value by our learners. Further analysis of data and a larger sample size will allow us to determine if the use of formative assessments with immediate feedback can enhance performance.

**Take-home Messages:** Students value online formative assessments to help them adjust their learning styles.
#EP2.12 Transforming undergraduate assessment in response to the Covid-19 pandemic (8225)

**Date of Session:** 29 August 2021  
**Time of Session:** 12:00 to 13:30

**AUTHOR(S):**  
Alan Slater, Cardiff University, UK*  
Dr Liz Forty, Cardiff University, UK  
Dr Lori Black, Cardiff University, UK

**ABSTRACT:**

**Background:** Since March 2020, educators have been grappling to transform curricula designed mainly for face-to-face teaching in response to the Covid-19 pandemic. Anecdotally, medical schools have responded with agility, collaborating with other institutions to ensure their students experience is minimally compromised. However, there remains an issue around assessment. How do we assess medical students learning in both written and clinical formats in a socially-distanced climate?

**Summary of Work:** We developed two methods of conducting written and clinical assessments which we utilised for fourth year medical students at the end of their five-week Psychiatry block at Cardiff University medical school. We used proprietary technology from Microsoft Corporation (Forms) and Zoom Video Communications Inc (Zoom) to assess students learning over the course of the block and to offer them experience of how they performed in these contexts. We collected feedback following the conclusion of the assessments.

**Summary of Results:** Twenty-six students responded to requests for feedback following their formative assessments. Over 80% expressed high satisfaction with the usefulness/value of the experience. Nearly 85% agreed or strongly agreed that the assessment was of significant value in helping them prepare for their following summative exams. Over 80% considered remote assessment was an acceptable alternative to face-to-face assessment.

**Discussion and Conclusions:** It appeared that among students who responded there were high levels of satisfaction with the experience, which appeared to be a highly acceptable way of delivering assessment. The potential for using these methods for summative assessments should be explored.

**Take-home Messages:** • Remote assessment appears to highly acceptable to medical students  
• Remote assessment has value as an alternative to traditional assessment channels  
• There is potential for summative assessment to be carried out remotely; further work is needed in this area
#SC5: SC - Postgraduate Education 1

#SC5.1 The guiding role of APPs in residency training. A mixed method study (8254)

Date of Presentation: 29 August 2021
Time of Presentation: 12:00 to 12:15

AUTHOR(S):
Iris Jansen, Amsterdam UMC (location AMC), The Netherlands*
Renée Stalmeijer, Maastricht University, The Netherlands
Milou Silkens, University College London, UK
Kiki Lombarts, Amsterdam UMC (AMC), The Netherlands

ABSTRACT:

**Background:** Learning in the workplace while providing patient care is the backbone of residency training. Guidance and supervision by clinical supervisors are beyond doubt crucial to aid residents development and ensure safe and high-quality patient care. Yet, as patient care requires the joint effort of health care teams, residents are members of interprofessional teams and daily interact with many professionals. As such, advanced-practice providers (APPs: e.g., nurse practitioners) have a unique position to guide residents in the workplace. Guiding encompasses any form of developmental assistance provided by APPs to help residents improve themselves as a physician. To better understand and optimize the role of APPs in the development of residents, we studied: to what extent do APPs guide residents in the workplace from the perception of both APPs and residents, and how do barriers and enablers from the workplace influence these perceptions?

**Summary of Work:** Using Mixed Method Explanatory Sequential Design, we first conducted an online questionnaire (winter 2021) to gather residents and APPs perceptions of APPs guiding role in the workplace in Dutch hospitals. The questionnaire contained eight domains based on validated constructs and own developed items: Guiding residents, Demonstrating health care aspects, Feedback, Help-seeking & providing, Socialization, Learning and patient care, Work and learning climate, and Attitude towards interprofessional collaboration. The questionnaire was pilot tested on three residents, three APPs and three questionnaire development experts. We will conduct semi-structured interviews during spring 2021 with approximately ten residents and ten APPs who completed the questionnaire to identify barriers and enablers from the workplace around the guiding role. Interviews will be analyzed using template analysis.

**Summary of Results:** The analysis of the results is still ongoing and the analysis of the results will be finished during fall 2021.

**Discussion and Conclusions:** With the use of the questionnaire and the interviews, we will be able to define the role of APPs in residency training from both APPs and residents perspective. We will be able to draw implications on how to strengthen this role further and point towards enablers and hindrances based on the interviews.

**Take-home Messages:** APPs guiding role could provide new insights how to improve residents workplace learning.
Providing Education in Safe Settings: a Framework for Postgraduate Programs to Promote Resident Clinical Care Safety and Wellness (7726)

Date of Presentation: 29 August 2021
Time of Presentation: 12:15 to 12:30

AUTHOR(S):
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Dr. Sabrina Agnihotri, University of Toronto, Canada
Certina Ho, University of Toronto, Canada
Dr. Sanjeev Sockalingam, University of Toronto and Centre for Addiction and Mental Health, Canada

ABSTRACT:
Background: There is a lack of formal guidance for postgraduate education to address trainee clinical care safety and risk management. We identified this fundamental need in psychiatry residency and are committed to ensure resident training and learning to occur in safe clinical settings.

Summary of Work: Involving residents in developing our clinical care safety and wellness framework could support reporting of resident assault and safety concerns. We collaborated with residents and created a Resident Safety Sub-Committee (RSS) and a Safety Training Framework at a Canadian psychiatry department. Our goal is to provide residency training with an approach to building resident safety culture.

Summary of Results: The RSS developed and disseminated safety guidelines and safety checklists to residents and supervisors at each training site. If a safety incident was reported, the RSS would conduct an incident review and provide suggestions to the site for safety improvements. In 2016-2020, four reviews were performed. Recommended safety improvements included having monthly testing/audit of panic/safety alarms for residents; developing a system to flag high-risk inpatients on patient charts; and modifying physical layout of inpatient units to ensure safety. The RSS also conducted site safety assessments regularly. The RSS created a site safety review template with pre-determined safety criteria. A training site is deemed to be adherent (green-coded), mostly adherent (yellow-coded), or not adherent (red-coded) to the safety guidelines. In 2016-2020, the RSS conducted 26 site safety assessments, with 17 green, 9 yellow, and none being red. The RSS offered site recommendations, such as, extending safety procedures to outpatient and day-hospital service; re-locating weighted furniture to dedicated patient interview rooms; and including wellness resources/offerings available in resident/site orientation.

Discussion and Conclusions: The RSS and Safety Training Framework provide a novel approach that proactively and retrospectively addresses safety in resident training. Involving residents in the RSS can provide a forum for residents to address attitudinal and institutional barriers to reporting safety incidents and promote emotional wellness.

Take-home Messages: Engaging residents in developing a Safety Training Framework can promote resident clinical care safety and wellness. Safety guidelines and safety checklists in addition to a transparent process for retrospective incident reviews and proactive site safety assessments should be considered.
#SC5.3 Affordances and constraints of a hybrid Family Medicine registrar-training programme (7949)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:30 to 12:45

**AUTHOR(S):**  
Ann George, University Of The Witwatersrand, South Africa*  
Deidre Pretorius, University Of The Witwatersrand, South Africa  
Michele Torlutter, University Of The Witwatersrand, South Africa  
Carien Lion-Cachet, University Of The Witwatersrand, South Africa  
Neetha Erumeda, University Of The Witwatersrand, South Africa

**ABSTRACT:**

**Background:** A hybrid Family Medicine registrar-training programme rolled out in 2018 across six decentralised training sites affiliated with the University of the Witwatersrand in South Africa combines online resources and scenario-based sessions with clinical training. Given the extensive curriculum, the programme aims to facilitate access to authentic resources within a more structured framework. This paper reports on registrars perceptions of the new programme, which will inform the redesign of the online resources on the universitys learning management system (LMS) and their improved integration into the programme.

**Summary of Work:** Five focus group interviews were conducted with a purposive sample of 21 registrars across all four years of study from four training sites in November 2018. The registrars were asked about their usage of the online resources, their usefulness and constraints, and how they could be more effectively integrated into the training programme. The interviews were audio-recorded, transcribed verbatim, and analysed thematically.

**Summary of Results:** Three themes were identified. The first, Affordances of the online resources, provides insight into how the online resources promote convenience and enhance learning. The theme, Constraints of the programme, relates to constraints of the online resources and their limited usage by some registrars. The final theme deals with Making better use of the online resources.

**Discussion and Conclusions:** While the registrars valued the convenience of the online resources, their real worth was recognised as providing a more structured approach to learning, especially with the inclusion of cross-cutting content that senior registrars felt had not been as accessible during their early training. While some senior registrars raised concerns that the online resources could discourage self-directed learning, most disagreed, citing evidence for myriad opportunities for self-directed learning within the programme. Reports of limited usage revolved around technical difficulties. LMS functionality may limit suggestions to improve the navigation of the course site. However, other suggestions on better integrating the online resources with the contact sessions are more feasible. This ambitious hybrid programme could be further improved to enhance learning.

**Take-home Messages:** 1. Online and hybrid learning programmes need ongoing evaluation and redesign. 2. Students voices need to be heard in developing and redesigning learning programmes.
#SC5: SC - Postgraduate Education 1

#SC5.4 IdentifyVR - Innovating teaching delivery using 360-degree video to educate clinical staff on the identification and prevention of inappropriate behaviours at an NHS Trust (9342)

Date of Presentation: 29 August 2021  
Time of Presentation: 12:45 to 13:00

AUTHOR(S):  
Jordan Tsigarides, Norfolk and Norwich University Hospital, UK*  
Shreya Kulkarni, Norfolk and Norwich University Hospital, UK  
Hayley Bishop, Norfolk and Norwich University Hospital, UK  
Medha Sule, Norfolk and Norwich University Hospital, UK

ABSTRACT:
Background: Within the NHS, workplace bullying is still a significant problem. Associations between staff wellbeing and patient care highlight the trust-wide implications of inappropriate behaviours. Staff often feel unable to speak-up, leading to under-reporting of bullying. Virtual reality (VR) allows learners to experience realistic, immersive scenarios resulting in educational impact. VR resources can give healthcare staff the feeling of presence within evolving scenarios remotely, empowering them to speak-up and prevent inappropriate behaviour.

Summary of Work: We created three 360-degree videos which formulated the IdentifyVR educational programme. This was delivered to foundation year doctors within the Norfolk and Norwich University Hospital trust. Videos displayed realistic simulations of staff encounters, created with minimal funding. Scenarios covered the spectrum of behaviours, from appropriate performance management to inappropriate bullying. Cardboard VR headsets were provided, enabling learners to use their own smartphones to view the content in VR. After watching scenarios, learners were encouraged to pause and reflect on the experience. Following reflection, learners were given a VR video debrief. We evaluated learners self-efficacy and subjective experience using pre/post intervention questionnaires.

Summary of Results: Post-educational intervention, 87% (n=13) of learners agreed they felt confident having a conversation to address inappropriate behaviours with responsible individuals (+47% from baseline) and were aware of how to access further support. 100% (n=15) agreed they knew how to support colleagues to speak-up (+33% from baseline). When considering the VR equipment, 80% of learners agreed that the equipment was easy to use and navigate (n=12). Learners also agreed that the content induced feelings of presence within the scenarios (n=13, 87%) and was immersive (n=12, 80%).

Discussion and Conclusions: Immersive educational resources can be produced within healthcare settings for meaningful technology-enhanced learning. Preliminary evaluation results suggest that immersive content can increase staff preparedness for addressing inappropriate behaviours within the workplace. Immersive content provides an accessible solution to current challenges, allowing learners to experience difficult scenarios at home within a safe and non-threatening environment.

Take-home Messages: 360-degree video is an immersive educational tool with potential to increase staff self-efficacy around management of inappropriate behaviours within healthcare settings. IdentifyVR allows us to provide immersive experiences remotely, allowing flexibility and accessibility in today’s ever-changing healthcare.
#SC6: SC - Interprofessional Education

#SC6.1 Evaluation of Ontario’s Extension for Community Healthcare Outcomes (ECHO)
Skin and Wound Care Program (9265)

Date of Presentation: 29 August 2021
Time of Presentation: 12:00 to 12:15

AUTHOR(S):
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Terry Soleas, Queens University, Canada
James Elliott, Project ECHO Skin and Wound Care, Canada
Nancy Dalgarno, Queens University, Canada
Reneeka Jaimangal, Project ECHO Skin and Wound Care, Canada
Karen Smith, Queens University, Canada

ABSTRACT:
Background: Project ECHO Ontario Skin and Wound Care is a learning community for healthcare providers interested in further developing their skills in skin and wound care. This learning model features synchronous online sessions, deidentified patient cases, and case discussions. Community providers and specialists learn from each other, acquire knowledge and skills, increase competency, and foster a community of practice. Currently in its third cohort, the program has impacted 441 healthcare professionals from 25 professions.

Summary of Work: The program consisted of eight sessions in Cycle 1 and in Cycle 2 for each cohort. The program evaluation for each cohort consists of a pre-and post-program survey, as well as post-session surveys. Quantitative data was analyzed using SPSS. A two-tailed t test was used to measure the increase in participant comfort levels with identified learning objectives. Qualitative data was structurally coded using NVivo and emergent themes were identified.

Summary of Results: In Cohort A and B, more than half of participants identified themselves as being from nursing disciplines. Overall, 79% of participants indicated that they would make changes to their practice after attending an ECHO session. For Cohorts A and B, the average rating for overall comfort was significantly A (t = -2.91, p = 0.004), B (t = -2.13, p = 0.041) higher at the end of all training sessions A (x̄, = 3.64, SD = 0.38), B (x̄, = 3.69, SD = 0.426) than at baseline A (x̄, = 3.33, SD = 0.38) B (x̄, = 3.39, SD = 0.66). Participants identified the inter-professional community and speaker expertise as key strengths of the program. The main challenge was technical issues in the online learning environment.

Discussion and Conclusions: Project ECHO Ontario Skin and Wound Care facilitates advanced, inter-professional learning for healthcare practitioners across Ontario. Participants from all three cohorts are currently participating in a virtual boot camp to apply the skills learned during the online sessions.

Take-home Messages: Project ECHO Ontario Skin and Wound Care facilitates advanced knowledge, confidence, and comfort of healthcare professionals caring for patients through an inter-professional learning community.
Date of Presentation: 29 August 2021
Time of Presentation: 12:15 to 12:30

AUTHOR(S):
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Ester Coolen, Radboudumc Amalia Childrens Hospital, The Netherlands
Janiëlle van der Velden, Radboudumc Amalia Childrens Hospital, The Netherlands

ABSTRACT:
Background: To deliver high-quality, patient-centered care for individuals with complex care needs, residents need to be trained across the boundaries of their own specialty. Interprofessional learning between individuals of different professions has been extensively studied, while studies on intraprofessional learning between individuals of different disciplines within the same profession (e.g. surgeon-pediatrician) remain scarce. This study aimed to investigate which factors influence resident intraprofessional learning.

Summary of Work: This qualitative study was conducted in a tertiary care childrens hospital, where care is provided for children with complex care needs. Fourteen individual and two focus group interviews were conducted with a purposive sample of residents and program directors of fifteen different specialties, to capture the phenomenon from different perspectives. Due to the rotation of residents, participants could report from a range of experiences in various departments. A phenomenological approach was applied to give meaning to common features of intraprofessional learning during residency training.

Summary of Results: Participants generally had a positive attitude towards intraprofessional learning. Residents learn intraprofessionally from a diversity of activities both directly and not directly related to patient care. This study identified several factors on system, institution, interaction, learner, and patient level that influence intraprofessional learning. While some factors influence whether learning opportunities arise, others influence if these opportunities are seized. For example, the training curriculum and workload determines if residents partake in intraprofessional activities, while care complexity influences if residents take an active role. Often, intraprofessional activities in daily practice are not recognized as learning opportunities, probably limiting resident learning.

Discussion and Conclusions: This study gives insight into intraprofessional learning opportunities for residents and influencing factors in complex tertiary pediatric care. Residents and program directors consider intraprofessional learning valuable, but they also experience many barriers in daily practice, such as conflicting time demands, logistical challenges and high complexity of care. At the conference, we will present our results in depth and provide suggestions for improvement for intraprofessional learning in tertiary care.

Take-home Messages: There is much potential for intraprofessional learning in tertiary care in postgraduate medical training. This learning potential could be better utilized with interventions to overcome barriers to resident participation and to stimulate awareness of learning opportunities.
#SC6: SC - Interprofessional Education

#SC6.3 Assessing team- and task-related knowledge as components of shared mental models in OR personnel (9186)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:30 to 12:45

**AUTHOR(S):**  
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Jeroen Janssen, Utrecht University, The Netherlands  
Falco Hietbrink, University Medical Center Utrecht, The Netherlands  
Reinier Hoff, University Medical Center Utrecht, The Netherlands

**ABSTRACT:**  
**Background:** The operating room is a highly complex environment, where patient care is delivered by alternating interprofessional teams. Unfortunately, issues with communication and teamwork occur, possibly leading to patient harm. To function effectively as a team, several requirements must be met. A shared mental model (SMM) is such a prerequisite, and consists of task- and team-related knowledge. We aimed to study potential differences in task- and team-related knowledge between the different professions working in the operating room (OR), which might hamper the development of SMMs.

**Summary of Work:** A survey study was conducted in three hospitals in the Netherlands, one academic center and two regional teaching hospitals. The survey was developed by representatives of each profession. It assessed team-related knowledge regarding other professions training and work activities, and perceived traits of a well-functioning and a malfunctioning colleague. Task-related knowledge was assessed by mapping the perceived allocation of responsibilities for certain tasks in the OR, using a Likert-type scale.

**Summary of Results:** 106 health care professionals participated, of which 70% worked in the academic center and 77% were certified professionals. The participants were reasonably well informed about other professions. On average the least was known about the profession of anaesthesiologists and most about surgeons. There was general consensus about the importance of good communication and adequate teamwork. When assessing responsibilities we found consensus in well-defined and/or protocolized tasks, but variation in less clearly defined tasks, such as communication with the patient.

**Discussion and Conclusions:** Team-related knowledge is fairly well developed, but discrepancies are observed. Our results are in line with earlier studies where discrepancies occurred in task-related knowledge, although it should be noted that surgical specialists were underrepresented in our sample. The importance of adequate communication and teamwork was reflected in the responses of participants. The observed differences indicate that future education should target further development of SMMs in OR teams, in order to optimize team performance.

**Take-home Messages:** Adequate teamwork is incredibly important in the OR. The observed differences in team- and task-related knowledge in the questioned OR teams may prove detrimental for patient care. Investing in optimization of SMMs should lead to further improvement of team performance.
#SC6: SC - Interprofessional Education

#SC6.4 Meaningful Student Engagement: from Interprofessional Education to Collaborative Practice (9326)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:45 to 13:00

**AUTHOR(S):**  
Rannia Shehrish, International Federation of Medical Students' Associations, Bangladesh*  
Tomáš Petras, International Federation of Medical Students Associations, Slovakia  
Ali Channawi, International Federation of Medical Students Associations, Morocco

**ABSTRACT:**

**Background:** The World Health Organisation estimates a projected shortfall of 18 million health workers by 2030, mostly in low- and lower-middle-income countries. Interprofessional Education (IPE) presents an innovative approach to mitigate the gap between population health needs, and providable resources, since it prepares the future, collaborative-practice ready health workforce. The International Federation of Medical Students Associations (IFMSA) capacitates medical students to advocate for improvement of the status quo. On that note, IFMSA and International Pharmaceutical Students Federation (IPSF) developed a global interprofessional competition (Brainfuse), bringing healthcare students from all around the world to collaborate on clinical scenarios. Building on this experience, IFMSA partnered with other healthcare student organizations and is planning to conduct a Global Assessment on Students perspective on IPE and develop a toolkit to build capacity and advocacy actions locally and nationally.

**Summary of Work:** IFMSA is working on conducting a Global Survey on IPE. The survey includes medical students knowledge and experience on IPE, implementation status of IPE and their perspectives on the importance of IPE. For the term 2020/2021, SCOME created a Small Working Group aiming to create a toolkit on students engagement on the improvement of the IPE status quo globally, through local and national activities. The toolkit also provides capacities and activities to medical students to assess and develop interprofessional education in their medical curriculum.

**Summary of Results:** The Global Survey on IPE and the toolkit results will be analysed in the period April - June. All results will be presented at AMEE2021.

**Discussion and Conclusions:** A team-based setting is very important not only for patients compliance with treatment, but also an important aspect of mitigating the big gap between healthcare resources, and healthcare needs of populations. Medical students need to be involved in the assessment of the interprofessionality of their own curricula and to promote it with other healthcare students.

**Take-home Messages:** Medical students should be equipped with opportunities to address Interprofessional Education through developing collaborative projects and activities with other healthcare students. Medical faculties should foster the student-engagement and support student organisations towards developing activities, such as collaborative competitions, workshops or conferences.
ABSTRACT:
Background: The continuous changing health care and higher education landscape create unprecedented challenges in preparing health professionals. One such a challenge is enabling interprofessional collaborative learning with 1000+ students. Health professions educators have to explore innovative teaching practices such as Team-based Learning (TBL) to foster student engagement and interprofessional collaborative learning. The motivation behind this research project was to explore how TBL can be used to enhance student engagement and interprofessional collaborative learning in a compulsory health philosophy module within a large class setting.

Summary of Work: Using all-inclusive voluntary sampling (n=346), the research was conducted with second-year students (N=1335) enrolled for this compulsory module in 2019, representative of fourteen health/social care professions. Qualitative data-collection methods included a written pre- and post-module reflections and focus group interviews. Data was analyzed using thematic analysis. Ethics approval was granted by the Faculty Health Research Ethics Committee and the Institutional Research Data Gatekeepers Committee. Voluntary participants also gave written informed consent.

Summary of Results: Working collaboratively in interprofessional teams, the in-class team readiness assurance test (tRAT), the clarification sessions and focused application task (FAT) exposed students to diverse individual and disciplinary perspectives and approaches which challenged hegemonic individual and disciplinary thinking. TBL was perceived as more effective than traditional lecturing. Participants experienced improved interprofessional collaboration and engaged learning, mutual respect, trust, communication skills, problem-solving and understanding disciplinary roles and thinking.

Discussion and Conclusions: TBL sufficiently encourages interprofessional collaborative learning between undergraduate students from different health and social care professions in a large class environment. TBL creates an engaging student and learning-centred environment where: • hegemonic and mono-disciplinary thinking are challenged, • interprofessional collaborative learning is fostered, • students are more engaged in the learning process and actively engaged with the content, lecturer and peers, and • interprofessional collaboration, communication, problem-solving, relationships, understanding and mutual respect are cultivated.

Take-home Messages: TBL sufficiently encourages interprofessional collaborative learning between undergraduate students from different health and social care professions in a large class environment. TBL also provides an ideal platform to cultivate mutual respect and understanding between health and social care disciplines.
#SC6: Interprofessional Team-based learning (TBL) in health professional education: a systematic review (7996)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 13:15 to 13:30

**AUTHOR(S):**  
Annette Burgess, The University of Sydney, Faculty of Medicine and Health, Sydney Medical School, Education Office, Australia*  
Deborah McGregor, University of Wollongong, Australia

**ABSTRACT:**  
**Background:** The use of Team-based learning (TBL) in interprofessional education (IPE) has increased over the past decade, applied within health professional degree programs as a means of engaging students in structured, small-group interprofessional teamwork. TBL has been adopted and delivered in varied formats, across diverse IPE contexts and content areas. We conducted this systematic review to establish the extent, design, and practice of interprofessional TBL within medical and health professional university degree programs to inform curriculum planners and education designers.  
**Summary of Work:** We searched PubMed, CINAHL, Web of Science and ERIC databases for articles describing TBL involving student representation from multiple health profession degree programs published between 2010 and 2020. Included original research articles were assessed and described according to Haidet et al’s seven core TBL design elements: team formation, readiness assurance, immediate feedback, sequencing of in-class problem solving, the four Ss (significant problem, same problem, specific choice, and simultaneous reporting), incentive structure, and peer review.  
**Summary of Results:** Twelve articles satisfied the inclusion criteria. Significant variability was noted in the application and reporting of the seven core TBL design elements. Although the structured format of TBL provided a suitable pedagogy for interprofessional education, some challenges to the implementation of interprofessional TBL were identified.  
**Discussion and Conclusions:** Most articles reported that the TBL format provided a positive interprofessional learning experience for students. However, the authors identified a number of challenges that impeded the traditional TBL format being used, including: the unequal distribution of students to teams as a result of multiple disciplines from different programs; varied levels of student experience with the pedagogy of TBL; resources required for large groups of students to suit the TBL format; timetabling requirements; continuity of TBL sessions; design of patient cases to suit multiple disciplines; alignment of topics within curricula of multiple disciplines and programs; and limited opportunity for peer review.  
**Take-home Messages:** Key to successful interprofessional TBL is curricula alignment and integration; equal distribution of disciplines within teams with use of suitable patient cases; and provision of student training/guidelines in TBL pedagogy and participation requirements.
#SC7: SC - EPAs

#SC7.1 Developing and Validating EPAs for Certified Registered Nurse Anesthetists (CRNA) in Taiwan (9635)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:00 to 12:15

**AUTHOR(S):**  
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Hui-Ju Yang, Taiwan Association of Nurse Anesthetists, Taiwan  
Wen-Jan Dai, Taipei Medical University Hospital, Taiwan  
Chuen-Chau Chang, Taipei Medical University Hospital, Taiwan  
Che-Wei Lin, Taipei Medical University Center for Education in Medical Simulation, Taiwan  
Po-Fang Tsai, Taipei Medical University, Taiwan

**ABSTRACT:**

**Background:** Entrustable Professional Activities (EPAs) can contribute to the integration of competency-based training (CBT) into the clinical workplace and support interprofessional teamwork through delineated professional roles and responsibilities. In this study, we aim at developing and validating EPAs for the training of certificated registered nurse anesthetists (CRNA) in Taiwan.

**Summary of Work:** To design EPAs for CRNA, 10 experts (6 CRNAs, 2 anesthesiologists, and 2 medical educators) were purposively invited to employ the Nominal Group Technique (NGT) in July 2020. To validate those EPAs proposed after the NGT, 45 experts (21 CRNAs and 24 anesthesiologists) were recruited to carry out a serial of Modified Delphi Surveys from December 2020 to February 2021.

**Summary of Results:** The six ad hoc EPAs and their aligned summative EPAs under two specific clinical scenarios (e.g., regional anesthesia for Cesarean Section and general anesthesia for laparoscopic surgery) were first developed, and further delineated into 161 items of description. After three rounds of iterated opinion exchange, all of the 18 EPAs with their 145 items have achieved either consensus (IQR<1) or stability (change <20%). However, there were 16 items either modified or deleted after our review.

**Discussion and Conclusions:** This nationwide study not only generates a new framework for CRNA competency-based training, but also serves as a buy-in process for the local stakeholders engagement towards CBT in Taiwan.

**Take-home Messages:** Six ad hoc EPAs and their aligned twelve summative EPAs have been developed and validated for CRNA training in Taiwan.
#SC7.2 Assessing the concordance of narrative comments with supervision ratings provided during Entrustable Professional Activity assessments (7976)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:15 to 12:30

**AUTHOR(S):**  
Kelley Mark, University of Virginia School of Medicine, USA*  
Andrew Parsons, University of Virginia School of Medicine, USA  
James Martindale, University of Virginia School of Medicine, USA  
Megan Bray, University of Virginia School of Medicine, USA  
Ryan Smith, University of Virginia School of Medicine, USA  
Maryellen Gusic, University of Virginia School of Medicine, USA

**ABSTRACT:**

**Background:** Recent reviews have called for additional studies to assess the validity of Entrustable Professional Activity (EPA) assessments. Concordance among EPA assessment data helps to establish validity of this approach. In this study, we examined the concordance of supervision ratings and the narrative comments provided in EPA assessments by assessing the correlation between assessors ratings and ratings provided by an expert panel.

**Summary of Work:** A stratified random sampling of EPA assessments completed by various assessors between February 2018 - February 2020 in different clinical settings were extracted. Narrative comments were separated from the supervision rating assigned at the time of the assessment. An expert panel used EPA-specific performance expectations and the narrative comments to independently assign a supervision rating. The Kendall W test of concordance was used to assess inter-rater reliability and to examine comparisons with original supervision ratings.

**Summary of Results:** For 100 comments, the overall coefficient of concordance (CC) amongst the panel was .67 for EPA 1-history (HX) comments; .76 for EPA 1-physical exam (PE); and .74 for EPA 6-oral presentation (OP). Overall CC between the panels median rating and the supervision ratings assessed by any assessor at the time of observation was .39 for HX; .70 for PE and .78 for OP. CC between ratings of the panel and the original assessor were highest for Master Assessors (MAs) for all EPAs. CC between the panel and the original assessor were highest for pediatrics; for HX = .69 and PE = .89. For OP, CC between the panel rating and rating at the time of assessment on internal medicine and surgery was higher (.88) than pediatrics.

**Discussion and Conclusions:** Experts reliably assigned supervision ratings. Supervision ratings had variable levels of concordance with ratings by the original assessor; the highest was with MAs. Alignment of the components of EPA assessments is critical in making the data meaningful to learners and useful in summative decision-making.

**Take-home Messages:** EPA assessments communicate information about a learner not only through entrustment-supervision ratings but also narrative comments. These findings highlight the importance of professional development to ensure assessors are able to provide narrative comments that illuminate and support supervision decisions.
#SC7: SC - EPAs

#SC7.3 Implementing Entrustable Professional Activities for final-year medical students (9118)

Date of Presentation: 29 August 2021  
Time of Presentation: 12:30 to 12:45

AUTHOR(S):  
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Jenny McDonald, School of Medicine, Western Sydney University, Australia  
Annemarie Hennessy, School of Medicine, Western Sydney University, Australia  
Neil Merrett, School of Medicine, Western Sydney University, Australia  
Caroline Joyce, School of Medicine, Western Sydney University, Australia

ABSTRACT:  
Background: Our medical school commenced 2020 with a pilot of entrustable professional activities for final year medical students. Implementation was needed two-thirds of the cohort became junior interns (assistants-in-medicine) whilst still remaining as medical students. For both streams, this became their major workplace based assessment approach for 2020.

Summary of Work: The EPAs were faithful to the concept described by ten Cate. The 14 EPAs map to daily usual clinical tasks of PGY1-2 doctors in our health system. Supervision level advised was noted. Webinars and coaching assisted individuals with use. The Myprogress app related to MyKnowledgeMap (York, Uk) allow bespoke design. This system was reliable and swift to use in the clinical workplace. Observers/supervisors ranged from senior consultants to PGY2 doctors.

Summary of Results: Analysis showed considerable overlap between the two streams: engagement was strong enabling the EPAs to be built into cohort assessment. 3500 EPAs were performed by the cohort of 120, showing progress with performance and supervision level across the year. Feedback was facilitated. Student self-assessment and reflection leading to actions have been demonstrated. Evaluation was designed for the pilot and continued. Findings will be presented.

Discussion and Conclusions: Our medical school had been seeking more formative feedback and a progressive approach for WBAs. EPAs have supplied that, with enough authentic information to support completion of final year. A structured interview tested their own EPAs for individual students. The usual checkpoint OSCE was not used. The multiple episodes recorded informed the term reports, which also noted professionalism, contribution to the medical team and built on the relationships established.

Take-home Messages: Our medical school was assisted by the portfolio system that was available to us and the opportunity to use this ahead of planned time. We commend the EPA approach for final year medical students as an excellent method of looking at readiness and preparation for graduate clinical practice. Be sure to cover the concepts well, over a period of time. The pilot discussions set the scene well and support from the clinical school medical and professional staff has enabled this to now become the norm: it continues for 2021.

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Entrustable Professional Activities as an Instrument to Measure Readiness of Medical Students at the Start of their Final Clerkship Year (8909)

Date of Presentation: 29 August 2021
Time of Presentation: 12:45 to 13:00

AUTHOR(S):
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Torsten Rollinger, Charité - Universitätsmedizin Berlin, Dieter Scheffner Center for Medical Education, Germany
Ylva Holzhausen, Charité - Universitätsmedizin Berlin, Dieter Scheffner Center for Medical Education, Germany
Harm Peters, Charité - Universitätsmedizin Berlin, Dieter Scheffner Center for Medical Education, Germany

ABSTRACT:
Background: Entrustable Professional Activities (EPAs) represent an increasingly employed approach to assess medical students’ performance in the workplace. This study analyses the readiness of medical students for entry into the final clerkship year based on the EPA concept to inform students and the program directors.

Summary of Work: In 2019, 695 medical students from the competency-based undergraduate program of Charité - Universitätsmedizin Berlin were surveyed online before the start of their final clerkship year. They were asked to indicate the level of supervision under which they are able to perform a set of 35 EPAs. The EPAs were based on the locally developed set of undergraduate Core EPAs (Holzhausen 2019). The 7 level supervision scale ranged from not able to carry out to able to carry out unsupervised. It was expected that students starting their final clerkship are minimally able to perform the defined EPAs without direct supervision.

Summary of Results: A total of 124 students (75% female, 25% male) with an average of 26 years (SD = 4 years) completed the survey. The majority of the students (50%) indicated to carry out the task without direct supervision for all 35 EPAs. Good readiness was seen for taking patient history, performing physical examination, reporting a patient history of medical procedures such as drawing blood. Relevant gaps were reported in EPAs such as compile and implement a treatment plan, preparing and filing orders and recognizing an emergency situation and act upon it. Participating students received their individual results in comparison to all participation students. Curriculum directors and managers received the summarized, non-individual results of all study participants.

Discussion and Conclusions: The EPA concept offers an easy to apply approach and tangible results on the readiness of medical students for the entry into the final clerkship year. The results provide students with individual feedback on strengths and gaps as well as the program directors of strengths and gaps of their undergraduate medical curriculum.

Take-home Messages: EPAs can help to gain an insight in medical students readiness before entering the final clerkship year and are a tangible way to identify gaps in a medical program.
#SC7: SC - EPAs

**#SC7.5 Lessons from the AAMC Core Entrustable Professional Activities (EPAs) for Entering Residency Core EPA Pilot Project: Student Perspectives of Workplace-Based Assessment (7507)**

**Date of Presentation:** 29 August 2021
**Time of Presentation:** 13:00 to 13:45

**AUTHOR(S):**
Katherine Gielissen, Yale University School of Medicine, USA*

**ABSTRACT:**

Background: In 2015, the AAMC Core Entrustable Professional Activities (EPAs) for Entering Residency were piloted at 10 US medical schools. Students are important stakeholders whose engagement is essential to successful workplace-based assessment (WBA) systems. Our study explored the medical student perspectives on EPA-specific WBAs at eight pilot schools who had fully implemented EPAs on core clerkships at the time of study.

Summary of Work: An online questionnaire was administered to clerkship students at pilot schools in Spring 2019. We examined responses for statements about the extent of 1) opportunities to perform EPAs, 2) instructional methods on EPAs, 3) supervisor engagement activities, and 4) satisfaction with workplace-based assessment. We also calculated an implementation score (EPA-IS; sum of responses range 0-9) to statements that use of Core EPAs at my school 1) positively contributed to my confidence in my clinical abilities, 2) helped me understand what will be expected of me at the start of residency, and 3) positively contributed to the quality of my education). ANOVA and Pearson correlations tested between-group differences; regression analysis identified IIS predictors.

Summary of Results: Of 440 participants who provided responses to all items of interest, EPA-IS varied between schools (p<.001), and was associated with extent of different opportunities to perform EPAs (correlation = .26, p<.001), instructional methods (.27, p<.001), and supervisor engagement activities surrounding EPAs (.42, p<.001). EPA-IS was correlated with satisfaction with clinical workplace-based assessment (WBA) (.78, p<.001). Regression analysis showed between-school differences in EPA-IS were largely related to satisfaction with WBAs.

Discussion and Conclusions: Third year students positive perceptions of Core EPAs are independently correlated with attitudes that WBAs are of high quality and take place in a safe learning climate supported by engaged supervisors, factors that can be individually monitored, modified, and improved by medical schools. We recommend concentrated focus on the learning environment and quality of WBAs for students to perceive Core EPAs implementation as useful in their education.

Take-home Messages: For students to perceive EPAs as effective to their education, educators should focus on the quality and quantity of WBAs, and ensure assessment takes place in a safe learning environment.
#SC7.6 Bridging the EPAs in UGME and PGME - an evaluation and quality improvement practice of EPAs in UGME (9627)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 13:15 to 13:30

**AUTHOR(S):**  
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Carlos Gomez-Garibello, McGill University, Canada  
Sabrina Fallavollita, McGill University, Canada  
Marian Jazvac-Martek, McGill University, Canada  
Melanie Mondou, McGill University, Canada

**ABSTRACT:**

**Background:** Following the trend of Competency Based Medical Education (CBME) in Canada, Entrustable Professional Activities (EPAs) offer a practical approach to assessing competence and now being increasingly incorporated into undergraduate medical education (UGME). In an attempt into improve integration of EPAs across the medical education continuum, there is a strong need further the research on how to develop and implement the EPAs efficiently and effectively in UGME.

**Summary of Work:** A review the UGME EPA literature and an evaluation of EPA1 implementation data from our institution realized that the EPA form did not fully reflected the entrustment scale at the undergraduate level, and it is difficult to track EPA longitudinally and simultaneously keeping assessors and students engaged in the process. Comparison of EPAs in UGME and PGME in our institution were carried out and the 12 EPAs in UGME were mapped to one specialty at PGME, which allows a deeper understanding of the gaps and outcome expectations across the educational continuum. To improve the quality of EPAs in UGME, a new EPA evaluation form was created and piloted.

**Summary of Results:** The new EPA evaluation form includes 1) pre-entrustable and entrustable behaviours, which help raters to make an entrustability decision and to provide narrative feedback; 2) a refinement and expansion of the entrustability grading scale which clarifies the criteria and expectations; and 3) an alignment to PGME EPA forms in terms of structure and language. Moreover, the implement the EPAs was improved through logistical aspect (e.g., e-platform). The pilot results revealed that both the educators and students found the evaluation was more appropriate and valid than previous.

**Discussion and Conclusions:** EPAs could be operationalized for UGME if the entrustment scales were designed appropriately and aligned with PGME which could provide a continuum in medical training. EPAs in UGME would be a critical workplace assessment and contribute to ensure patient safety.

**Take-home Messages:** Aiming to improve the UGME EPA form and streamline the process, this practice not only provides the what-is and how-to to bridge the gap, but also increases transparency regarding expectations of the development of student competencies and help ensure safe and quality patient care.
SC8: SC - Clinical Teaching & the COVID-19 Pandemic 2

SC8.1 Potential of online medical interviews during clinical clerkship; Leading to reflection on traditional face-to-face interviews and recognition of importance of non-verbal communication (8760)

Date of Presentation: 29 August 2021
Time of Presentation: 12:00 to 12:15

AUTHOR(S):
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Mikako Obika, Department of General Medicine, Okayama University Hospital, Japan
Fumio Otsuka, Department of General Medicine, Okayama University Hospital, Japan

ABSTRACT:
Background: The COVID-19 pandemic forced the interruption of face-to-face clinical clerkships. Simultaneously, telemedicine spread, although there had only been few programs to educate students about this practice (Iaucu, 2020). We experimentally provided a clerkship program to medical students at Okayama University to perform initial medical online interviews using video-chat. As no studies have researched the effect of online medical interviews during clinical clerkships, this study aims to explore its benefits and limitations.

Summary of Work: We quantitatively conducted two focus group interviews of medical students who attended the online medical interview program. These interviews were undertaken, recorded, and transcribed. The transcripts were analysed based on Steps for Coding and Theorization (Otani, 2008), a sequential and thematic qualitative data analysis technique.

Summary of Results: The students felt that the original difficulty of online medical interviews lied in the inability to show an empathic attitude through facial expressions and gestures, and to sense patients physical condition and emotions from impressions. Conversely, the students realised that they had subconsciously used many of these non-verbal communication techniques in their past traditional face-to-face clinical clerkships and attempted to replicate them within the online interview. Although the students were satisfied with the opportunity to perform interviews amid a pandemic, the satisfaction was limited compared to face-to-face clerkships and they decried technical aspects of the video-chat system or web camera.

Discussion and Conclusions: The information that can be obtained online is reported to be limited if the interviewer has little experience of telemedicine (Nitzkin, 2009). Thus, acquiring experience is needed among future physicians. Through the experience of this online medical interviewing program, the students were enabled to identify its differences from face-to-face interviews. Unexpectedly, as a secondary result, they were able to recognise for themselves the importance of non-verbal communication in medical interviews with patients. Further evaluation and improvement of the program are needed to enhance its educational effectiveness.

Take-home Messages: An online medical interviewing program in undergraduate education will help medical students reflect on their own interviewing practices and realise the importance of non-verbal communication.
#SC8: SC - Clinical Teaching & the COVID-19 Pandemic 2

#SC8.2 Innovation arising from challenge - getting our students better prepared for practice (7944)

Date of Presentation: 29 August 2021
Time of Presentation: 12:15 to 12:30

AUTHOR(S):
Adrienne Torda, UNSW Sydney, Australia*

ABSTRACT:
Background: The COVID-19 pandemic affected every aspect of medical education. The pandemic forced social, educational and physical change on us more rapidly than any other trigger this century. For senior students, we had to educate and develop them more rapidly than before, with the possibility of accelerated launch into the workforce. This was in the challenging context of exclusion from traditional clinical learning environments. It was in this environment that we developed and delivered an online Preparation for Practice curriculum for senior medical students that would prepare them for clinical practice in a complex and rapidly changing clinical environment.

Summary of Work: To focus on the key aspects of a Preparation to Practice curriculum we partnered with recent medical graduates and used previous surveys of skill readiness to identify the major areas of utility for students. Content was developed and delivered using 3 online approaches: a condensed e-workshop, an innovative interactive online learning platform and ongoing back to base online learning sessions triggered by student-driven topics.

Summary of Results: Student engagement was high. Likert scale ratings averaged above 4.5/5 in relation to online activities being well organised, relevant, practical and identifying skills that they needed to learn. They particularly valued learning activities that focussed on workplace organisation, time management, physical and mental well-being and management of deteriorating patients. In comparison to face to face learning, they found online learning to be more efficient, engaging and flexible. Knowledge gains were no different to historical cohorts.

Discussion and Conclusions: This approach to complement clinical learning was highly successful and has built resilience into the medical program. This method of teaching is flexible, inclusive and uses latest educational pedagogy and design.

Take-home Messages: • Challenge prompts innovation and creativity, which ultimately allows us to improve our educational offerings and builds resilience into our programs. • Rapid development, evaluation and responsiveness are key to developing high quality educational assets. • Online learning has many benefits (including flexibility, inclusivity and rapid adaptability) which make it very complementary to clinical teaching.
#SC8: SC - Clinical Teaching & the COVID-19 Pandemic 2

#SC8.3 The COVID e-lective: An innovative educational response to the Global Pandemic (8494)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:30 to 12:45

**AUTHOR(S):**  
*Janie Smith, Bond University, Australia*  
*Peter D Jones, Bond University, Australia*  
*Neelam Maheshwari, Bond University, Australia*

**ABSTRACT:**

**Background:** The COVID-19 pandemic changed the way we work, spend, live, and learn. The impact was particularly felt in the health sector where hospitals cancelled elective surgery, put on hold outpatient services, and implemented new social distancing procedures and telehealth systems, to enable hospitals to increase bed capacity. For medical students, these factors meant significant disruption to their clinical placements, remote delivery of their education, cessation of international and interstate placements, complicated by significant travel restrictions and border closures. There were concerns that final year students might be unable to graduate in 2020 due to this lack of clinical exposure.

**Summary of Work:** As a result of this disruption in late March 2020 we developed an innovative six week COVID-19 e-lective rotation, consisting of online modules, virtual clinical tutorials and a COVID project totaling the equivalent of 200 hours of work. This provided a learning opportunity for those students who were going to miss their planned clinical placement for 2020.

**Summary of Results:** An evaluation was undertaken that found it to be very successful in meeting the students learning needs and alleviating concerns about disrupted placements. The impact of COVID-19 on interstate and international clinical placements continues to be felt in 2021. The rotation has been revised and is being undertaken by all Year 4 students to help expand and manage available clinical placement opportunities during 2021.

**Discussion and Conclusions:** This paper describes the COVID 19 e-lective, its innovation, challenges, outcomes, and its future in the medical curriculum. This unique experience can be replicated at other institutions, amidst the ongoing natural evolution of the pandemic.

**Take-home Messages:** Innovative solutions can be found in the middle of a pandemic to ensure medical students can meet the clinical requirements of their program.
#SC8: SC - Clinical Teaching & the COVID-19 Pandemic 2

#SC8.4 Transforming traditional physiotherapy hands-on skills teaching to technology enhanced learning during the Covid-19 pandemic (8044)

Date of Presentation: 29 August 2021  
Time of Presentation: 12:45 to 13:00

AUTHOR(S):  
Helena Luginbuehl, Bern University of Applied Sciences, Department of Health Professions, Switzerland*  
Irene Koenig, Bern University of Applied Sciences, Department of Health Professions, Switzerland  
Slavko Rogan, Bern University of Applied Sciences, Department of Health Professions, Switzerland  
Angela Blasimann, Bern University of Applied Sciences, Department of Health Professions, Schweiz  
Stefan Zuber, Bern University of Applied Sciences, Department of Health Professions, Schweiz

ABSTRACT:  
Background: Traditional physiotherapy education provides on-site hands-on skills learning and training. The COVID-19 pandemic forced curriculum transformation in physiotherapy education of on-site education to technology-enhanced learning, challenging the transformation of hands-on skills teaching to so far rarely available technology-enhanced learning and its development in short time. Due to the unexpected pandemic, traditional teaching formats could not be compared with new developments in prospective trials. This narrative report outlines such a new approach facilitating hands-on skills.

Summary of Work: The Complex Decongestive Physiotherapy on-site hands-on module includes compression bandaging at the Bern University of Applied Sciences, Switzerland. Traditionally, students observe teachers and practice on peers with provided specific compression bandaging material. During the pandemic lockdown, no on-site classes took place but material for technology-enhanced learning was prepared by upgrading already available videos with verbal explanations and written comments. Somewhat later, respecting local pandemic precautionary measures minimizing infections but enabling hands-on practice not otherwise teachable, practical skills teaching restarted in pairs of students with no skills demonstrations by the teacher for the entire class. The students followed a guiding checklist on tasks watching first the instructional videos, then practicing on each other and receiving feedback by the teacher.

Summary of Results: Student feedback on the new on-site learning format revealed high student satisfaction (e.g. individual learning pace, audio-visual explanations on instructional videos, direct view on the demonstrated maneuvers, possibility to re-view and adapt the video pace, individual feedback). The former nine lessons of traditional teaching were reduced to five of technology-enhanced learning and proved very student-centered. The new format was well accepted, and the teacher rated students learned competences at a higher level.

Discussion and Conclusions: The new approach fulfilled infection precautions, student-centeredness, and shortened the on-site teaching time while achieving higher competence levels. Preparation time for high-quality videos was extensive, however adaptations and reuse are easy to achieve.

Take-home Messages: A new technology-enhanced physiotherapy education format was developed for hands-on skills learning during the pandemic. This approach achieved high student satisfaction, student centeredness, individual learning pace and high-level outcomes in shorter time. Future curriculum integration would need systematic evaluation.
#SC8: SC - Clinical Teaching & the COVID-19 Pandemic 2

#SC8.5 At the Coalface: A Mixed-methods Exploration of Students’ Perceptions on The Acceptability of Placements on COVID-19 Wards (8699)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 13:00 to 13:15

**AUTHOR(S):**  
Manimaran Jayamurthy, University of Bristol, UK*  
Rapheal Rifkin-Zybutz, University of Bristol, UK

**ABSTRACT:**

**Background:** While medical student exposure to COVID-19 has been minimised, with an increasing number of hospital beds occupied by patients with COVID-19, it was acknowledged that student may need to be placed on COVID-19 wards. This study explored student perceptions around these placements.

**Summary of Work:** We conducted a cross-sectional survey of University of Bristol clinical students with free-text and Likert scales regarding their thoughts on being placed on wards with COVID-19 positive patients (University of Bristol Ethics Committee Approval Ref. 112002). Free text questions were thematically analysed.

**Summary of Results:** Student views on acceptability (rated on a 0-10 scale) were heterogeneous (Median = 7, IQR 3.25-9, Range 0-10). Free text answers frequently identified placement on COVID-19 wards as anxiogenic. Students fears were focused on three main areas: concern about appropriate protection (adequate PPE, mask fit-testing, regular testing, and vaccination), concerns about increasing the risk to others (housemates, friends, and family) and the personal risk to themselves. There was a tension in the medical students role, with some regarding COVID-19 exposure as an unacceptable risk while others viewed it as part of the expected role of medical students as future doctors. An area of particular concern was a sense of inequality, with students feeling they were being treated both differently from other students (with nationwide bans on face-to-face teaching not applying to medical students) but without the same protection as staff, contributing to a unique feeling of isolation.

**Discussion and Conclusions:** There is an intrinsic uncertainty in medical students role as both students and budding healthcare professionals. This uncertainty has led to varying decisions being made about exposing them to COVID-19 which often left them in limbo. This has contributed to anxiety inherent in the pandemic. Our exploration of students thoughts about COVID-19 exposure show the necessity of clear communication and thought process about the medical student role. Many students showed willingness to go on COVID-19 wards if offered equal protection and the experience was voluntary.

**Take-home Messages:** Students views on placements with COVID-19 placements are heterogeneous, thus a flexible approach with clear communication is key to avoiding exacerbating pre-existing anxieties.
# SC8.6 Enhanced Evaluation of Virtual Family Practice Clinics for third year medical students in response to the Covid-19 Pandemic (9392)

Date of Presentation: 29 August 2021
Time of Presentation: 13:15 to 13:30

AUTHOR(S):
Benjamin Jackson, Sheffield Medical School, South Yorkshire, UK*
Anujeet Panesar, University of Sheffield Medical School, UK
Brigitte Delaney, University of Sheffield Medical School, UK
Mark Walker, University of Sheffield Medical School, UK

ABSTRACT:
Background: The COVID-19 pandemic led to major changes in the delivery of medical education. Many medical schools initially suspended face-to-face clinical placements. At Sheffield University, we created 24 virtual clinics to replace our Family Practice placements aspiring to a) cover the breadth of clinical material and b) create as similar experience as possible compared to an authentic placement in terms of development. We focused on: 1. Patient narrative 2. Knowledge acquisition 3. Clinical Reasoning and Communication 4. Reflection. Each virtual clinic comprised three cases delivered by watching recorded patient interviews from free resources (healthtalk.org, speaking clinically, charitable websites) or through deliberatively ambiguous descriptive scenarios. Students were then asked to review relevant published material (clinical guidelines, review papers); provided with prompts to stimulate clinical reasoning (differential diagnoses, management, communication issues); asked to reflect on the material and their responses. Nine cases (three clinics) were set weekly, each requiring around 250 words, which were not formally marked. Instead, students had weekly two-hour sessions with the same Family Practitioner to discuss points raised from their work, who also provided feedback on their engagement.

Summary of Work: An enhanced evaluation of this curriculum development is presented, comprising of additional placement evaluation questions (with free text answers) and three focus groups (two with students, one with tutors). Themes relating to the four areas along with any additional identified will be described.

Summary of Results: Iterative analysis is ongoing. Early themes identified. 1. recorded interviews provided insight into patient experience. 2. student skill-development in navigating on-line clinical fora. 3. adaptation to ambiguity within the cases presented. 4. benefits of protected time with one clinical tutor. 5. student recognition of lost opportunities for professional development.

Discussion and Conclusions: Findings will contribute to understanding of: - the impact of rapid move to online teaching for students and tutors. - whether this form of learning can meet the objectives set - the acceptability of incorporating virtual teaching resources - how to maximise learning opportunities.

Take-home Messages: Students identified potential benefits in a hybrid model of virtual and face-to-face clinical placements. These benefits should be set against opportunity cost from any reduced contact with patients (communication skills, person-centred care).
#SC9: SC - Student & Doctor Wellbeing

#SC9.1 Developing a toolkit for cultivating resilient learners (8141)

Date of Presentation: 29 August 2021
Time of Presentation: 12:00 to 12:15

AUTHOR(S):
Sarah Rennie, University of Otago, New Zealand*
Nathalie de Vries, MidCentral District Health Board, New Zealand

ABSTRACT:
Background: The progression of medical students to junior doctors is often called a transition shock as they enter stressful clinical workspaces with changing needs of patients, driven by externally set competencies. Junior doctors are often not taught how to foster their own wellbeing. Although doctors have higher levels of resilience compared to the general population, they have high levels of burnout (50% of consultants in New Zealand). Offering support to increase personal resilience doesn’t prevent burnout and concentrating efforts on improving work environments, to create an environment where resilience is fostered may be more appropriate.

Summary of Work: The goal was to develop a toolkit to foster a culture of resilient junior doctors that can be implemented in a provincial teaching hospital in New Zealand. A resilience tree model by Winkel (2018) was found to be valuable and practical for our setting. In this model the tree trunk represents the developing doctor with the root system denoting family, social and medical communities. A watering can shows institutional interventions for growth and the sun depicts the doctors aspiration and purpose which provides energy to grow towards. The storm and rain symbolise periods of adversity which shake the tree but provide water for growth. This models shows the importance of multi-faceted interventions to improve resilience. Tools for the toolkit to improve resilience include focussing on 1. the doctor themselves (e.g. mindfulness, wellbeing) 2. their supervisors and colleagues in the medical community (e.g. supervision, coaching and pastoral care) 3. the institution they work in and its values.

Summary of Results: In order to create a culture where resilience is fostered, a multi-system approach is important with tools that prioritise well-being, learning and growth needing commitment of the whole organisation and strong leadership at all levels.

Discussion and Conclusions: Hospitals should highly prioritise fostering a culture of resilient learners. The emphasis should not be on the doctor themselves to develop personal resilience, but for institutions to foster a resilient environment, with high level commitment from leadership and multifaceted interventions and tools.

Take-home Messages: To facilitate the transition from student to junior doctor, the education institutions should create an environment where resilience is fostered.
#SC9: SC - Student & Doctor Wellbeing

#SC9.2  Selfcare and Wellbeing as a Professional Competence in the Covid-19 Pandemic: Residents´ Hybrid Wellbeing Program (9043)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:15 to 12:30

**AUTHOR(S):**  
Mary Ana Cordero Diaz, Tecnologico de Monterrey, Escuela de Medicina y Ciencias de la Salud, Mexico*  
Carlos Felix Arce, Tecnologico de Monterrey, School of Medicine and Health Sciences, Mexico  
Antonio Davila Rivas, Tecnologico de Monterrey, School of Medicine and Health Sciences, Mexico  
Oscar Valencia, Tecnologico de Monterrey, School of Medicine and Health Sciences, Mexico  
Alfonso Padilla, Tecnologico de Monterrey, School of Medicine and Health Sciences, Mexico

**ABSTRACT:**  
**Background:** International studies have reported that quality in patient care and residents well-being, may suffer a detriment if a highly demanding clinical training environment is present.

**Summary of Work:** The objective of the Professionalism and Wellbeing Program for Medical Residents implemented by a university in northern Mexico is to integrate strategies for the development of wellbeing as a professional competence, with the intention of improving personal selfcare, wellbeing, and patient care.

**Summary of Results:** The program was implemented with 290 medical residents of 17 specialty programs from March 2019 and, additionally, a hybrid model was implemented due to the COVID-19 pandemic from April 2020 to date. In February 2019 and 2020, medical residents participated in the induction sessions of the Professionalism and Wellbeing Program, and at least in 3 sessions through the semester, in 2019 face-to-face, and in 2020 virtually. The chiefs and co-chiefs of residents were trained in a Workshop to help other residents in adverse situations. Among the virtual strategies we implemented an online website, an electronic form for residents’ wellbeing and mentoring follow-up, individual virtual counseling and Balint groups in Zoom. From April 2020 to January 2021, 148 residents registered their follow-up in the electronic form. The topics of greatest interest for discussion selected by the participants (n= 51) in the Balint group sessions were: emotional well-being (94.1%) and burnout syndrome (94.1%).

**Discussion and Conclusions:** During 2019 and 2020, either face-to-face or virtually, most residents participated in a session of the Wellbeing Program during an academic protected time. Most of the sessions were virtual during 2020 and more than half the residents registered the wellbeing program follow-up electronic form. These initiatives aim to strengthen the training processes of education, professionalism, and humanism as an expression of the social responsibility of the profession to contribute to residents selfcare, wellbeing, and patients care.

**Take-home Messages:** The Wellbeing Program was implemented with 290 medical residents of 17 specialty programs from March 2019 and, additionally, virtual strategies were implemented due to the health contingency of the COVID-19 pandemic from April 2020 to date.
ABSTRACT:
Background: The emergence of the COVID-19 pandemic presents an unprecedented challenge to mental health and wellbeing. Many medical students are grappling with great upheavals and facing several challenges in their education and on their career development planning. However, the impact and the consequences of the COVID-19 on medical students needs to be clearly documented and addressed.
Summary of Work: A survey of 88 questions on physical and mental health was administered in May 2020 at the Faculty of Medicine of the University of Ottawa in order to assess the appropriate supports. The respondents represent 563 medical students from the first to the fourth year of their studies at the Faculty of Medicine of the University of Ottawa's undergraduate medical program. The survey looked at 8 domains of wellness such as: physical health, academics, social support, finances, career planning, substance use, psychological or emotional health and the environment.
Summary of Results: Among the multiple categories reported, the results indicated that 16.8% of respondents believe COVID-19 has affected their mental health. Additionally, 48.8% said that their overall stress level has increased since the start of the pandemic. In addition, 40.3% of students are worried about the impact of the pandemic on their medical education. These data suggest that the mental health of medical students and the impact of the pandemic on their career plans need to be closely monitored and their concerns addressed.
Discussion and Conclusions: Many strategies are already in place to support mental health and provide career advising to medical students. In light of the COVID-19 pandemic and the changes in the delivery of the curriculum as well as the changes to the clinical experience, students needs must be taken into consideration. Despite the fact that many supports are available, the development of additional resources will provide support tailored to the unique needs of this population.
Take-home Messages: - The COVID-19 pandemic has increased the stressors of medical students - Almost 50% of medical students report increased stress due to the pandemic - Major stressors for medical students include career planning - Strategies need to be readily available by medical school to support student isolation
ABSTRACT:
Background: Physicians demonstrate low rates of help-seeking for mental distress due to perceived stigma, stress, and burnout. The Stigma of Occupational Stress Scale for Doctors (SOSS-D) is a brief standardized tool designed to measure stigma in physicians. The aim of this study was to gather validity evidence for a French version of the SOSS-D.

Summary of Work: The SOSS-D was translated into French and piloted with 12 physicians. The scale was administered to physicians at the Geneva University Hospitals. We computed descriptive statistics and internal consistency coefficients. Construct validity was analyzed using exploratory (EFA) and confirmatory factor (CFA) analyses.

Summary of Results: 323 physicians participated in the survey. The internal consistency coefficient for the French SOSS-D was .72, .55 for the personal stigma subscale, .66 for the perceived other stigma subscale, and .65 for the perceived structural stigma subscale. CFA indicated a marginal fit. EFA revealed three factors: personal, perceived other, and perceived structural stigma.

Discussion and Conclusions: Although the French version of the SOSS-D did not perform as well as the original in standard psychometric analyses, the results provide evidence of the validity and reliability of the French version of the SOSS-D indicating its suitability for use in a French-speaking physician population.

Take-home Messages: Stigma may play an important role in deciding whether or not to seek treatment for burnout. Screening trainees for their stigma towards burnout may help to identify perceptions and may contribute to prevention strategies for burnout.
#SC9: SC - Student & Doctor Wellbeing

#SC9.5 Wellness Curriculum Framework for Canadian Undergraduate Medical Education (8146)

Date of Presentation: 29 August 2021
Time of Presentation: 13:00 to 13:15

AUTHOR(S):
Dax Bourcier, Université de Sherbrooke, Canada*
Rena Far, University of Calgary, Canada
Luas King, University of Saskatchewan, Canada
George Cai, University of Manitoba, Canada
Joanna Mader, Dalhousie University, Canada
Maggie Xiao, University of Alberta, Canada

ABSTRACT:
Background: Individual- and systemic-level factors within the medical training environment have been linked to a significantly higher prevalence of mental illnesses in Canadian medical students than the general population. Medical faculties have responded by incorporating wellness content into their programs. There is currently no available framework that further defines the Royal College of Physicians and Surgeons of Canada (RCPSC) wellness competencies to guide wellness curriculum implementation in Canadian medical education. Training healthier physicians today will optimize the productivity and quality of services delivered to the population of tomorrow.

Summary of Work: The Wellness Curriculum Task Force, of the Canadian Federation of Medical Students, adapted Thomas et al.'s six-step approach to medical curriculum development to develop an evidence-based Wellness Curriculum Framework (WCF). A needs analysis led to the development of goals and objectives throughout multiple stakeholder consultations intended to incorporate wellness and administrative insight.

Summary of Results: Nine of the 15 faculties had a formal wellness curriculum with significant heterogeneity in program content and delivery. The topics of career planning, suicide prevention, and experiential learning were most important to the student representatives surveyed. The resulting WCF consisted of 16 goals, each with 2-5 high-level objectives, and was organized to align with the World Health Organizations domains of wellness and the Royal College CanMEDS physician health competencies.

Discussion and Conclusions: Wellness progress in medical education now manifests as local and national efforts to deliberately introduce these topics to learners. A national WCF will organize current evidence-based practices, allowing their local implementation to fully complement the Canadian accreditation standards, and align with the RCPSCs wellness competencies. Upcoming efforts will focus on measuring implementation outcomes of medical schools adopting the WCF. Furthermore, testing the psychometric properties of quantitative wellness scales for their correspondence with the WCF to identify relevant metrics of medical student wellness will be key. The WCF will be a valuable reference to optimize wellness programming, ensuring that future physicians are healthy and able to provide the highest quality of care to patients.

Take-home Messages: This Wellness Curriculum Framework aims to complement existing national accreditation standards and support comprehensive wellness programming for Canadian undergraduate medical education.
SC9.6 Lessons Learned and Positive Results from a Multi-Institutional Wellbeing Curriculum for Medical Students and Residents (8175)

Date of Presentation: 29 August 2021
Time of Presentation: 13:15 to 13:30

AUTHOR(S):
Chaya Prasad, Western University of Health Sciences, USA*
John Taylor, Michigan State University, USA
Nicky Beaudoin, Case Netwrok, USA
Catherine Pipas, CoreWellness, USA
Michael Witt, Arnot Ogden Medical Center, USA

ABSTRACT:
Background: Health professionals wellbeing must be addressed early in training. Rates of depression, burnout and suicide in medical students exceed those in the general population and continue to rise throughout training and into practice. COVID-19 has additionally negatively affected the wellbeing of health professionals.

Summary of Work: CoreWellness (CW), a standardized online wellbeing curriculum provided 17 self-directed modules (including resilience building, emotional intelligence, cognitive reframing, conflict resolution, mindfulness, narrative writing, leadership development). Included were 1) Facilitators Guide to reinforce skills 2) interactive simulated encounters and 3) institutional guides to help design and sustain a culture of wellbeing. Learners completed a pre- and post-survey for each module, 30 minutes long, followed by group discussions

Summary of Results: Scores for the first three modules addressing Burnout, Wellness and Resilience respectively increased significantly for both residents and medical students. Resident scores (mean, SD) increased 12% on Module 1 pre (3.43, .92) vs post (4.00, .84) (t=7.71, p<.001), 9% on Module 2 pre (3.43,.92) vs post (3.89, .82) (t=4.31, p<.001), and 13% on Module 3 pre (3.19, 1.05) vs post (3.87, .98) (t=6.82, p<0.001). Medical students had a larger increase with 22% on Module 1 pre (3.13, .73) vs post (4.24, .65) (t=18.54, p<.001), 37% on Module 2 pre (2.39, .99) vs post (4.22, .62) (t=21.95, p<.001), and 18% on Module 3 pre (2.92, .84) vs post (3.84, 1.06) (t=8.53, p<.001). 173 residents completed all 17 modules. Averaging all modules, knowledge scores increased 10% pre (3.36, 1.01) vs post (3.89, .89) (t=-17.82, p<.001). Skills scores increased 8% pre (3.43, 1.16) vs post (3.83, 1.0) (t=-10.66, p<.001). Attitude scores increased 10% pre (3.28, 1.14) vs post (3.78, 99) (t=-13.85, p<.001).

Discussion and Conclusions: Health professionals wellbeing is critical to the health of our nation. Trainees who complete online modules increased knowledge, skills and attitude around evidence-based wellbeing strategies. Learners benefited in their personal journey and a completion certificate of provided evidence of accomplishments. Program directors documented ACGME requirements

Take-home Messages: Wellbeing in the medical profession must be initiated at the learner level by incorporating wellness education into the curriculum.
#W5: Workshop 5

#W5 Using our experiences of shifting learning online to enhance future curriculum adaptions: an organizational learning perspective (7905)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:00 to 13:30

**PRESENTER(S):**  
Martin Pusic, Harvard University, USA  
Peter de Jong, Leiden University Medical Center, The Netherlands  
John Sandars, Edge Hill University Medical School, UK  
Poh Sun Goh, Yong Loo Lin School of Medicine, National University of Singapore, Singapore  
Rakesh Patel, School of Medicine, University of Nottingham, UK  
Alexandra Webb, College of Health and Medicine, Australian National University, Australia

**ABSTRACT:**

**Background:** Because of the COVID-19 pandemic, most health professions schools have had to rapidly move learning activities online. Online learning is a spectrum of modalities and technologies ranging from a 160-character Tweet to a fully immersive avatar-based clinical simulation. For some, the shift came as an increase in online use for a curriculum that already had a well-integrated online presence. For others, the shift was challenging, requiring both cultural and technological adaptations that might otherwise have been planned out over a much longer period had the disruption not accelerated the need for change. In this workshop, members of the AMEE TEL committee propose to explore with participants their experience of the COVID-induced shift to online learning, using the lens of organizational learning, a framework that describes the knowledge transfer process within an organization, especially focusing on knowledge creation, transfer and retention.

**Who Should Attend:**  
• Curriculum designers  
• Health professions educators  
• Researchers interested in organizational learning

**Structure of Workshop:**  
10 min – Overview of organizational change management frameworks relevant to online learning  
20 min – INITIAL ADAPTATIONS – Table-top exercise to explore stories of curriculum adaptations made using online learning; What problems did it solve? What problems did it create?  
15 min – Group report out to illustrate how the stories align (or do not!) to foundational change-management models.  
20 min – EVOLVING ADAPTATIONS – Table-top exercise now with an emphasis on how the initial adaptations have evolved over time. Is the difficult long-term work being tackled to leave us more resilient?  
10 min – short group reports and closure

**Intended Outcomes:** Participants will be able to:  
• Describe two research-based organizational change management frameworks  
• Apply those frameworks using the COVID-induced shift to online learning as an test case  
• Use the frameworks to generate hypotheses as to how future adaptations can be enhanced

**Level:** The workshop will capitalize on both the expertise of the TEL committee and of participating educators with a demonstrated interest in managing change involving online learning. No specific background is required. In this participatory workshop, the workshop leaders will dynamically adjust to the level and interests of the participants.
ABSTRACT:

Background: Discrimination on the basis of protected characteristics is abhorrent. In professional settings it is rarely deliberate or intentionally overt, but takes the form of unconscious bias at a personal level, and structural bias at a system level. Despite AMEE 2016, this remains an urgent issue. Diversity is improving in the medical students, inequity and lack of diversity persists on many other levels - medical school leadership, visible role models, inadvertent messaging presented through typical case presentations and medical textbooks. This results in worse academic achievement in medical school and beyond for under-represented minority (URM) students, and poorer health outcomes for URM patients. It is important that educators recognise and address discrimination through both explicit and hidden curriculum. It is increasingly recognised that a curriculum without discrimination is not the same as a curriculum that is anti-discriminative. The former continues the status quo while the latter actively addresses underlying bias and holds the promise of genuine change. We must take urgent steps to develop an anti-discrimination curriculum to produce healthcare workers who will improve the health of a diverse patient population.

Who Should Attend: Anyone interested in making their curriculum anti-discriminative.

Structure of Workshop:
Part 1: Short introduction on the impact of structural and personal discrimination on students and the patient population, with particular emphasis on race and gender. Examples of making the curriculum anti-discriminative will be described by medical educators from a diverse international panel with extensive expertise and experience in this matter.
Part 2: Interactive section with opportunity for audience to ask questions. Attendees encouraged to share their experiences and co-develop anti-discriminative curriculum ideas for their own contexts (small groups/pairs). Secondary aim will be the creation of a network of educators interested in advancing an anti-discriminative curriculum.

Intended Outcomes: 1. Explain why the curriculum needs to be anti-discriminative rather than non-discriminatory.
2. Describe anti-discriminative actions that have been successfully implemented in different healthcare education contexts.
3. Apply an anti-discriminative lens to educators’ own contexts and begin developing anti-discriminative curriculum actions.
4. Collaborate with other educators with an anti-discriminative interest in order to share challenges, solutions, and best practice.

Level: All.
#W7: Workshop 7

#W7 Increasing transparency in medical education through Open Data

Date of Presentation: 29 August 2021
Time of Presentation: 12:00-13:30

PRESENTER(S):
Niall Rundle, Portfolio Manager, Taylor & Francis, UK
Barbara Jennings, University of East Anglia, UK / MedEdPublish Advisory Board
Rebecca Grant, Head of Data & Software Publishing, F1000, UK

ABSTRACT:
Background: Transparency around the Data underpinning academic research has become a major concern for authors, institutions and funders over the last decade. The desire for Data to be Findable, Accessible, Interoperable and Reusable (FAIR) gives authors a new set of opportunities and responsibilities when publishing their research. With AMEE’s open access publishing platform MedEdPublish moving to a transparent Data policy later this year, this is the perfect opportunity to discuss Data transparency in the context of medical education research. We will cover what Data means in medical education, the reasons why Data transparency is important and how authors can share their Data effectively, transparently and safely.

Who Should Attend: This session will be suitable for any researcher, student or educator interested in learning more about Data transparency and how to apply these methods to their own work.

Structure of Workshop: The workshop will be based around a series of presentations from Niall Rundle (Portfolio Manager, Taylor & Francis), Barbara Jennings (MedEdPublish Advisory Board) and Rebecca Grant (Head of Data & Software Publishing, F1000). There will be a breakout session to discuss the challenges and concerns of participants around Data sharing, and extensive time for questions to the panel.

Intended Outcomes: Participants should leave the session with an understanding of the importance and value of Data in medical education research, as well as the tools to better share their own data.

Level: Introductory
Date of Presentation: 29 August 2021
Time of Presentation: 14:00 to 15:00

Dylan Wiliam, Emeritus Professor of Educational Assessment at University College London, UK

Summary: Over the last two decades there have been increasing calls for medical education to become more ‘evidence-based’ and in particular, to focus on “what works”. However, in medical education, “what works” generally the wrong question because just about everything works somewhere and nothing works everywhere. The relevant question is, “under what circumstances does this work” which is why educators need to be critical consumers of educational research. Specifically, the use of research to improve medical education should address four central questions: Does this solve a problem we have? How much extra achievement will we get? How much will it cost? Will it work here? In this talk Dylan Wiliam will show how these four questions provide a focus for thinking about curriculum, pedagogy, assessment and management, and allow educators to address the trade-offs that are inherent in medical education in a principled, rather than an ad hoc, way.

Biography: After a first degree in mathematics and physics, and one year teaching in a private school, Dylan taught in inner-city schools in London for seven years. In 1984 he joined Chelsea College, University of London, which later merged with King’s College London. From 1996 to 2001 he was the Dean of the School of Education at King’s, and from 2001 to 2003, Assistant Principal of the College. In 2003 he moved to the USA, as Senior Research Director at the Educational Testing Service in Princeton, NJ. From 2006 to 2010 he was Deputy Director of the Institute of Education, University of London. Over the last 15 years, his academic work has focused on the use of assessment to support learning (sometimes called formative assessment). He now works with groups of teachers all over the world on developing formative assessment practices.

Dylan will give Meet the Expert sessions at the following times:
Sunday 29 August: 1600-1630
Sunday 29 August: 2000-2030
# FR3: Fringe 3

**FR3.1 Rotterdam 2059: Mi have een droom - boarding a poetic time travel machine for the sake of medical practice and education (9824)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 15:00 to 15:20

**AUTHOR(S):**  
Sven Schaepkens, Erasmus Medical Center, GP specialty training department, The Netherlands*

**ABSTRACT:**  
Background: Mi have een droom is the dazzling opening line from the famous laud to the city Rotterdam, written by the Dutch poet Ramsey Nasr with Palestinian roots. The protagonist in the poem is an older man; a born and raised Rotterdamer who in the year 2059 speaks passionately and melancholically about his beloved Rotterdam. A city that changed so much over the years; a Rotterdam that is no longer the city he once knew when he was younger. The poetic monologue is completely written in a rhythmic slang of 2059, which deeply confuses and entices its audience. In this fringe, Sven will take you to Rotterdam in 2059 and listen to this Rotterdamer, and take a look at a past that we currently live through. In short, Sven invites you to enter Nasr's poetic time travel machine, spurring our imagination to question, broaden and perhaps shift our contemporary perspective on current medical (educational) practices.
#FR3: Fringe 3

#FR3.2 The Truth shall set you free! (9819)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 15:20 to 15:40

**AUTHOR(S):**  
Noor-i-Kiran Naeem, Aziz Fatimah Medical and Dental College, Pakistan*

**ABSTRACT:**  
**Background:** Taking the lessons from the movie The Matrix, participants will understand basic philosophical principles that they need to acquire during their journey in medical education. There will be chills, thrills, dramas, adventures, suspense and what not! The presenter will ask the participants to walk through the different levels of the matrix as a part of professional identity formation in undergraduate medical education. Let the truth set you free!
#S5: Symposium 5

## Planetary health and education for sustainable healthcare: We’re going this way (7491)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:00 to 17:30

**PRESENTER(S):**  
SanYuMay Tun, Imperial College London, UK  
Rhys Jones, University of Auckland, New Zealand  
Teddie Potter, School of Nursing, University of Minnesota, USA  
Enrique Barros, World Organization of Family Doctors WONCA, Brazil  
Karly Hampshire, University of California, San Francisco School of Medicine, USA  
Hannah Chase, University of Oxford, UK

**Summary:** This international and transprofessional exploration of advances in Education for Sustainable Healthcare (ESH) comes at a time of increasing global recognition, including through the Glasgow COP26 agenda, that climate disruption and ecological breakdown harm health. The AMEE Consensus Statement on Planetary Health and ESH published in early 2021 laid out the groundwork for why, what and how health professionals education should integrate new learning so that practitioners are equipped to reduce the adverse health consequences of global environmental change, and change systems of healthcare delivery to minimise environmental degradation. After presentations from experts ranging from professors to students who are leading change in the teaching of Planetary Health - namely the understanding that human health depends on the health of the planet - delegates will be encouraged to ask questions and discuss their views.

**What participants will gain:** An understanding of how health professions education is contributing to the rapidly evolving worldwide response to protect the health of all life, including our own and that of our patients.

**Who should participate:** This symposium will interest any educator, clinician, administrator, student or patient who is concerned about the climate and ecological crisis and interested in how medical education around the world is equipping health professionals to address this crisis.
#S6: Symposium 6

#S6 Transforming medical education for the 21st century in low and middle income countries: Rwanda and Vietnam experience (7583)

Date of Presentation: 29 August 2021
Time of Presentation: 16:00 to 17:30

PRESENTER(S):
David Duong, Harvard Medical School, USA
Tuan Tran, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam
Abebe Bekele, University of Global Health Equity, Rwanda
Joseph Rhatigan, Brigham and Women’s Hospital, USA
Todd Pollack, Partnership for Health Advancement in Vietnam, Vietnam
Lisa Cosimi, Brigham and Women’s Hospital, USA

Summary: 10 years after the publication of the landmark Lancet Commission’s report on Health Professional Education in the 21st Century, the third wave of systems based reforms, driven by competencies, is still limited in many LMICs. Indeed, no one country has all medical schools implementing the third generation of medical education. Our symposia will explore how Vietnam and Rwanda, both resource-limited countries, have implemented the third wave of curriculum reform, emphasizing patient and population centredness, competency-based curriculum, inter-professional and team-based education, IT-empowered learning, and policy and management leadership skills. We will highlight the common challenges and opportunities experienced by these two countries, offering lessons for medical education reformers in similar contexts. Additionally, our symposia will underscore the importance of partnerships and multi-stakeholder engagement to enable and sustain medical education reform.

What participants will gain: Participants will be introduced to the process of medical education reform in two LMIC countries, including the initiation, implementation and sustaining of the reform process. Additionally, novel partnerships which enable medical education reform will be discussed.

Who should participate: Faculty and university leadership invested in medical education reform in low-and-middle income countries.
#RP3.1 Accreditation in Canadian postgraduate medical training programs: An analysis of accreditation standards and their ability to predict accreditation outcomes (7806)

Date of Presentation: 29 August 2021
Time of Presentation: 16:00 to 16:20

AUTHOR(S):
Timothy Dalseg, University of Toronto, Canada*
Ashley Ronson, The Royal College of Physicians and Surgeons of Canada, Canada
Sarah Taber, The Royal College of Physicians and Surgeons of Canada, Canada
Curtis Lee, The University of Newcastle, Australia
Tara Phillips, The Royal College of Physicians and Surgeons of Canada, Canada
Jason Frank, The Royal College of Physicians and Surgeons of Canada, Canada

ABSTRACT:
Introduction: Educational accreditation is a critical function in any health professions education system. However, the paucity of research in accreditation undermines validity arguments and impairs system improvements. We sought to characterize the relationship between the scoring of accreditation standards and program accreditation outcomes in a large multi-decade collection of Canadian post-graduate medical education program reviews.

Methods: This quantitative study uses data from Royal College of Physicians and Surgeons of Canada (RCPSC) postgraduate medical specialty accreditation reviews conducted between January 2003 and November 2014. Data was collected from accreditation committee transmittal letters sent to programs that outlined final accreditation status decisions, the cited accreditation standards that the program had accomplished and been deemed a particular strength, as well as any cited accreditation standards that the program had not accomplished and therefore had been deemed a weakness. Based on the data collected, basic descriptive statistics including means and frequency counts were tabulated to identify the most commonly cited standards. To determine the effect of weaknesses reported on accreditation outcomes, and to ultimately formulate a predictive model, a cumulative odds ordinal logistic regression with proportional odds was utilized.

Results: From 1468 accreditation reviews, 14,818 accreditation standard citations were collected; 6189 (41.8%) were cited as weaknesses, while 8629 (58.2%) were cited as strengths. A total of 75 distinct RCPSC specialties, from 17 universities were represented in these accreditation outcomes. The most commonly cited accreditation standards as both weaknesses and strengths were calculated for each of the five categories of accreditation outcome. For programs receiving any of the three most favourable accreditation outcomes (regular review, internal review or progress report), the weakness cited with greatest frequency involved failing to possess an evaluation system based on objectives (B6.1). For programs receiving the less favourable status of external review, the most commonly cited weakness involved a compromised service to education balance (B3.5). Finally, programs awarded a status of intent to withdraw accreditation were most commonly cited the standard requiring an environment free from intimidation, harassment and abuse (B3.9). In comparison, all accreditation outcomes other than notice of intent to withdraw accreditation shared the same most commonly cited strength which required an appropriately qualified program director with time and resources to administer the program (B1.1). The most commonly cited strength for programs receiving the outcome of intent to withdraw accreditation ensured that there were adequate patients or specimens to satisfy the educational demands of the program (B4.2). Ultimately, 18 of 129 standards were found to be significantly associated with an unfavourable outcome (any outcome other than accreditation with follow-up at next regular review). Using these variables a model was created that predicted 54.3% of those programs accredited with notice of intent to withdraw, 69.4% of those accredited programs with external review, and 80.5% of those programs accredited with internal review/progress report.

Discussion and Conclusions: The accreditation outcome of programs undergoing RCPSC accreditation review can be predicted based upon cited standards. The results contribute to the validity evidence for
accreditation and will be used to strengthen accreditation system design through the creation of more objective, evidence-informed accreditation processes in post-graduate medical education. The results will simultaneously benefit residency education as both systems and programs can perform targeted quality improvement to advance their curriculum and educational processes. Additional reflection upon the results suggests an opportunity to apply complexity theory and consider accreditation as a complex system. Based on this classification, future research should consider the opportunity to understand additional unaccounted variables that influence accreditation outcome and by consequence, should contemplate novel evaluation approaches.
#RP3: Research Paper - Setting standards for institutions and individuals

#RP3.2 A novel standard-setting method based on Facilities (7739)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:20 to 16:40

**AUTHOR(S):**  
John McLachlan, University of Central Lancashire, UK*  
Weller Bridget, University of Central Lancashire, UK  
Alex Robertson, Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust, UK  
Marina Sawdon, University of Sunderland, UK

**ABSTRACT:**

**Introduction:** Standard setting is one of the most challenging aspects of assessment in high-stakes healthcare settings. The Angoff methodology is widely used, but poses a number of challenges, including conceptualisation of the just-passing candidate, and the time-cost of implementing the method. Cohen methodologies are inexpensive and rapid but rely on the performance of a small number of candidates. A new method of standard setting, based on every candidate and every item, would be valuable.

We hypothesised that Borderline candidates would score the same as passing candidates on one-best-of-five MCQ items with very high and very low Facility. That is, if the Facility is 100%, then all candidates answered correctly, and if Facility is 20% all candidates answered at random. Between these two points the Borderline candidates scores would represent a curvilinear distribution.

**Methods:** We identified Borderline candidates by reviewing their performance across all assessments in an academic year in one medical school. We plotted the item scores of the Borderline candidates in comparison with Facility for the whole cohort and fitted curves to the resulting distributions. A variety of criteria for classifying candidates as Borderline were explored.

**Results:** We observed a strong curvilinear relationship between Borderline candidates and the whole cohort. This relationship was well described by an exponential of the form \( y \approx C.e^{Fx} \) where \( y \) is the Facility of Borderline candidates on that Item, \( x \) is the observed Item Facility of the whole cohort, and \( C \) and \( F \) are constants.

Surprisingly, we found that \( C \) and \( F \) had very similar values under a number of different conditions. Using the typical values for \( C \) and \( F \) and the observed cohort facility, we could predict the probable Facility for Borderline candidates over the test, in other words, the cut score for Borderline candidates.

**Discussion and Conclusions:** This method of standard setting could be used as the sole method for low stakes assessments, in circumstances where Cohen methods are currently used. We believe it is superior to Cohen methods in these circumstances, because it is based on every candidate and every item, rather than solely on the score of an individual candidate. However, we also believe the method could be used in high stakes assessment, where an individual item has a very different Facility from that calculated by the Angoff method (in other words, where the Angoff method has failed. The exponential equation could then be used to calculate an appropriate score for that item alone. The method is simple, rapid and inexpensive to implement, and does not require mathematical expertise to execute. An Excel spreadsheet with the equation already provided is available from the authors.

‘RP3.3 How does national culture influence international faculty development programs? (7632)

Date of Presentation: 29 August 2021
Time of Presentation: 16:40 to 17:00

AUTHOR(S):
Sara Mortaz Hejri, McGill University, Canada*
Rashmi Vyas, FAIMER, USA
William Burdick, USA
Yvonne Steinert, McGill University, Canada

ABSTRACT:
Introduction: The number of international faculty development programs (IFDPs) is growing, and many studies have reported positive outcomes (1). However, IFDPs can also face challenges due to the cultural differences of participants who come from various countries (2). Our literature review revealed that little is currently known about how participants may feel or behave when facing unfamiliar cultural values. In this study, we aimed to identify the types of cultural differences that might be experienced in an IFDP and investigate the potential influences of these differences on teaching and learning.

Methods: In this qualitative study, we conducted semi-structured interviews with 15 fellows and 5 faculty members, from 12 different countries, who participated in the FAIMER Fellowship from 2014 to 2019. The FAIMER Fellowship is composed of two onsite sessions in Philadelphia and a series of online sessions over two years. Fellows are also required to implement an education innovation project in their home countries. To recruit participants, introduction e-mails were sent by WB and RV, followed by a detailed invitation from SMH and YS. We purposefully sampled participants to ensure heterogeneity in gender, nationality, disciplinary background, and cohort year. The interviews were audio-recorded and transcribed verbatim. We used inductive thematic analysis and met regularly to review and refine the emerging codes and themes.

Results: Although participants approached the notion of culture with caution to avoid generalizations or oversimplification, they stated that cultural differences were evident at different stages during their Fellowship. The perceived cultural differences included body gestures, facial expressions, eye contact, hierarchy, and opinion expression.

We also identified three themes related to the influences of these differences on teaching and learning in faculty development:
1) Not a barrier to learning, but a bridge to higher level outcomes: FAIMER fellows believed that the cultural differences did not, for the most part, hinder their learning. They were highly motivated, and their fresh "mindset" helped them understand and respect new experiences and achieve higher-level outcomes.
2) Adaptation, modification, and mediation in response to unease and uncertainty: Certain cultural differences (e.g., a lack of eye contact, holding back opinions) were sometimes challenging and were addressed using three different approaches: adaptation to the new situation, modification of the usual practices to reach a compromise, and mediation, where another person acted as a link to bring about mutual understanding.
3) Mitigation by "organizational" and "professional" cultures: Fellows said that FAIMER's organizational culture was safe and one in which their cultural diversity was acknowledged and addressed appropriately. Additionally, all participants shared similar interests and values as health professions educators which enabled them to focus on similarities.

Discussion and Conclusions: A number of the cultural differences could be mapped onto theoretical dimensions of national culture, such as power distance, collectivism/individualism, and short/long-term orientation (3,4). Interestingly, those differences did not seem to be a barrier to learning and while we noted that certain differences caused subtle challenges, they were often managed constructively to avoid tension. Our findings were situated in specific organizational and professional cultures that sometimes overrode cultural differences. This study suggests several implications for future practice and research. It is recommended that IFDPs address cultural diversity by establishing specific ground rules, devoting time to
the sharing of personal stories, and talking explicitly about cultural differences. We encourage future researchers to look at IFDPs in home settings. Using observational methods may provide additional insights into the influence of culture on teaching and learning.

References:
#EP3: ePoster - Student & Trainee Wellbeing

#EP3.1 An Integrated Model for the Development of Individual Subjective Well-Being (7460)

**Date of Session:** 29 August 2021  
**Time of Session:** 16:00 to 17:30

**AUTHOR(S):**  
Patrick Corr, George Washington University, USA*

**ABSTRACT:**

**Background:** I launched a study during the 2019-20 academic year seeking to understand how undergraduates develop their subjective well-being. Twelve participants described their understanding of subjective well-being and how their lived experiences, external factors, and internal attributes contributed to their sense of wellness.

**Summary of Work:** The study utilized qualitative data collection methods consistent with grounded theory, including questionnaire responses and interviews. The questionnaire gathered demographic information and information related to their experiences on campus, in the community in which they live, and to self-assess their well-being. The foundation of this research was grounded in immersive interviews. Interviews were semi-structured and questions were broad and open ended, designed to ask the participants to reflect on their experiences of daily life and to allow the participants to do much of the talking.

**Summary of Results:** This model was describes the developmental processes of undergraduate students with regard to their subjective emotional well-being. This model incorporates five themes that emerged during this study and provides a roadmap for understanding student development. These themes include: 1) the shared understanding of subjective well-being as an internal construct; 2) the impact of life transition on well-being; 3) how role ambiguity leads to greater instances of psychological discomfort; 4) the prevalence of role burden among students; 5) the positive impact that systems of support have on overall subjective well-being.

**Discussion and Conclusions:** There will be some variability in the application of the model of subjective well-being based on individual experiences, identity salience, psychopathologies, socioeconomic status, and other social determinants of health. In short, the model presented in this study may need to be adapted for others. Rather than claim broad generalizability for the model, I encourage individuals to see this as a dynamic tool.

**Take-home Messages:** The development of individual subjective well-being is unique and can be significantly impacted by systems of supports. These systems of support can act as a filtering mechanism between sources of distress and an individuals sense of well-being. Institutions of education are well places to provides support mechanisms to students, especially during times of change or disruption, and may use this model to understand the independent and dependent elements impacting well-being.
#EP3: ePoster - Student & Trainee Wellbeing

#EP3.2 Wellbeing and support-seeking in undergraduate medical students (8801)

**Date of Session:** 29 August 2021  
**Time of Session:** 16:00 to 17:30

**AUTHOR(S):**  
Julie Chen, The University of Hong Kong, Hong Kong*  
Weng-Yee Chin, The University of Hong Kong, Hong Kong  
Joyce Pui Yan Tsang, The University of Hong Kong, Hong Kong  
Chak Sing Lau, The University of Hong Kong, Hong Kong

**ABSTRACT:**

**Background:** The traditionally demanding medical curriculum is known to cause stress and impair student wellbeing. Despite their high risk of psychological distress, medical students tend to avoid seeking help due to stigma and fear of academic repercussions or adverse impact on career prospects. The aim of this study was to determine the relationship between wellbeing status and support-seeking thoughts and behaviors among undergraduate medical students in Hong Kong.

**Summary of Work:** The data were collected from a 6-year longitudinal cohort study of medical students followed from admission (2014) to graduation. Students completed annual questionnaires during face-to-face mandatory teaching sessions or online if necessary. Instruments used included Perceived Stress Scale (PSS-10) to measure stress and World Health Organization Quality of Life Instruments (WHOQOL-BREF), to measure quality of life (QOL) in terms of physical, psychological, social and environmental domains. Students indicated if they had felt the need to seek support for non-academic reasons, and if they actually sought support. Data were analyzed in aggregate with descriptive statistics, chi-square, independent t-test, and ANOVA.

**Summary of Results:** The aggregated response rate was 71.3% (895/1255). 34.6% students felt the need for support and 19.8% sought support. More female students sought support compared with male (23.0% vs 14.6%). Compared with when they were in pre-clerkship studies, a larger proportion of students in the clerkship years perceived the need for support (43.1% vs 28.7%) and sought support (24.9% vs 16.3%). Perceived need for support and active support-seeking were both significantly related to higher stress and poorer QOL. However, perceived need for support combined with inaction was associated with the highest stress and poorest QOL across all domains.

**Discussion and Conclusions:** It is concerning that students who felt the need to seek support but did not do so had the worst perceived stress and QOL. Accessible, confidential mental health resources are as important as concerted efforts to create a culture that enables those who recognize they need help to feel safe in doing so.

**Take-home Messages:** Over half of students who felt the need for support did not seek support. Wellbeing was poorest in the subgroup of students who felt the need for support but did not take action.
#EP3: ePoster - Student & Trainee Wellbeing

#EP3.3 Dispositional Mindfulness & Distress: Results of self-care program in seven medical schools during the coronavirus pandemic (9515)

Date of Session: 29 August 2021  
Time of Session: 16:00 to 17:30

AUTHOR(S):  
Denisse Zuniga, Pontificia Universidad Católica de Chile, Chile*  
Guadalupe Echeverría, Pontificia Universidad Católica de Chile, Chile  
Pía Nitsche, Pontificia Universidad Católica de Chile, Chile  
Nuria Pedrals, Pontificia Universidad Católica de Chile, Chile  
Attilio Rigotti, Pontificia Universidad Católica de Chile, Chile  
Marcela Bitran, Pontificia Universidad Católica de Chile, Chile

ABSTRACT:  
**Background:** Medical students experience high levels of psychological stress during clinical training. However, most medical curricula do not teach self-care skills. The COVID-19 pandemic poses additional challenges to medical education and medical students mental health, causing increased distress. This study reports implementing a multifaceted mindfulness-based self-care program in seven schools core medical curriculum; additionally, it documents its impact on students distress, dispositional mindfulness, and well-being.

**Summary of Work:** 500 fourth-year medical students of seven medical schools attended the online program as part of a mandatory course from April to May 2021, during the final of the first year of COVID-19 in Chile. They were evaluated using validated tests before and immediately after the program. The measures included burnout, dispositional mindfulness, self-compassion, perceived stress, traumatic stress reactions, general well-being, resilience, and stress coping strategies. Distribution and variance tests, and factorial and regression analysis were used.

**Summary of Results:** Program implementing: Five themes were developed in eight weeks through synchronous and asynchronous sessions. Eighty tutors were trained. Pre-post evaluation: Burnout prevalence decreased, whereas dispositional mindfulness and increased. Burnout reduction was mostly due to decreased emotional exhaustion. Students reported changes in other variables in favor of their well-being. Gender differences were detected in the results.

**Discussion and Conclusions:** Therefore, a formal educational intervention teaching self-awareness and self-regulation skills can help reduce medical students distress and promote their well-being even amidst an emergency context. Future interventions should identify its crucial components, underlying psychosocial mechanisms, strengthen these skills at other curriculum levels, and assess their impact over time.

**Take-home Messages:** Medical students self-care skills need to be trained. Self-care programs should be included in healthcare professions core curricula since these skills are essential for the professionals well-being and the quality of care they provide to their patients.
#EP3: ePoster - Student & Trainee Wellbeing

#EP3.4 Engaging the Community to Drive Social Change in Medical School (9088)

Date of Session: 29 August 2021  
Time of Session: 16:00 to 17:30

AUTHOR(S):  
Samantha Lyons, University of Michigan Medical School, USA*  
Hannah Glick, University of Michigan Medical School, USA  
Catherine Corbin, University of Michigan Medical School, USA  
Beth Shrosbree, University of Michigan Medical School, USA  
Gabrielle Lacy, University of Michigan Medical School, USA  
Claire Collins, University of Michigan Medical School, USA

ABSTRACT:  
Background: Promoting community-building requires the assessment of member needs. The outreach subcommittee of the Student Diversity Council (SDC) at the University of Michigan Medical School (UMMS) ascertains its students concerns via an annual survey, which led to the development of the SDC Wellness Mini-Grant. This mini-grant helps address immediate gaps in the mental health and financial wellness of medical students, which have been exacerbated by the COVID-19 pandemic. Quarterly newsletters increase the transparency of this project and its development.

Summary of Work: The outreach subcommittee vice chair oversees two representatives: one for mental health/wellness and one for community engagement. This team formulated a needs assessment survey distributed to UMMS, exposing the urgency for additional support not historically supported by available emergency financial grants. Results determined the imperative to create a broader wellness funding opportunity and develop an associated rubric. The application is released every 3 months, with funding from the SDC and the Office of Medical Student Education.

Summary of Results: Ninety grant applications were received in the two-week window of the inaugural funding cycle for January to March 2021. In January 2021, a total of $400 dollars was awarded across 16 grantees. Awarded grants include happy lamps, therapy co-pays, and post-residency interview celebratory dinners. Students whose applications were not selected were given a spreadsheet of alternative relief funding outlets.

Discussion and Conclusions: This innovative mini-grant aims to help address acute gaps in mental health support for medical students by supporting self-identified needs with an easy application and quick turn-around funding. Future next steps involve curating sustainable funding streams, periodic review of the grading criteria and review process, and analyzing application data for identifying recurring, common student needs to engender broader school support.

Take-home Messages: The SDC Wellness Mini-Grant aims to improve student wellbeing by supporting self-identified wellness needs and minimizing barriers to mental health support.
#EP3.5 Anxiety among medical students employed in clinical setting during the COVID-19 outbreak: Results of a repeated cross-sectional study (8545)

**Date of Session:** 29 August 2021  
**Time of Session:** 16:00 to 17:30

**AUTHOR(S):**  
Milena Abbiati, UDREM, Geneva University, Switzerland*  
François Severac, University Hospital of Strasbourg, Faculty of Medicine, France  
Thierry Pelaccia, University of Strasbourg, Faculty of Medicine, France  
Jean Sibilia, University of Strasbourg, Faculty of Medicine, France

**ABSTRACT:**

**Background:** The COVID-19 pandemic has led to increased staffing for which medical students were quickly enlisted. In France, as in other countries, medical students clinical activities were at first suspended and then finally allowed on a voluntary basis despite ongoing debates. Evidence highlights the impact of previous epidemics on anxiety, but little is known about the role of clinical activity during the COVID-19 pandemic. We aimed to determine level of anxiety of medical students during the COVID-19 outbreak and to determine whether it was higher among the students who chose to return to the clinical setting, especially among first-line units. A 2018 cohort of medical student served as the baseline.

**Summary of Work:** In May 2019, 1180/1482 medical students (35% males) from Strasbourg University completed a questionnaire on anxiety (State-Trait-Anxiety-Inventory (STAI); 20 items), academic concern (3 items; 1=not-at-all to 6=extremely), employment status (0=employed; 1=employed) as well as for employed students employment sites (0=medical; 1=first-line units) and clinical experience perception (Crisis Professional and Personal Clinical Experience Rating Scale (CEPPRS); 7 items). We used t-tests for the comparative analyses; linear regressions (mean differences [MD] [95% Cis]) to examine correlates of anxiety.

**Summary of Results:** The 2020 COVID-19 cohort had higher rates of anxiety than the 2018 cohort (m=47.1(SD=13.0); m=43.1(SD=11.2), respectively). This difference was specifically observed in unemployed students (n=684, 59%). The main factors associated with anxiety were gender and academic concern for both unemployed (MD=2.9[1.0;4.8]; MD=3.9[3.3;4.6], respectively) and employed students (MD=3.3[1.0;5.7]; MD=3.7[2.8;4.5], respectively). Among employed students, employment site was not correlated with anxiety whereas clinical experience perception was (MD=0.4[-0.7;0.2]).

**Discussion and Conclusions:** Volunteering to work in the clinical setting during the COVID-19 outbreak is not a risk factor for anxiety in medical students. Instead, it is an active coping strategy as opposed to avoidance and rumination; suggesting that interventions targeting adaptive coping could be useful for preserving students mental health in such situations.

**Take-home Messages:** Regarding anxiety, there is no obstacle to mobilizing students in clinical settings, including first-line units. As long as their involvement is voluntary and they are and feel protected, this could be an opportunity to learn new skills.
#EP3: ePoster - Student & Trainee Wellbeing

#EP3.6 Reflection on Professional Identity: A Novel Way to Support Resident Wellness (8057)

**Date of Session:** 29 August 2021  
**Time of Session:** 16:00 to 17:30

**AUTHOR(S):**  
Diana Toubassi, University of Toronto Department of Family & Community Medicine, Canada*  
Milena Forte, University of Toronto, Canada  
Lindsay Herzog, University of Toronto, Canada  
Michael Roberts, University of Toronto, Canada  
Carly Schenker, University of Toronto, Canada  
Erin Bearss, University of Toronto, Canada

**ABSTRACT:**

**Background:** The prevalence of depression and anxiety among medical trainees is high, with educational consequences including reduced productivity, poorer quality of care and increased medical errors. Mitigating interventions often include some form of reflective practice, although none have emphasized the role of professional identity formation, which is increasingly recognized as critical to wellness.

**Summary of Work:** A novel curriculum was designed to support resident wellness through reflection on professional identity. The curriculum spanned the 2-year Family Medicine residency and consisted of 8 2-hour sessions, each focused on a theme commensurate with the professional identity of residents at its delivery. All residents (total 50) at two academic teaching units at the University of Toronto participated. Residents were divided into small groups based on residency year and training site, and each group was facilitated by a faculty member from the alternate site. Qualitative data were collected through post-session feedback forms, as well as through resident and faculty focus groups, transcripts of which were subjected to rigorous thematic analysis using a realist evaluation framework.

**Summary of Results:** The reflective curriculum was perceived to support resident wellness. Additional findings elucidated the mechanisms at play (peer support, normalization of experiences), the importance of protecting the discussions, the critical role of facilitators and their skillsets, and the impact of participants personality traits and professional developmental stage.

**Discussion and Conclusions:** A longitudinal curriculum encouraging reflection on professional identity appears to support resident wellness. The logistical aspects of such a curriculum require extreme care, as both its structure and content are critical. Future efforts will focus on adapting the existing curriculum to other residency programs, as well as continued inquiry into the relationship between professional identity formation and wellness.

**Take-home Messages:** 1. Current efforts to maintain/improve trainee wellness often overlook the critical role of professional identity formation. 2. A postgraduate curriculum that encourages reflection on professional identity formation supports resident well-being. 3. Several mechanisms contribute to this effect, including the normalization of trainees experiences, peer support, and the role modelling of facilitators. 4. To optimize the likelihood of benefit, both the structure and content of the curriculum must be carefully crafted.
#EP3: ePoster - Student & Trainee Wellbeing

## EP3.7 Paediatric residents’ burnout in Indonesia: A national survey during pandemic era (8862)

**Date of Session:** 29 August 2021  
**Time of Session:** 16:00 to 17:30

**AUTHOR(S):**  
Annang Giri Moelyo, Department of Paediatrics, Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia  
Ardi Findyartini, Department of Medical Education, Faculty of Medicine, Universitas Indonesia, Indonesia  
Bambang Tridjaja, Department of Paediatric, Faculty of Medicine, Universitas Indonesia, Indonesia  
Aryono Hendarto, Department of Paediatric, Faculty of Medicine, Universitas Indonesia, Indonesia

**ABSTRACT:**

**Background:** A state of physical and emotional exhaustion called burnout is major concern for healthcare workers including residents. Paediatric residents took care of Covid-19 patients in uncertainty learning environment leading the prevalence of paediatric residents burnout due to Covid-19 and the risk factor related to burnout still unknown. We aimed to investigate the prevalence of burnout in paediatric residents in Indonesia during Covid-19 pandemic and to detect potential risk factors associated with burnout.

**Summary of Work:** Questionnaire-based survey using Bahasa Indonesia translation of Maslach Burnout Inventory-Human Services Survey (MBI-HSS) conducted online among 15 pediatric training institutions treating Covid-19 patients in Indonesia. Higher burnout symptoms were indicated from higher scores on the subscales. Chi-squared analysis was used to calculate association between each subscales and its association with gender, marital status, stage and institutions. One-way anova of each subscales was performed to pediatric training institutions located in Java and outer Java.

**Summary of Results:** Out of 983 respondents, the prevalence of high emotional exhaustion and high depersonalization were 28.0% and 15.8% respectively, while greater than half of respondents (493, 50.2%) had low personal accomplishment. Most respondents felt more exhausted than depersonalized. Paediatric training institution was the only significant factor associated to burnout (p < 0.05). The emotional exhaustion and depersonalization were much worse in institutions located in Java, otherwise with better personal accomplishment, than in outer Java.

**Discussion and Conclusions:** The majority of paediatric residents in Indonesia had low personal accomplishment. The emotional exhaustion and depersonalization were much worse in institutions located in Java island than in outer Java island.

**Take-home Messages:** The worst domain of burnout in Indonesia pediatric residents during pandemic was personal accomplishment. Institutions located in Java island were much worse in emotional exhaustion and depersonalization.
#EP3: ePoster - Student & Trainee Wellbeing

#EP3.8 Psychological safety protocol for telesimulation: So far, yet so close (9268)

Date of Session: 29 August 2021
Time of Session: 16:00 to 17:30

AUTHOR(S):
Frederique Gauthier, CAAHC - Université de Montréal, Canada*
Ilian Cruz-Panesso, CAAHC - Université de Montréal, Canada
Pierre Drolet, CAAHC - Université de Montréal, Canada

ABSTRACT:
Background: In-person and virtual simulations should both provide concrete experiences with the right intensity of emotions and stress to foster engagement and meaningful reflection. However, addressing participants emotional distress during telesimulations may prove challenging. Apprehensive students, feeling their psychological safety threatened, may fail to fully engage, wishing to avoid risk-taking behaviors, thus affecting learning.

Summary of Work: We designed a theory-based protocol to enhance psychological safety for undergraduate medical students participating in a six communication-based telesimulation curriculum. In each session, learners had to virtually interact with standardized patients (SPs) using the Zoom® platform and engage in communication and clinical reasoning tasks during emotionally charged scenarios pertaining to sexually transmitted infections, incest, and fear of death.

Summary of Results: Based on principles of online experiential learning, the protocol sought to establish the technical and pedagogical actions to be implemented by a team before, during and after a telesimulation. A learning contract adapted for telesimulations was also created. Instructors were trained to identify verbal and non-verbal cues suggesting students distress and to summon a backup instructor should it happen. Individual virtual rooms were set up for managing distressed students during and after simulations. SPs were asked to assist the instructors to monitor the teledebriefing while the backup instructor came in. Further debriefing aimed at team members (SPs, instructors, and Zoom® operators) led, if needed, to changes in both the telesimulation and the protocol. Effective practices for addressing emotionally distressed learners during telesimulations will be presented.

Discussion and Conclusions: We argue that telesimulations require additional considerations to ensure learners psychological safety compared to in-person sessions. Plans in case learners voluntarily disconnect or loose connection during distressing episodes need to be in place and known by all team members. The emotional fidelity of any simulation, online or not, has to allow for the level and expertise of the learners. Amongst the affordances of the telesimulation environment, learners psychological safety is paramount but can only be achieved if all team members are able to react efficiently.

Take-home Messages: Telesimulations bring safety challenges that can be overcome with the implementation of theory-based protocols guiding the actions of the whole team, not just instructors.
#SC10.1 Attitudes and intention of nursing students toward medication administration safety: The impact of simulation-based learning (8655)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:00 to 16:15

**AUTHOR(S):**  
Rinat Avraham, Ben-Gurion University of the Negev, Israel*  
Einat Kimhi, Ben-Gurion University of the Negev, Israel  
Vlada Shor, Ben-Gurion University of the Negev, Israel

**ABSTRACT:**

**Background:** Safe medication administration is an essential objective of nursing care. While medication errors prevalence is high results in evitable medical costs and patients harm, medication errors reported by nurses and nursing students is very low. The objective of the study was to explore the influence of safe medication administration simulation on nursing students perceptions towards- and intention to report medication errors.

**Summary of Work:** Third year nursing students (n=65) participated in a scenario-based simulation focused on medication administration. Medication errors were implemented within the scenario. Following the simulation participants participated in a debriefing and discussion of the simulation, which was focused on factors and consequences of medication errors. A pre-post questionnaire assessed participants perceptions with regard to the training program preparation, self-confidence and responsibility in reporting errors, and patients role in errors prevention, and their intention to report errors before and after the simulation.

**Summary of Results:** Following the simulation, participants felt more prepared by their training program to recognize the causes of medication errors (t=4.19, p<0.01) and had higher belief in the patients role in errors prevention (t=9.51, p<0.01). They also indicated slightly higher confidence in reporting medication errors, but with borderline significance (t=1.90, p=0.06). In addition, the belief that most errors result from careless nurses decreased following the simulation (t=2.51, p=0.015). Post simulation intention to report errors was positively associated with participants perceptions of being prepared by their training program (r=0.43, p<0.01), responsibility of reporting errors (r=0.25, p=0.05), and belief of patients role in errors prevention (r=0.31, p=0.01).

**Discussion and Conclusions:** Training nursing students to identify medication errors using simulation scenario is an optional teaching method that influences students perceptions towards errors causes and ways to reduce errors, as well as enhance confidence and intention in reporting errors. Further research is needed to investigate the influence of safe medication administration simulation on registered nurses perceptions and intentions, and to evaluate its long-term results in reducing morbidity and potential costs associated with medication errors.

**Take-home Messages:** Simulation is an effective method to teach students medication errors causes and prevention, and can increase intention to report errors.
#SC10: SC - Patient Safety

#SC10.2 Exploring patient experiences in student encounters - a contribution to student learning (9136)

Date of Presentation: 29 August 2021
Time of Presentation: 16:15 to 16:30

AUTHOR(S):
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ABSTRACT:
Background: Medical students need to experience responsibility in authentic clinical patient encounters to develop professionally. To support these learning opportunities, a balance between student autonomy and patient safety is needed. Students’ experiences of learning in authentic patient encounters are well described, but there is a lack of research on how patients experience the participation in student encounters. Insight into the patient perspective could add valuable knowledge about the patient role related to student learning in clinical encounters with supervisor back-up.

Summary of Work: The aim was to understand how patients experience participation in student encounters. Qualitative phone interviews with ten cardiac surgery patients, who had consented to have two extra post surgery consultations in a student outpatient clinic, were analyzed through systematic text condensation. The semi-structured interview guide included questions about reasons for and experiences of being part of a teaching situation.

Summary of Results: All patients experienced satisfactory treatment (medical safety) in student encounters with supervisor back-up. They also shared a motivation to help students learn (altruism), though if patients had complications, they valued medical safety over altruism. Students were perceived as professionals and this related to student ability to ask for help. Patients’ feeling of safety was connected to the indirect and direct back-up role of the supervisor.

Discussion and Conclusions: The patient experiences reflected the dual purpose of student autonomy and patient safety. Patients accepted that students had the initiative to call for help in parts of the consultation, where the supervisor was not present. This type of supervision could be called student-driven, and aligns with student-led learning. Another type of supervision was experienced when the supervisor was present in the room; this could be described as supervisor-driven supervision and resemble controlling teaching behaviour. This represents a dilemma in student-patient encounters: both student- and supervisor-driven supervision are needed, but for different purposes. Dividing the student encounter into sequences with indirect and direct supervision is one way to balance student autonomy and patient safety.

Take-home Messages: • Severely ill patients can be a highly motivated resource for student learning
• Dividing consultations into sequences can balance student autonomy and patient safety
#SC10.3 Interprofessional feedback in health professions education: The Westerveld framework for giving and using feedback in interprofessional dialogues* (8848)

*The framework has been named in honour of Tineke Westerveld who sadly passed away in December 2020.

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:30 to 16:45

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Renske de Kleijn, UMC Utrecht, The Netherlands  
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Tineke Westerveld, UMC Utrecht, The Netherlands

**ABSTRACT:**  
**Background:** To safeguard quality and safety in modern day healthcare, people with different professional backgrounds need to communicate with, and learn from one another effectively. A specific type of this communication is interprofessional feedback dialogue. However, interprofessional education and feedback so far have been quite separate fields of study. The aim of this study is to develop principles for interprofessional feedback, to support healthcare education on giving and using feedback in an interprofessional context.

**Summary of Work:** A critical review of the literature on feedback and interprofessional education, and discussions with local experts resulted in an initial framework of criteria, principles and interprofessional additions. This was input for a two-round Delphi study with international, leading scholars in the fields of feedback (n=5) and interprofessional education (n=5). These experts were presented with the initial framework and reported their individual (dis)agreement on its content and structure. They also provided suggestions for improvement.

**Summary of Results:** Experts showed increased agreement and consensus over the rounds. The Delphi study resulted in a framework, called the Westerveld framework, structured around seven criteria: Open and respectful; Relevant; Timely; Dialogical; Responsive; Sense making; and Actionable. The framework contains columns with feedback dialogue principles for givers and users, as well as columns with additions to be taken into account in an interprofessional healthcare context.

**Discussion and Conclusions:** By structuring the giver and user columns around the same criteria, the shared responsibility of participants in a feedback dialogue is emphasised. By describing feedback principles and interprofessional additions separately per criterion, (investigating) applicability to other educational contexts is facilitated. The Westerveld framework can provide guidance to teachers and students in interprofessional education, therewith contributing to both student and teacher feedback literacy.

**Take-home Messages:** Feedback dialogues in which healthcare providers communicate interprofessionally, are essential to safeguard quality and safety in modern healthcare. Efforts to develop healthcare education on giving and using feedback in interprofessional dialogues are warranted. The Westerveld framework can provide guidance for this to teachers and students in interprofessional education.
#SC10.4 Interprofessional Simulation in Undergraduate Education - Aspects of Timing and Teaming (7981)

Date of Presentation: 29 August 2021  
Time of Presentation: 16:45 to 17:00

AUTHOR(S):  
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Anna Nordin-Lundquist, Södersjukhusets Hospital, Sweden  
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Ann Langius-Eklöf, Karolinska Institutet, Sweden

ABSTRACT:  
Background: Interprofessional team training in simulated emergency scenarios is an established way to intensify training of clinical skills and to prepare student for complex clinical situations. However, the required optimal student pre-training experience is unclear, and the longitudinal perspective needs to be further investigated (consistent training groups with the same individuals) to understand if the benefit outweighs the logistic and resource challenges if implemented broadly over educational programs.

Summary of Work: A total of 56 students from the medical- (MP) and the nursing programs (NP) participated in a project with simulated emergency medical situations in interprofessional teams. Series of 3 training occasions, each with 3 high fidelity (fullscale) simulated scenarios were trained, all series with the same group of students. Students were stratified by level of pre-training experience (NP 3rd/6 semesters trained with MP 6th/11 semesters and NP 6th/6 semesters trained with MP 8th-10th / 11 semesters). For each scenario there were both communicational skills and medical learning outcomes, and the students attitudes towards interprofessional learning were assessed using a validated tool (RIPLS).

Summary of Results: All educational and communicational learning outcomes were fulfilled. All students found the longitudinal interprofessional training to be predominantly beneficiary for their learning, however students early in the educational programs tended to report a more divided opinion. In open discussion, students with more pre-training experience communicated clearly that the longitudinal design supported decision making and feeling of security. Students with less pre training experience needed more time for procedural training, and the value of the interprofessional dimension tended to be somewhat less clear for this group.

Discussion and Conclusions: Longitudinal high fidelity (or full scale) simulation is beneficiary for training of clinical skills and communication, however considering the resources needed and logistic challenges with a broad implementation (including all student) efforts should directed towards securing implementation in the later parts of the programs. Earlier in the programs, simulation with a focus on training of less complex clinical skills (uni-or interprofessional) could be a way to prepare clinically less experienced students.

Take-home Messages: Interprofessional high fidelity simulation in undergraduate education is beneficiary: the more senior students, the more value added!
#SC10: SC - Patient Safety

#SC10.5 Paediatric emergencies in primary care - Activity Theory analysis of an in-situ simulation programme leading to organisational change (8333)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 17:00 to 17:15

**AUTHOR(S):**  
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Gerry Gormley, Queens University Belfast, Northern Ireland, UK  
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**ABSTRACT:**

**Background:** Provision of emergency care is an essential part of general practice. Given their critical nature and benefits that timely interventions can confer it is important that GP practices are prepared for such eventualities. Paediatric emergencies are challenging requiring specific knowledge, skills and equipment. A narrative review of the literature showed that GPs often feel unprepared for such paediatric emergencies.

**Summary of Work:** This research aimed to explore how ISS could support organisational preparation for paediatric emergencies. Evidence from our literature review suggests in-situ simulation (ISS) training is an acceptable and feasible way of developing interprofessional skills in a primary care setting, yet more needs to be known its impact and how it achieves its effects. We completed a programme of ISS relating to primary care paediatric emergencies with a multidisciplinary team from one GP practice. First, a mocked-up simulation of a paediatric emergency took place. Recorded footage was used to inform a discussion about changes which could be implemented to improve preparedness for future similar emergencies. Session two involved a more in-depth facilitated reflection and discussion. Session three involved simulation of a different clinical case to explore if the changes had enhanced emergency response. In-depth analysis of reflective diaries, recorded simulation footage and focus group transcripts using Cultural Historical Activity Theory (CHAT) will shed light on the role of ISS in precipitating organisational change.

**Summary of Results:** Data analysis has begun and completed work would be presented at the conference.

**Discussion and Conclusions:** We aim to determine the impact, or not, of how ISS affects preparedness for managing paediatric emergencies in GP. It will offer rich insights into the emerging potential of ISS to stimulate individual and organisational change in response to highly complex, contextualised patient safety problems.

**Take-home Messages:** Existing research has evaluated the emerging potential of ISS but has been limited by outcome measures such as improved confidence of participants. This social cultural research will bring to the surface many of the nuances and contextualised factors in the complex world of GP to guide us in the best direction of providing team-based response to managing paediatric emergencies.
ABSTRACT:
Background: For demanding occupations like surgery, in which long hours, high-stakes work, and personal sacrifices are common, passion for the profession is likely paramount. This study explores trends in passion for the profession among applicants to general surgery training.

Summary of Work: Surgery applicants were invited to complete a voluntary, anonymous 12-item Passion for Surgery Index (PSI) as part of their supplementary application during the 2020-2021 residency selection season. The PSI is adapted from a generic work-related passion index and is based on the dualistic model of passion, organizing scores into harmonious passion (autonomous internalization that leads the individual to choose to pursue the profession) and consuming passion (controlled internalization that creates internal pressure to pursue the profession). Applicants completed the index on a stand-alone website which automatically generated results pertaining to overall passion, harmonious passion, and consuming passion for the surgery profession.

Summary of Results: Sixty-seven percent (524/782) of invited applicants completed the PSI. Approximately 70.4% (N=369) of these applicants reported an overall high level of passion for surgery, while 28.4% (N=149) reported a moderate level and the remaining 1.1% (N=6) reported a low level. When comparing the two different types of passion, the vast majority of applicants (93.7%; N=491) reported a high level of harmonious passion and only 6.3% (N=33) reported a moderate level of harmonious passion. The results for consuming passion were much more varied, with 41.4% (N=217) reporting a high level, 43.5% (N=228) reporting a moderate level, and 15.1% (N=79) reporting a low level of consuming passion for the profession.

Discussion and Conclusions: These results suggest that there is substantial variation in passion for the profession among those pursuing a career in surgery, with less than half of applicants reported a high level of consuming passion for surgery.

Take-home Messages: For a specialty that reports extremely high burnout and attrition, it is imperative that those pursuing this career path have the dedication and resources to persevere through training. Future work should continue to explore the motivators behind choosing a career in surgery and the extent to which each of these passion dimensions uniquely predicts job satisfaction, burnout, and attrition.
#SC11.2 Effect of Structured Cadaver Dissection on the Durability of Anatomic Learning in Surgery Residents (8243)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:15 to 16:30

**AUTHOR(S):**  
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Robert Treat, Medical College of Wisconsin, USA  
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Kellie Brown, Medical College of Wisconsin, USA  
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**ABSTRACT:**

**Background:** Anatomical knowledge (AK) is a primary competency of general surgery residency. Cadaver dissection is a tool often used to facilitate learning anatomy, however, the availability of cadavers can be limited requiring specialized labs, that are cost-prohibitive and time-restricted. This study aims to determine if utilizing a structured cadaver dissection session in a general surgery curriculum contributes to the retention of anatomical knowledge at six months, given the current national trend to shorten or eliminate cadaver learning for simulation.

**Summary of Work:** Fresh, non-fixed cadavers were utilized during our general surgery post-graduate year one (PGY1) curriculum. Over two years, 29 residents (15 categorical and 14 non-categorical) worked with a cadaver for approximately eight hours in groups of 6-7 residents with one attending facilitating the dissection. A pre-test, post-test, and six-month post-test containing 25 AK questions were administered assessing head and neck, abdominal, thoracic, extremity, and inguinal anatomy, plus basic procedural topics. Repeated measures ANOVA were generated with SPSS 26.0. Cohens d reported effect sizes.

**Summary of Results:** 27 pre-test, 26 post-test and 19 six-month post-test responses were reported. There was a statistically significant cumulative increase in the pre-/post-test scores 64.6% to 73.7% (d=1.1, p<0.002) and pre-test/six-month post-test scores 64.6% to 71.8% (d=0.9, p<0.002). There was no significant decrease between post-test/six-month post-test scores (p<0.836). Categorical resident score changes were significantly higher than the non-categorical resident scores (8.9% difference, p<0.009).

**Discussion and Conclusions:** After utilizing a structured cadaver dissection learning method in the PGY1 curriculum, all residents had an increase in AK with no significant decay at the six-month follow-up post-test for either categorical group. Therefore, using a combination of fresh cadaver dissection and in-person attending physician instruction through a structured format can increase anatomical knowledge retention. Faculty-facilitated cadaver dissection provides a valuable tool for any general surgery residency curriculum.

**Take-home Messages:** In-person cadaver dissection remains a valuable tool to support long-term anatomical knowledge acquisition. We recommend consideration of the addition of cadaver dissection to general surgery residencies for the PGY1 curriculum.
#SC11: SC - Surgery Education 2

#SC11.3 Cognitive Mapping and its Role in Surgical Resilience (8287)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:30 to 16:45

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** Resilience is foundational for performing under pressure, including surgeons that perform high-risk procedures. While professional burnout remains an area of concern within health professions, little is known about how surgeons adapt over time to the stressors inherent in error-prone surgical steps, and how that adaptation contributes to resilience and avoidance of burnout. This study focused on factors that influence a surgeon’s ability to rapidly respond and maintain a calm and focused demeanor while executing high-risk surgery.

**Summary of Work:** Using constructivist grounded theory, we conducted semi-structured interviews with a theoretical sample of twelve teaching surgeons, representing 10 different surgical specialties and a range of experience. Coded transcripts were transformed into visual schematics highlighting concepts of performance under pressure, resilience, and cognitive mapping, and the interview was modified in an iterative process. A conceptual model was developed visually depicting our main themes.

**Summary of Results:** Cognitive mapping is key to preoperative planning, enacting contingency plans to address challenges, and managing emotions during high-risk surgery. Each of these factors informs staying calm under pressure and is essential for building long-term surgical resilience. Cognitive maps allow for foresight and flexibility during high-risk procedures. Subjects demonstrated the interconnectedness between cognitive mapping and surgical resilience as a process initiated through mentorship during residency. Skills developed include personal responsibility, confidence in one’s plan, and emotional management, culminating in a culture of humility utilized in the successful performance of high-risk surgery.

**Discussion and Conclusions:** Performing high-risk surgery is contingent on cultivating specific skills necessary in developing cognitive maps rich with contingency plans that allow for flexibility under pressure. Exposure to effective mentors with experience in developing and using cognitive maps may promote protective behaviors, greater insight, and intentionality for negotiating challenges inherent to performing high-risk surgery and effective execution of complex procedures and managing stress. Surgical resilience develops over time, and experiences in residency are critical for development. Surgical residency programs should incorporate cognitive mapping into their curricula, and foster learning environments that promote successful surgical resilience.

**Take-home Messages:** Increased self-awareness, cognitive mapping, and intentionality contribute to a surgeon’s calm performance during high-risk surgery.
#SC11: SC - Surgery Education 2

#SC11.4 Delivering Human Factors and Non-Technical Skills Training Using Interactive Online Platforms in the COVID Era (8018)

Date of Presentation: 29 August 2021
Time of Presentation: 16:45 to 17:00

AUTHOR(S):  
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ABSTRACT:  
Background: Human factors (HF) and non-technical skills (NTS) training are an essential part of surgical curricula. In the COVID-19 era, they have taken on increased relevance with the heavy disruption of surgical training and education resulting in trainees working in unfamiliar environments outside their areas of expertise. With this in mind, we sought to implement an online HF and NTS course for Core Surgical Trainees, using an interactive online platform where traditionally this course has been delivered in a purely face-to-face format.

Summary of Work: A 1-day HF and NTS course was conducted online, using the Zoom platform, to a cohort of Core Surgical Trainees. The course consisted of interactive lectures, small group teaching sessions, and reflective practises written assignments. Pre- and post-course surveys were administered, evaluating the participants awareness, knowledge and skills using a 5-part Likert scale, along with a multiple-choice assessment of knowledge. Continuous variables are expressed as mean $\pm$ standard deviation (SD) with comparison using paired students t test. Statistical significance is considered for $p <0.05$.

Summary of Results: The teaching was attended by 63 participants. In the post-course results, participants self-rating of awareness and knowledge for both human factors and patient safety increased by between 10 and 20%. There was a significant increase in the mean post-course test score from 7.54 ($\pm$ 1.7) to 8.65 ($\pm$ 1.2) out of 10 ($p<0.0001$). The course overall was rated relevant and useful (weighted averages 4.4 and 4.5 respectively, out of 5).

Discussion and Conclusions: To our knowledge, this is the first time a HF/NTS course has been delivered online. This study provides evidence to support the use of interactive online platforms for the delivery of HF and NTS training in postgraduate surgical education, demonstrating increases in participants awareness, knowledge and skills, as well as positive feedback for the use of an interactive platform.

Take-home Messages: 1. In the COVID-19 era, it is possible to deliver high quality teaching through interactive online platforms. 2. Training and professional development must continue, despite the evolving pressures from COVID-19. 3. Embracing new methods of education delivery is required to sustain the postgraduate surgical curriculum.
#SC11: SC - Surgery Education 2

#SC11.5 Does undergraduate surgical teaching meet the needs of graduating doctors? (8960)

Date of Presentation: 29 August 2021
Time of Presentation: 17:00 to 17:15

AUTHOR(S):
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ABSTRACT:
Background: The Royal College of Surgeons National Undergraduate Curriculum was produced as a response to surgical underrepresentation in undergraduate teaching. Despite this, there remains a perception amongst clinicians that foundation doctors are unprepared for surgical firms. This study sought to evaluate if undergraduate experiences prepare students for surgical jobs and the contributing factors.

Summary of Work: An online questionnaire was distributed to final year medical students; this evaluated participant confidence assessing different surgical presentations, confidence in surgical skills and how these skills were attained. A sub-group of four students underwent one-to-one semi-structured interviews about their surgical experiences. These interviews expanded on their learning environment and if they felt curriculum needs were met.

Summary of Results: 97 out of 246 students (39.4%) responded to the survey. Students felt moderately confident managing surgical conditions but less so performing surgical skills. Students with an interest in a surgical career generally had more confidence in performing skills; however many reported attending extra-curricular teaching. Themes included teaching which was not uniform and resultantly feeling uncomfortable managing surgical patients, leading to avoidant behaviour. Some students felt disenfranchised due to work pressures or unwelcoming environments; the running theme was: I never felt a part of the team. However, there were examples of aspirational figures whose extra efforts inspired students: that passion made me take an interest, even if I hadn’t cared about peri-anal abscesses before!

Discussion and Conclusions: Our findings demonstrated that students felt that the RCS undergraduate curriculum was covered during the core curriculum in most part, however there was variability in the quality of learning in surgical placements. Inconsistent learning experiences were reflected in quantitative and qualitative data; impacting on students educational and ultimately, working experience. Students expressed moderate to good confidence in managing common surgical conditions but less confidence performing surgical skills. This disparity affected student confidence and made them more anxious about working on a surgical placement than on other placements.

Take-home Messages: Teaching is affected by inconsistent placement environments. Disenfranchisement is an obstacle to learning; students often feel isolated from firms. Many pursue extra-curricular teaching to achieve basic competencies; teaching failings need to be addressed.
Strategic intentionality matters: Key factors for the success of multifaceted, inclusive, relational, and longitudinal faculty and staff development

Date of Presentation: 29 August 2021
Time of Presentation: 16:00 to 16:15

AUTHOR(S):
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ABSTRACT:
Background: The need for a coordinated and intentional approach to professional and leadership development at Academic Medical Centers (AMCs) has been apparent in an era of accelerating change. Southern Illinois University School of Medicine launched the Center for Human and Organizational Potential (cHOP) in 2018 to create inclusive partnerships that unleash the potential inherent in its people and communities to learn, thrive, and excel.

Summary of Work: cHOP performed gap assessments on institutional culture and learning and subsequently designed and implemented inclusive, relational, multifaceted, and longitudinal faculty and staff development programs, incorporating the AMCs mission and goals. These included the Accelerate leadership development program for emerging to mid-career constituents, the Early Career Faculty Development program for new faculty and a series of leadership book clubs involving multiple stakeholder groups. These programs aimed to promote participants professional identity development and socialization into academic medicine.

Summary of Results: Preliminary assessments using surveys and 1:1 coaching sessions have demonstrated positive feedback from participants. The combination of synchronous and asynchronous, in-person, and virtual formatting, and the longitudinal and relational nature of the programs was seen as an impactful and successful delivery strategy.

Discussion and Conclusions: Critical factors for effective development identified in this experience include 1) intentionality in program design, 2) creating adaptive curricular structures for a changing external environment (e.g., COVID-19), 3) achieving buy-in of all key stakeholder groups through inclusive programming and proactive leadership endorsement, 4) maintaining program relevance through ongoing accountability to learners, and 5) fostering a sense of community and collegiality among cohort members and program as well as institutional leadership. When coordinated by a hub-team (e.g., cHOP) with strategic intentionality, such activities strengthen critical talents, such as faculty and staff, more effectively, thus contributing to the fulfillment of the mission of an AMC. cHOP is developing a more comprehensive assessment methodology (e.g., logic models and longitudinal surveys) to track short-, mid and long-term outcomes of the programs.

Take-home Messages: Intentional creation and systematic coordination of a professional and leadership development program that is inclusive, relational, and longitudinal is possible in the AMC setting and can effectively promote cultural identity, mission coherence, and a growth mindset in its workforce.
#SC12.2 The Muddy Waters of CME and Faculty Development: How rapid change can help us rethink collaboration between medical education and faculty development (8560)

Date of Presentation: 29 August 2021
Time of Presentation: 16:15 to 16:30

AUTHOR(S):
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Michelle Elizov, McGill University, Canada
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ABSTRACT:
Background: The COVID-19 Pandemic caused a dramatic shift towards healthcare delivery and education via telehealth. With little formal training on telehealth provided at any level, this transition was challenging. Collaboratively integrating CME and faculty development (FD) telehealth content into training sessions for learners and teachers was found to be a promising way to address the urgent needs precipitated by the pandemic.

Summary of Work: McGill Faculty Development Office and Family Medicine Department partnered during the COVID-19 pandemic to address local telehealth needs. Various tools and workshops were developed incorporating best practices in telehealth for patient care and teaching. Sessions were provided to learners and teachers alike. Using an iterative process and learner-centered approach, training materials and teaching approaches were adapted to address needs of various audiences.

Summary of Results: An online telehealth module was viewed by 432 McGill students, residents, and clinicians. Resource material posted on an open access website received 1766 visits from 1,126 unique visitors, predominately North American, but also from around the world. Six webinars were presented to clinical teachers from ENT, Surgery, Endocrinology, Obstetrics, and Family Medicine. Faculty Developments Telehealth Series reached 110 teachers from across all Schools of the Faculty.

Discussion and Conclusions: The boundaries between CME and FD are often muddy waters. When a medical system is in urgent flux, these waters become increasingly muddied as the need for training in new content and teaching skills occurs simultaneously with teachers and students learning alongside one another. This training paradigm requires a collaborative approach that is both flexible and iterative in terms of content and delivery processes as seen with the programming developed at McGill. The muddiness stirred up by the pandemic may provide some clarity on the potential benefits and opportunities of combined CME and FD. Combined activities might be more effective than either alone; something to consider even when the pandemic waters calm and mud settles.

Take-home Messages: During times of rapid change, combining CME and FD may be essential and allow for creative, adaptable and flexible learning. The use of innovative online platforms and digital tools facilitates rapid dissemination of information.
#SC12: SC - Faculty Development 2

#SC12.3 Let’s go Light a Fire.. Introducing TED Talks Principles into Health Sciences Education (8168)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:30 to 16:45

**AUTHOR(S):**  
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Jen-Fen Liang, Taipei General Hospital, Taiwan  
Gal Barak, Baylor College of Medicine, USA

**ABSTRACT:**  
**Background:** Many people globally are familiar and enjoy the TED talk format. As medical educators, our faculty development program embarked on a journey to develop clinician educators about using TED talks principles to ultimately transform their teaching approaches.

**Summary of Work:** In 2019, we enrolled 50 educators who teach a wide variety of trainees (students, nurses, residents, fellows and faculty) in TED Master Class. Working with the TED organization, we embarked upon a beta project to teach educators about TED principles. Overall, the goal of this faculty development curriculum was to inspire educators to rethink the traditional lecture format and how they are delivered. Is there a way to guide the educator to deliver information in a succinct way that leaves the learners inspired to learn more? We created a curriculum that was taught via face-to-face instruction, an app with 11 videos, and small group work. Intra-pandemic, we morphed into online instruction with emphasis on peer-mentoring circles. Finally, we held a faculty development offering entitled, TED Masterclass Showcase that played the completed videos.

**Summary of Results:** We found that faculty benefited from a multi-factorial approach to video completion, in which we used face-to-face workshops, flipped classroom teamwork, peer mentoring circles, supplemental readings, a phone app and virtual meetings.

**Discussion and Conclusions:** This novel curriculum development taught experienced faculty developers that while asynchronous faculty development can be accessible in a phone app that allowed for a self-paced teaching of TED talk principles, it is key to supplement that learning with face-to-face workshops, a faculty developer who can answer individual questions, and encouragement of the faculty to work in peer mentoring circles. This curriculum generated excitement and inspired educators to reflect upon their own teaching approaches. In the final videos, we saw decreased use of text-heavy slides, more use of effective visuals and more narrative/emotive story telling.

**Take-home Messages:** The introduction of a novel curriculum to teach faculty to reflect upon their own teaching approaches was effective. We found that a multi-factorial approach in teaching, utilizing asynchronous online videos, face-to-face workshops, on-line faculty development workshops, clear timelines to follow and a final project presentation supported the faculty to complete the videos.
#SC12: SC - Faculty Development 2

#SC12.4 Findings from the Implementation of a R2C2 Model of Feedback that Considers Intersectionality for Psychiatry Resident Supervisors within a Competency-based Medical Education Framework (7979)

Date of Presentation: 29 August 2021
Time of Presentation: 16:45 to 17:00

AUTHOR(S):
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ABSTRACT:
Background: Studies demonstrate feedback in clinical settings often lack the ingredients necessary to support learner progression. This assumes greater significance within a competency-based medical education (CBME) framework, where structured feedback and coaching play an important role in residents progress. R2C2 is an evidence-based model of feedback comprising of four iterative phases: building relationship, exploring reactions, exploring content, coaching. To address the need for structure feedback, this study describes the implementation of R2C2 model in a CBME context. In this study, supervisors were encouraged to reflect on power dynamics within the learning relationship.

Summary of Work: Further to training sessions from content experts, 15 supervisors used R2C2 model of feedback with residents in their longitudinal ambulatory rotation. Support from education leaders was available to solidify learning. Semi-structured interviews were conducted with supervisors (n=10) to understand their experience of using the model. This study is strongly rooted in implementation science theories. The Consolidated Framework for Implementation Research (CFIR) was used to identify factors that influence implementation and effectiveness of R2C2.

Summary of Results: Preliminary results identified four themes. First, participants adherence to R2C2 focused on the first stage of the model building relationship. Second, participants expressed positive attitudes toward the model and believed it helped to structure feedback. Third, participants shared they needed to understand the model more before application. They highlighted the need for faculty development on R2C2 using a variety of teaching modalities (ie. role play and videos). Fourth, participants were mixed in terms of the impact of intersectionality on the learning relationship.

Discussion and Conclusions: This pilot study provides promising insights on feedback and coaching in resident education that considers equity and power-dynamics. Supervisors experiences of the R2C2 model offers guidance on the implementation supports needed to sustain meaningful feedback. This study shows the R2C2 model can be useful in virtual feedback. Future implementation efforts should focus on faculty development and incorporate resident experience.

Take-home Messages: This study will be of interest to supervisors or other health professions education leaders who aim to implement virtual structured feedback practices within a CBME framework that includes consideration of equity and power-dynamics.
#SC12.5 Ten years of global faculty development in educational scholarship through the IAMSE Medical Educator Fellowship (9800)

Date of Presentation: 29 August 2021
Time of Presentation: 17:00 to 17:15

AUTHOR(S):
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Amber Heck, Texas Christian University, USA
Sateesh Arja, Avalon University School of Medicine, USA
Kathryn Huggett, University of Vermont College of Medicine, USA
Kelly Quesnelle, Western Michigan University, USA
Paula Smith, University of Edinburgh, UK

ABSTRACT:
Background: Over 30 years ago, the definition of scholarship began including the scholarship of teaching, addressing a decades-long debate over its comparison with the value of conventional research activities. The Association of American Medical Colleges thereafter defined educator activity categories and their forms of evidence for academic recognition. Nonetheless, health science educators continue to receive limited training in teaching and educational scholarship. Furthermore, the scholarship of teaching and their work is seldom recognized in promotion pathways.

Summary of Work: In 2009, the International Association of Medical Science Educators (IAMSE) devised an innovative Medical Educator Fellowship Program, which fosters health sciences education scholarship. The Program places equal emphasis on teaching skills development and educational research using strategies to maximize application in participants home institutions. Three Fellowship phases are completed in three years: 1. The ESME course conducted by AMEE; 2. Two faculty development courses at IAMSE or AMEE conferences; 3. Project mentoring by IAMSE committee members, culminating in an international conference presentation showcasing the fellows scholarly work.

Summary of Results: Since 2009, 53 fellows (54% female) representing seven countries enrolled in the IAMSE Fellowship. The Program encouraged proficiency in five content areas - curriculum design, teaching methods and strategies, assessment, educational scholarship, and leadership. A survey of fellows revealed an increase in perceived proficiency in all content areas with a doubling of those who rated their skills as very strong (from n=21 to 43) after completion, while a very weak rating fell from n=10 to zero. Almost 92% have presented their findings at a conference and 25% have published them in a peer-reviewed journal.

Discussion and Conclusions: A review of the first decade of the Fellowship demonstrates that the program has improved confidence in implementing, studying, and disseminating findings for effective teaching activities. Future iterations of the Program will incorporate a greater online provision of content and mentoring.

Take-home Messages: The Fellowship is an effective professional development program, supporting faculty in their educational scholarship endeavours. It offers participants a blended route towards externally recognized training and, ultimately, will improve the learning experience of our health sciences students.
#SC12: SC - Faculty Development 2

#SC12.6 Faculty Development Among African Oncologists: Examining Satisfaction Levels and Barriers (9338)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 17:15 to 17:30

**AUTHOR(S):**  
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Miriam Mutebi, Aga Khan University, Kenya  
Scott Berry, Queens University, Canada  
Nancy Dalgarno, Queens University, Canada  
Matt Jalink, Queens University, Canada  
Nazik Hammad, Queen’s University, Canada

**ABSTRACT:**  
**Background:** Oncology faculty development (FD) programs and initiatives have been shown to improve teaching, learning, and overall satisfaction levels of academic faculty. However, these benefits are not fully realized in resource constrained settings like African academic institutions that often face many FD challenges. Improving FD activities in the region may enhance the capacity of African oncology faculty to address these challenges. We sought to examine African oncology faculty’s satisfaction with and the perceived barriers with current professional development (PD) opportunities.

**Summary of Work:** We surveyed oncology faculty (n = 21) through the African Organization for Research and Training in Cancer listserv and conducted semi-structured interviews with nine (n = 9) faculty involved in African oncology training programs to ascertain their views on professional and faculty development activities including curriculum development, teaching, and learning. Descriptive and inferential statistical techniques and thematic analysis were used to analyze the survey and interview data respectively.

**Summary of Results:** Survey results revealed that 64% of academic oncology faculty believe that there are barriers to their PD at their current academic institutions. Barriers cited for PD from the interviews include the competitive nature of PD courses and programs, limited online learning opportunities, poor internet access, time constraints, language barriers, and high costs associated with PD activities. A large minority of the faculty survey (43%) were dissatisfied with their overall PD. Access to curriculum development opportunities ($\chi^2 = 10.97, p = 0.001$) and longer duration of practice ($\chi^2 = 7.9, p = 0.019$) were significantly associated with increased overall satisfaction with PD of oncology faculty.

**Discussion and Conclusions:** A considerable number of African oncology faculty are dissatisfied with their current PD opportunities. If confirmed, the finding that access to curriculum development opportunities leads to increased levels of satisfaction with professional faculty development could guide PD for faculty in African oncology training programs.

**Take-home Messages:** African oncologists are faced with many professional faculty development challenges and are therefore dissatisfied with the current state of their PD. Addressing these challenges may improve faculty satisfaction levels, remove barriers, and improve outcomes for learners. Also, opportunities for curriculum development can be improved to increase faculty satisfaction with PD.
#SC13: SC - Teaching & Learning and COVID-19

#SC13.1 Lessons from the COVID-19 Pandemic: Student Evaluation of a Newly Implemented Flipped Classroom Approach (9807)

Date of Presentation: 29 August 2021
Time of Presentation: 16:00 to 16:15

AUTHOR(S):
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Noélia Custódio, Faculty of Medicine of the University of Lisbon, Molecular Medicine Institute, Portugal
M. Carmo-Fonseca, Faculty of Medicine of the University of Lisbon, Molecular Medicine Institute, Portugal
Madalena Patricio, Faculty of Medicine of the University of Lisbon, Department of Medical Education, Portugal

ABSTRACT:

Background: As the COVID-19 pandemic flooded the world throughout the first half of 2020, medical schools were faced with a choice: swim or die - learning shifted radically online as countries went into lockdown. With the easing of restrictions, the Molecular and Cellular Biology (MCB) course at FMUL introduced a flipped classroom approach during semester I, based on pre-recorded lectures followed by face-to-face teaching.

Summary of Work: After the final class, 145 first-year students (46%), evaluated their learning experience through an online quantitative Likert Scale (LS)(min.1-max.5) and qualitative open-questions.

Summary of Results:
There were strong majorities in most quantitative questions, with little deviation: 95% agreeing/strongly agreeing that face-to-face and online teaching were well-integrated, pre-recorded classes were relevant (92%), stimulating (75%). Satisfaction was reported on whether the flipped classroom approach allows better management of study time (83%), precludes going to the Faculty to attend lectures (84%), and affords greater autonomy in studying (69%). A majority disagreed/strongly disagreed that pre-recorded classes make face-to-face classes unnecessary (69%) and that more classes should have been pre-recorded (68%). Opinions were divided on whether pre-recorded are better than face-to-face classes (median=3;IQR=2;σ=1.34), with 41% agreeing/strongly agreeing versus 28% disagreeing/strongly disagreeing, and whether the unfeasibility of raising questions during a pre-recorded class worsens learning (median=4;IQR=2;σ=1.37), with 56% agreeing/strongly agreeing versus 18% disagreeing/strongly disagreeing, plus 26% neither agreeing/disagreeing. Positive qualitative data reports on better management(n=24), autonomy(n=14), organization(n=13) and flexibility(n=6). Negative comments concern the unfeasibility of raising questions(n=31) during pre-recorded classes, insufficient time to cover all topics in face-to-face-classes(n=10), and feedback regarding three classes.

Discussion and Conclusions: Opportunities for educational innovation are becoming apparent with the COVID-19 crisis. Our results show that flipped classroom approaches are well-received among students, corroborating findings of two BEME 2020 systematic reviews (Morris et al. & Daniel et al.). As students seem motivated by positive face-to-face teacher interaction, online innovations must be continually monitored and balanced/optimized, creating a synergic relationship with preexisting methods.

Take-home Messages: • Flipped classroom approaches are highly evaluated by students. • There is significant support but no consensus over the superiority of online pre-recorded versus face-to-face lectures. • Online learning should not entirely replace face-to-face-learning.
#SC13: SC - Teaching & Learning and COVID-19

#SC13.2 The impact of the preclinical online Flipped Classroom (FC) on the critical thinking, group working and independent learning abilities from students’ perspective (9179)

Date of Presentation: 29 August 2021
Time of Presentation: 16:15 to 16:30

AUTHOR(S):
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Levan Metreveli, BAU international University Batumi (BAU), Georgia

ABSTRACT:
Background: FC gained special interest during the last, COVID-19 pandemics year, among the medical educators in order to improve online learning opportunities through increased student engagement. All the three Universities involved in this research are in the process of piloting the online FC method. This study was aimed to find out the impact of online FC method on the development of critical thinking, independent working and group working abilities from preclinical students perspective.

Summary of Work: Students from the three institutions were involved in FC format teaching in basic subjects. During the online FC sessions Google Meet and Zoom brake out room platforms were used. Structured written and oral interviews were performed with three focus groups of students from the three institutions; a questionnaire with five-point unipolar response Likert scale was created. The survey was performed on Survey Monkey platform. The number of participants in the survey - 392 (53%), from total number of 740 exposed to the method. Quantitative analysis of the survey data was performed using IBM SPSS statistics 22.0 program.

Summary of Results: The weight averages on Likert scale for competencies are: for critical thinking 3.8±1.06, for independent working skills 3.7±1.16 and for team player 3.9±1.1. The highest weight averages were for all three competencies in II and IV semesters, with no significant differences across the semesters (p < 0.05). The Ratios of more positive, more negative and neutral responses for each competency on Likert scale: critical thinking - 65%, 12%, 23%; independent working abilities - 60%, 16%, 24%; group working/team player - 67%, 11%, 22 % respectively.

Discussion and Conclusions: Students regard the online FC format important in development of critical thinking, independent learning and group working. Results will facilitate further implementation of FC in online and off-line settings.

Take-home Messages: FC should be further promoted at preclinical level in MD curriculum.
ABSTRACT:
Background: COVID-19 Pandemic has a critical impact on the education system which has forced educational institutions across the globe to consider innovative technologies and quickly adapt to a context while experiencing limited access to physical learning spaces such as simulation centers. A real challenge is how to transform simulation based sessions involving undergraduate medical students, often delivered on campus, with learning objectives that need to be addressed as stated in the course plans while using the existing digital learning ecosystem.

Summary of Work: The pandemic provided with an opportunity to study the rapid transformation of the simulation process from face to face to virtual simulation. The objective was to investigate the impact of this transformation on the simulation process, in a patient safety simulation session, when time for transformation was limited and learning objectives unaltered. The process (preparation, pre-briefing, simulation, debriefing) was investigated from the perspective of the educators and the students perceived experience.

Summary of Results: The results can be unraveled in context of feasibility and efficacy. The feasibility data was consolidated into a table describing the benefits and limitations of the transformation. The efficacy of transforming a face to face simulation to virtual simulation was explored by presenting year one MBBS students (n=61) who experienced the virtual simulation, with a questionnaire. 32 participants responded to the questionnaire that addressed the learner experience, ability to achieve learning outcomes, the benefits and challenges in context with the virtual simulation.

Discussion and Conclusions: The findings indicate that some aspects of simulation-based education, when using the existing information technology environment, are easier to transform without impacting on the learning objectives.

Take-home Messages: When resources of the simulation centre like space, manikins and faculty cannot be accessed for reasons like social distancing during a pandemic, virtual simulation can provide a feasible alternative. The pandemic catalysed experimentation in live simulation-based education settings that should be further encouraged. The technology savvy students of today may be seeking more than the traditional face-to-face interactions during simulation-based education.
#SC13: SC - Teaching & Learning and COVID-19

#SC13.4 Telesimulation in medical education during Covid-19 pandemic: Challenging times require creative measurements (9798)

Date of Presentation: 29 August 2021
Time of Presentation: 16:45 to 17:00

AUTHOR(S):
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ABSTRACT:
Background: In response to COVID-19 outbreak, alternatives to face-to-face classes/seminars rapidly emerged and telecommunication platforms become the new classrooms. Simulation-based classes were transformed into telesimulation encounters, many times, with learners and teachers off-site, with limited educational resources. Although challenging, telesimulation can promote a meaningful and interactive learning experience, when applied to suitable learning objectives (e.g. team training on non-technical skills).

Summary of Work: The following combination of free online resources was used to create virtual emergency simulation scenarios, aiming team training of non-technical skills: •A teleconferencing platform, •An online serious game for setting the scene, •A vital signals monitor simulator software, and, •Visual cues and prompts (e.g. lab results or imagology). Computers/tablets and cell phones are the only needed hardware. Documents with clear instructions and recommendations must be created for staff and students. Examples of support documents and an illustrative video are available at: https://simulacao.med.up.pt/tools-resources/. Using the described strategy, three emergency scenarios were delivered through telesimulation, using the typical structure (scenario + debriefing). Eight medical students (in teams of 4) participated in all scenarios. Feedback from students on the educational gains was surveyed, as a preliminary evaluation of this methodology.

Summary of Results: Students feedback showed an overall positive reaction, with all agreeing that this was a valuable educational experience. Although they preferred physical scenarios, all agreed that telesimulation provides a comparable experience to physical scenarios. All students agreed that telesimulation allowed the acquisition/maintenance of non-technical skills and that they will change/improve their behavior/action as a result of this experience. All students would like to have more classes using telesimulation, and all agreed that this strategy could be useful as a complement to face-to-face classes, post-COVID pandemic.

Discussion and Conclusions: The use of free online tools makes telesimulation accessible off-site and worldwide, including in low-resources locations. This strategy has high potential to be used in the transitional post-confinement period or as a future complement to physical settings.

Take-home Messages: •Telesimulation can promote a meaningful and interactive distance-learning experience, even with limited physical resources. •This strategy has high potential to be used in the transitional post-confinement period or as a future complement to physical settings.
#SC13: SC - Teaching & Learning and COVID-19

#SC13.5 Virtual Simulation: Medical student readiness and engagement during the COVID-19 lockdown (9717)

Date of Presentation: 29 August 2021
Time of Presentation: 17:00 to 17:15

AUTHOR(S):
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Shakeel Mohammed, Otago Medical School, New Zealand
Tehmina Gladman, Otago Medical School, New Zealand
Sarah Rennie, Otago Medical School, New Zealand
Peter Radue, Otago Medical School, New Zealand
Niki Newman, Otago Medical School, New Zealand

ABSTRACT:
Background: Clinical and experiential learning opportunities for medical students were dramatically reduced during the COVID-19 lockdown. Many medical educators turned to distance and computer-based methods in an attempt to address this loss of opportunity. Many factors might contribute to students readiness for this type of learning, and the uptake of such opportunities might be influenced by factors including motivation, perceived relevance and level of confidence.

Summary of Work: 883 medical students were given access to a number of virtual reality clinical cases for a period of 2 months. Students completed a preliminary survey assessing self-reported readiness and confidence in their ability to complete clinical learning outcomes associated with the cases as a precursor to gaining access to the online cases. A follow up survey was distributed to participants who completed at least one case at the end of the trial period.

Summary of Results: 428 students completed the preliminary survey (48%). Of these, 166 (38.8%) went on to complete cases. Binomial logistic regression identified a significant positive relationship between readiness for self-directed learning and online case completion (p=0.042), and a significant negative relationship between students estimated likelihood of success with the cases and case completion (p<0.001). A statistically significant (p=0.002), though moderate, increase in confidence was reported for respondents after completing online cases.

Discussion and Conclusions: Evidence of improvement in confidence for clinical learning outcomes for students who completed some of the cases was observed, suggesting some value in this approach for clinical learning for those students. However, despite initial interest from almost half of the cohort, only a small number completed at least one case. Our hypothesis that students may vary in readiness, which would predict subsequent case usage, was only partially supported.

Take-home Messages: Students are interested in opportunities to experience clinical virtual simulations, but their willingness to take up these opportunities in uncontrolled conditions is limited. Engagement in these opportunities may have beneficial impacts on self-perceived confidence, but more work is required to control for many factors that may also affect confidence.
#SC13: SC - Teaching & Learning and COVID-19 1

#SC13.6 Game-based learning to provide exposure to specialty fields (8609)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 17:15 to 17:30

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** There is tremendous potential in using serious games, as they have been shown to be equally as effective as high-fidelity patient simulators for developing team skills. An advantage to using serious games over other forms of simulation is the low cost and high level of accessibility for students. PulmEx presents challenging and rare patient case scenarios that are seen in both general and interventional pulmonology.

**Summary of Work:** Second year undergraduate medical students were invited to participate in the study via email at the beginning of the academic year. Participation in the study coincided with the students pulmonology block where they received lectures on pulmonary pathology, pharmacology, and physical exam skills. Participants were randomly assigned into either the control group or the PulmEx intervention group and asked to complete a pre and post-survey. Students in the PulmEx group were asked to play a minimum of four cases per week during the four-week study period.

**Summary of Results:** Students in the intervention group reported being more interested in interventional medicine and more interested in pursuing pulmonology or interventional medicine as a career than the control group. The intervention group was also more confident working in a team to care for a patient with pulmonary disease, and recognizing various anatomical or pathological structures endoscopically. A majority of the students in the intervention group reported the cases helped them understand the material they were learning in class and that their experience with the app was fun.

**Discussion and Conclusions:** Given the notorious difficulty of pre-clinical curriculums, it is important to find ways for students to be able to solidify course content while also maintaining their wellbeing. Game-based learning offers students an opportunity to engage in the content that they are learning about in class in a novel way that has the potential to not only enhance their pre-clinical knowledge but also increase their confidence managing patients when they enter the clinical years.

**Take-home Messages:** In COVID-era remote medical education, game-based learning and simulation offer students an opportunity to begin experiencing specialized fields of medicine while simultaneously adding to their pre-clinical knowledge.
#SC14: SC - The Curriculum/Accreditation

#SC14.1 Global Perceptions on Social Accountability and Outcomes: A Survey of Medical Schools (7843)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:00 to 16:15

**AUTHOR(S):**  
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Saad Chahine, Queens University, Canada  
Jimmie Leppink, University of York, UK  
Cees van der Vleuten, Maastricht University, The Netherlands

**ABSTRACT:**

**Background:** Social accountability is central to medical education, yet despite repeated international calls for stronger evidence of institutional effectiveness, programs struggle to demonstrate social accountability. This study explores institutional practices and administrative perceptions of social accountability in medical schools, globally.

**Summary of Work:** An online survey was emailed to a purposeful sample of academic deans and program directors/leads of English-speaking medical schools that offer an undergraduate medical program from 245 institutions in 14 countries. Survey items were developed using previous literature and categorized using context-input-process-products (CIIPP) evaluation model as an organizational framework. Exploratory Factor Analysis (EFA) using principal axis factor analysis with oblique rotation was used to assess the inter-relationships among survey items. Reliability and internal consistency of items were evaluated using McDonalds omega. Analysis of variance (ANOVA) and post hoc analyses were used to examine differences in institutional practices of social accountability.

**Summary of Results:** Findings from 103 deans and program directors/leads from 80 medical schools in 14 countries collected between February and June 2020 are presented. Common perceptions that contribute to the social accountability were identified. However, institutional nuances were observed. EFA demonstrated excellent internal consistency and reliability. Five-factors were extracted, accounting for 68% of the variance: community partnerships; institutional mandates; selection and recruitment; institutional activities; and community responsibility. McDonalds Omega reliability estimates for subscales ranged from 0.76-o.91. Differences among subscales were observed.

**Discussion and Conclusions:** This study explored institutional practices and administrative perceptions of social accountability, globally. While, most medical schools expressed an institutional commitment to social accountability, the effects of their outcomes on the community remain unknown and not evaluated. Observed country level differences suggests institutional practices of social accountability focus predominately on inputs and processes and lack product outcomes. Overall, this paper offers programs and educators a psychometrically supported tool to aid in the operationalization and reliability of evaluating social accountability.

**Take-home Messages:** The perceptions captured in this study represent an international consensus of social accountability indicators, linking theory to practice. Most respondents expressed an institutional commitment to social accountability however the effects of their outcomes on the community remain unknown and are not evaluated.
Date of Presentation: 29 August 2021  
Time of Presentation: 16:15 to 16:30

AUTHOR(S):  
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Nathan Bollig, Department of Computer Sciences, University of Wisconsin, USA  
Molly Harris, School of Veterinary Medicine, University of Wisconsin, USA  
Simon Lygo-Baker, School of Veterinary Medicine, University of Wisconsin, USA

ABSTRACT:  
Background: Since its founding in 1983, the Doctor of Veterinary Medicine curriculum at the University of Wisconsin-Madison has undergone little revision. However, veterinary education has evolved, most recently incorporating an expanded competency-based veterinary education (CBVE) framework in 2018. To ensure the program continues utilizing best practices in health professional education, the School began a curriculum revision process in July 2020. After considering various frameworks, including Hardens SPICES model and Thomas & Kerns six-step approach, the School chose the ASPIRE-to-Excellence framework for curriculum development as the scaffold for its curriculum revision.  
Summary of Work: A 20-member task force used the six curricular components of the ASPIRE framework to form six working groups. These groups reviewed literature and interviewed other veterinary programs to identify evidence-based best practices, leading to a series of recommendations. Through a participatory design process of meetings and workshops, the Schools faculty, staff, and students suggested ways to implement the recommendations, potential barriers to implementation, and strategies to overcome barriers. The revised recommendations will become the scaffold for curricular revision.  
Summary of Results: Defining working group responsibilities was challenging since criteria within the ASPIRE framework partially overlap. To address this, the task force defined each groups charge, while encouraging collaboration between working groups when a recommendation bridged groups. For example, overarching structural recommendations, such as increasing early clinical experiences, were the responsibility of the Pedagogy group, whereas teaching recommendations, such as increasing active learning, fell to the Teaching group. Ultimately, working together, the groups produced a series of recommendations for discussion.  
Discussion and Conclusions: We encountered challenges adapting the ASPIRE framework to guide curricular revision. Defining the responsibilities of working groups required flexibility and ample collaboration between groups. While still early in the process, we find the framework has been successful in guiding identification of evidence-based best practices and has provided a foundation for excellence in the revision process.  
Take-home Messages: The ASPIRE Excellence in Curriculum Development framework can be used to support the curriculum revision process in veterinary education. To our knowledge, this is the first veterinary curriculum revision that has been structured using the ASPIRE framework.
ABSTRACT:

Background: The goal of accreditation is to ensure the quality of undergraduate (basic) medical education. However, there is limited research linking accreditation to improved outcomes. Moreover, in response to variability in accreditation systems worldwide, the World Federation for Medical Education (WFME) has implemented a recognition program for medical school accrediting agencies aimed at ensuring accreditation meets globally accepted criteria.

Summary of Work: Certification by the Educational Commission for Foreign Medical Graduates (ECFMG) is required of international medical graduates to enter post-graduate training in the United States and obtain an unrestricted medical license. To become ECFMG Certified, historically applicants were required to pass three components of the U.S. Medical Licensing Examination (USMLE): Step 1 Basic Science; Step 2 Clinical Knowledge; and Step 2 Clinical Skills (CS). Step 2 CS was discontinued in March 2020. The goal of this study was to compare the USMLE performance of 2018-2020 ECFMG Certification applicants who attended medical schools accredited by a WFME-recognized agency to that of applicants from schools not accredited or accredited by an agency not recognized by WFME.

Summary of Results: Across the three-year study period, for all USMLE components, individuals who attended medical schools accredited by an agency recognized by WFME had higher first-attempt pass rates compared to individuals who attended schools that did not meet this criteria. Of the three USMLE components, the difference was greatest for Step 1, followed by Step 2 CS. For Step 2 CS, a substantial difference was also seen in the subcomponent assessment of clinical data gathering and data interpretation skills.

Discussion and Conclusions: The results of this study demonstrate a positive association between performance on a national licensing examination, the USMLE, and accreditation by a WFME-recognized agency. To stimulate international accreditation activities, starting in 2024, applicants for ECFMG Certification will be required to be a student/graduate of a medical school accredited by a WFME-recognized agency. This study gives further support to that requirement.

Take-home Messages: Students/graduates of medical schools accredited by an agency recognized by WFME had higher first-attempt pass rates on the USMLE compared to their peers from schools not meeting this criteria.
The purposes of accreditation of basic medical education are to evaluate and ensure the quality of medical education programmes and encourage improvement, but accreditation practices vary considerably worldwide. The World Federation for Medical Education (WFME) has implemented a global programme to recognise agencies that accredit medical schools at an international standard.

Accreditation activities are increasing, but access to a credible accreditation process is not universal. Therefore, some medical schools consider acquiring accreditation from a WFME-recognised agency based in another country. For an agency to operate with WFME's approval outside of its home borders, WFME verifies that the agency is recognized by appropriate authorities in the new country, confirms that decisions made by the agency have consequential impact in the country, and that the agency has considered the appropriateness of the policies, procedures and standards in the additional country’s context. This study describes the current state of WFME recognised agencies with international scope.

As of February 2021, 23 accrediting agencies operating in 55 countries are recognised by WFME. Of these 23 recognised agencies, eight function across borders. Scope of agency activities range from two countries, such as the Australian Medical Council operating in New Zealand, to agencies located in Kazakhstan and Turkey that each accredit schools located in six countries, to a regional accreditor in the Caribbean that accredits schools in 13 countries. Some WFME recognised agencies are authorised to accredit a specific school in another country, but not operate elsewhere.

Medical education accreditation activities continue to increase as agencies and schools expand their global reach. To help ensure contextually appropriate quality assurance activities worldwide, WFME evaluates the legal standing and recognition by local authorities of accrediting agencies pursuing international opportunities. While WFME continues to encourage the use of in-country agencies wherever possible, some smaller countries without an accreditor could potentially benefit from using one based elsewhere.

Without first undergoing this rigorous review, accreditations performed by non-local agencies are not recognised by WFME. The WFME Recognition Programme contributes to understanding the quality of medical schools around the world.
#SC14: SC - The Curriculum/Accreditation

#SC14.5 Using systems thinking approach to designing a task-based integrated curriculum for community-based clinical learning (9194)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 17:00 to 17:15

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** There are well established benefits to early clinical exposure of medical students to various community-based healthcare settings. Apart from improving clinical skills in dealing with diverse clinical encounters, such placements seem to positively impact professional development skills including critical thinking and teamwork. Sydney Medical Schools new curriculum provides an opportunity for year 2 students to undertake placements in general practice, pharmacy, pathology, radiology, and allied healthcare settings in two 8-week blocks. Whilst senior medical students have been undertaking placements in general practice for years, this is for the first time that community-based placements have been introduced for junior medical students.

**Summary of Work:** Informed by the systems thinking framework (soft systems approach), and guided by contemporary curricular theories, we designed a task-based curriculum for about 300 year 2 medical students placed in various community-based healthcare settings. Consultations and focus groups with internal and external stakeholders (students, practitioners, and academics) were undertaken to refine and validate the curriculum.

**Summary of Results:** Task-based design and underlying blueprint were perceived favourably in terms of being relevant, authentic and feasible, and robust in terms of fostering self-directed experiential learning. The blueprint was found to be horizontally integrated within year 2 curriculum, and vertically integrated with the final year general practice placements, with the potential of spiral integration in terms of increasing task complexity and autonomy.

**Discussion and Conclusions:** The micro-curriculum designed for early clinical immersion in non-hospital settings is the first of its kind to be designed and implemented by a large medical school such as Sydney Medical School for junior medical students. The design is also one of the first to introduce regular interprofessional learning with other healthcare professions in a community setting.

**Take-home Messages:** Keeping in view these benefits of diverse clinical exposure at various community-based healthcare settings at the personal, program and practice levels, systems thinking approach can guide design considerations for an authentic learning task-based curriculum. Such a design can bridge the gap between educational and service needs in creating a community of diverse practices and practitioners.
The word that comes to mind is polymath: A qualitative analysis on medical students’ perceptions of rural post-graduate careers (8645)

Date of Presentation: 29 August 2021
Time of Presentation: 17:15 to 17:30

AUTHOR(S):
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Anita Laidlaw, University of St Andrews, UK

ABSTRACT:

**Background:** Accessibility and delivery of care is challenged by physician shortages in rural and remote communities, including within Scotland. Medical education is essential in strengthening the rural practitioner workforce, thus educational reform is a priority in establishing a sustainable rural medical workforce. While specific aspects of rural medical curricula interventions are proven to promote rural recruitment of recent medical school graduates, the mechanisms by which these educational initiatives work is not clearly understood.

**Summary of Work:** This study examined medical students perceptions of rural and remote practice, evaluated how these perceptions motivate students intentions to practice rurally, and identified what aspects of medical curricula influence these perceptions. Ten University of St Andrews medical students, enrolled in undergraduate and graduate-entry medical education programmes, were recruited. Semi-structured interviews informed medical students rural health perceptions. Feldman and Ngs Careers: Embeddedness, Mobility, and Success theoretical framework was deductively applied to collected data. This theoretical framework centred our examination of medical students perceptions of rural medicine and the mechanisms shaping these perceptions.

**Summary of Results:** Structural themes included isolation of physicians and patients due to geographical barriers. Organisational themes included limited staff support in rural practices and a perceived inequitable allocation of resources between rural and urban communities. Occupational themes included the recognition of rural clinical generalists. Personal themes included the perception of tight-knit rural communities. The mechanistic aspect most profoundly shaping medical students perceptions were their experiences(educational, personal, or working).

**Discussion and Conclusions:** Perceptions of medical students align with other professionals reasons for embedding in a particular job. Specific perceptions unique to medical students regarding rural careers included isolation, the need for rural clinical generalists, uncertainty in rural areas, and the tight-knit rural community. These perceptions are explained by educational experience mechanisms, which include exposure to telemedicine, GP role-modelling, methods on overcoming uncertainty, and codesigned medical education programmes.

**Take-home Messages:** The application of Feldman and Ngs framework provided a systematic approach to consider medical students perceptions of rural careers and to identify educational experience mechanisms. Moreover, this approach is transferable and comparable between regions, allowing educators and policymakers to consider the impact of medical education programmes on rural and remote healthcare recruitment and retention.
## Abstract:

**Background**: Racism is an acknowledged issue in society, higher education and in medical education. We approach this issue from a critical race theory perspective (Delgado 2017), with an acceptance that inequality in experience exists and that an active anti-racist approach is a necessary position to hold. At Warwick Medical School, UK, we have developed a series of workshops that we run to help our faculty staff, including teachers and administrators, develop an active awareness of racism in the teaching and learning contexts of our medical students, and help them develop tactics to manage difficult situations.

**Who Should Attend**: Educators, faculty developers, leaders, and anyone at any level interested in becoming more actively aware of how race manifests in educational contexts/institutions and how to combat it.

**Structure of Workshop**: Participants will take part in a structured workshop via group discussion and active learning to achieve the listed objectives.

Participants will experience parts of our 'Working and Teaching with Active Racial Awareness' workshop, including short presentations of information on racism in society and medical education, and facilitated discussion of teaching-related scenarios.

Using our experiences of writing and adapting our workshop for online delivery and a wide variety of staff groups, we will share lessons about how we have developed good practice in this area. There will be opportunities for participants to ask questions, discuss our approach, and consider how they could apply this to their own context.

**Intended Outcomes**:

1. Learn some skills of active racial awareness.
2. Be able to apply critical race theory principles to your own context.
3. Know some of the resources necessary to assist your own institution in becoming more actively anti-racist.

**Level**: Introductory / intermediate
#W9: Workshop 9

**The role of ePortfolios in Health Professions Education (8612)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 16:00 to 17:30

**PRESENTER(S):**  
Ken Masters, Sultan Qaboos University, Oman  
Kalyani Premkumar, University of Saskatchewan, Canada

**ABSTRACT:**

**Background:** The ePortfolio is a learning tool that serves not only to document learning but also generate learning. ePortfolios help generate learning as they provide opportunities and virtual spaces for students and instructors to assess academic work, promote reflection on the work, and integrate topics across courses, assignments, academic and non-academic experiences, among others. This tool is effective in supporting students own knowledge-construction - making invisible learning aspects visible and promoting learner motivation. This workshop will explore the utilization of ePortfolios in health professions education, and enable participants to practice using this technological tool for their own learning.

**Who Should Attend:** The workshop will be of benefit to a wide range of health professions educators: those involved in curriculum planning, course development, program evaluation and faculty development across the health professions education continuum (undergraduate, postgraduate and continuing education).

**Structure of Workshop:** This workshop will begin by exploring the benefits and challenges of using ePortfolios, followed by demonstration of their utilization in undergraduate, postgraduate and continuing medical education. Finally, participants will have hands-on experience on how to use ePortfolio software and discussions around how to utilise this learning tool in their own context.

**Intended Outcomes:** Immediate: Describe the benefits of using ePortfolios in health professions education. List various ePortfolio tools available, navigate within one of the tools and reflect on how to incorporate ePortfolio in their own context.

Long-term: This workshop will benefit participants and their institutions on how to capitalize on ePortfolios in student learning and also promote faculty’s lifelong learning and reflections.

**Level:** Introductory/Intermediate
#W10: Workshop 10

#W10  WHO Europe & AMEE - Effective under- and postgraduate education and CPD for the Primary Health Care

Date of Presentation: 29 August 2021
Time of Presentation: 16:00-17:30

SESSION CHAIRS:
Janusz Janczukowicz, Medical University of Lodz, Poland
Tomas Zapata Lopez, WHO Europe

ABSTRACT:
Primary health care (PHC) is a community’s first and main point of contact with the health system, helping people to live the healthiest lives possible and providing the right care, at the right time, in their communities. Strong PHC can address most of peoples’ health needs throughout their lives, from preventing and treating illness, to managing chronic health conditions and to delivering essential health services like vaccinations and reproductive, maternal, newborn and child health care.

The delivery of primary health care requires effective, well trained, and appropriately educated human resources for health. The aim of this workshop is to present the WHO Europe views at developments in education, training, motivation, and retention of the PHC workforce, with an appropriate skill mix and to discuss how the European community of good practice in under- and postgraduate education and CPD can proactively build and implement curricula supporting the PHC needs of European societies. Workshop participants together with the WHO Europe experts will focus on identifying educational strategies to support health professionals career pathways in rural, remote, and less developed areas.

Level: all
#W11: Workshop 11

#W11  Nurturing the Scholarship of Teaching and Learning through mentoring and collaboration (8692)

Date of Presentation: 29 August 2021  
Time of Presentation: 16:00-1730

PRESENTER(S):  
Eeva Pyörälä, University of Helsinki, Centre for University Teaching and Learning; AMEE Fellowship Committee, Finland  
Subha Ramani, Harvard Medical School, Dept of Medicine, Brigham and Womens Hospital, USA  
Rashmi Kusurkar, Amsterdam University Medical Centre, Faculty of Medicine Vrije Universiteit, The Netherlands

ABSTRACT:  
Background: Traditionally, scholarship was viewed as synonymous with research. Experts such as Boyer (1990), emphasized the need to recognize and reward the scholarship of teaching. Teachers who pursued scholarship explored teaching and student learning, made their work public, peer-reviewed and shared it with other professionals (Hutchings & Shulman 1999). Glassick (2000) further defined the criteria for scholarly activities. These included clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique. In this workshop, a subgroup from the AMEE Fellowship Committee explores the foundations and criteria for educational scholarship, uses brainstorming with participants to discuss practical application of these criteria and describes concrete strategies for advancing from teaching to scholarly teaching and finally scholarship in health professions education. We unravel the foundations of the scholarship, giving examples of how interdisciplinary and interprofessional collaboration, mentoring and networking nurtures scholarship. Thus, this workshop will showcase the core mission of AMEE to promote international excellence in health professions education, as well as the purpose and value of the fellowship scheme and its mentoring initiatives aimed at the professional development of educators and educational scholars worldwide (Ramani et al. 2020).

Who Should Attend: This workshop will stimulate and benefit all health professions educators initiating or advancing their careers as educational scholars, nationally and internationally. In addition, participation is likely to support AMEE Associate Fellows in their professional development.

Structure of Workshop: The workshop is based on active learning and interaction. It includes three short presentations by facilitators, a question and answer session, and interactive group work. We will provide practical examples of mentoring as well as interdisciplinary/interprofessional collaboration. We will invite the participants to share experiences of their journey toward the scholarship.

Intended Outcomes: At the end of the workshop, the participants will be able to

1. Describe the Scholarship of Teaching and Learning and practical approaches to successful scholarship in health professions education.
2. Reflect on the value of interdisciplinary and interprofessional collaboration, mentoring and networking in promoting scholarship.
3. Apply practical suggestions and tips to advance as educational scholars at their own institutions, nationally and internationally.

Level: Introductory/intermediate
#S7: Symposium 7

#S7  Challenging intraprofessional workplace-based education norms (7485)

**Date of Presentation:** 29 August 2021
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**
Renée Stalmeijer, School of Health Professions Education, Maastricht University, The Netherlands
Lara Varpio, Center for Health Professions Education, Uniformed Services University of the Health Sciences, USA
Saira Cristancho, Department of Surgery and Centre for Education and Research Innovation, Western University, Canada
Iris Jansen, Professional Performance and Compassionate Care research group, Amsterdam UMC (AMC), The Netherlands
Pim Teunissen, School of Health Professions Education, Maastricht University, The Netherlands

**Summary:** Is the field of medical education unintentionally preventing medical trainees from becoming effective interprofessional healthcare professionals? Have we blinded ourselves to the potential of engaging the entire healthcare team in the education and evaluation of medical learners?

Becoming a medical professional is situated within the clinical workplace—a context where intraprofessional practice traditions run counter to interprofessional collaboration expectations. This contradiction generates problematic tensions. The focus of explaining and enabling workplace learning and guidance has been predominantly intraprofessional: the expert who guides the trainee into the community is almost exclusively from the same profession. However, medical trainees are expected to address complex healthcare issues through interprofessional collaboration. If the future of patient care is interprofessional, how can medical education remain strictly intraprofessional?

During this symposium we present an argument of how a narrow interpretation of workplace learning is inhibiting our progress towards improved interprofessional collaboration.

Through both theoretical and empirical presentations this symposium addresses and discusses the following topics 1) Embracing the Landscape of Health Care Practice (Renee Stalmeijer) 2) Leadership or followership in healthcare teams (Pim Teunissen) 3) How collective adaptation can enable expansion of our perspective on interprofessional team work (Sayra Cristancho), and 4) What we can learn from interprofessional collaboration in military teams (Lara Varpio).

**What participants will gain:** Participants will gain insight into

- the concept of Landscape of Health Care Practice: a system of multiple Communities of Practice surrounding a practice requiring the professionals within it to develop ‘knowledgeability’ about the Landscape to be competent;

- theories of followership as they can be applied to interprofessional collaboration

- theories of collective adaptation and how they reframe our thinking about interprofessional collaboration

- data on how military interprofessional teams harness followership and collective adaptation to bring the healthcare team into education and evaluation of medical learners

Participants are invited to discuss the potential of this perspective and will leave with ideas of how to challenge intraprofessional workplace education norms within their own (clinical) practice.
Who should participate: Participants interested in challenging the intraprofessional workplace-based education norms through their role(s) as researcher, educator, trainee and leader.
#S8: Symposium 8

**#S8 Symposium 8 - Essential curriculum transformation – the why and how (7477)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**  
John Jenkins, Royal College of Surgeons in Ireland, Ireland  
Peter McCrorie, University of Nicosia Medical School, Cyprus  
Harm Peters, Charité – Universitätsmedizin, Germany  
Martina Crehan, Royal College of Surgeons in Ireland, Ireland  
Davinder Sandhu, Medical University of Bahrain, Bahrain

**Summary:** The centenary of the 1910 Flexner report was marked by a number of seminal publications calling for further transformative change in the education of doctors (and other healthcare professionals).1,2

Transformative learning involves three fundamental shifts: from fact memorisation to searching, analysis, and synthesis of information for decision making; from seeking professional credentials to achieving core competencies for effective teamwork in health systems; and from non-critical adoption of educational models to creative adaptation of global resources to address local priorities.1 More recently Harden has also contributed to this debate, setting out his vision for ten key features of the future medical school.3

This symposium will share the experiences of the participating international medical schools, providing insights into drivers for transformative curriculum development, the underpinning foundations and framework necessary for its planning and implementation, and specific examples of how this has been and is currently being taken forward. Many medical schools around the world are at different stages in considering, developing, implementing or reviewing initiatives to take these recommendations forward in ways appropriate to their patient, health system and societal settings.

The AMEE ASPIRE curriculum development award scheme has also been developed to stimulate, encourage and inform educators and their institutions in such developments - [https://www.aspire-to-excellence.org](https://www.aspire-to-excellence.org)

**What participants will gain:** The symposium will focus on identifying high level principles which can be used to address desired curricular development in a wide variety of national and local settings. It will also provide opportunities for sharing of international experience, with focus on learning from each other, meeting colleagues with experience in this area and providing a setting in which contacts can be made for ongoing exchange of information and collaboration, as envisaged in the AMEE ASPIRE Academy initiative. **Who should participate:** Anyone engaged in or with an interest in curriculum reform, who wishes to participate in an exploration of drivers, rationale and implementation, shared by a team with extensive international experience of the realities of leading the extensive change management process required to undertake this successfully.

**References**  
#RP4: Research Paper - Emotionally Challenging Experiences in HPE

#RP4.1 Emotion in remediation: A scoping review of the medical education literature (7693)

Date of Presentation: 29 August 2021
Time of Presentation: 18:00 to 18:20

AUTHOR(S):
Lynnea Mills, University of California, San Francisco, USA*
Christy Boscardin, University of California, San Francisco, USA
Olle ten Cate, University Medical Center Utrecht, The Netherlands
Patricia O’Sullivan, University of California, San Francisco, USA

ABSTRACT:
Introduction: The medical education literature has examined emotion related to wellbeing (e.g.,1) and the impact of emotion on healthcare workers’ performance (e.g.,2), but less on how emotions relate to the learning process itself, relative to other disciplines (3,4,5,6), where emotion is intentionally factored into education work. We aimed to explore how emotion is incorporated into medical education interventions, specifically in the remediation context, one of the highest-emotion contexts in medical education. Remediation of underperformance in health professions education is common, with literature describing guidance on general approaches to remediating struggling learners (e.g.,7) and regarding specific challenges (e.g.,8), but it’s unclear to what degree emotion is explicitly accounted for in remediation programming. Incorporating understanding of emotion, and its impact on learning, can likely improve learning outcomes from remediation programs.

Methods: We used Arksey and O’Malley’s framework to conduct a scoping literature review of records describing remediation interventions in medical education up to May 2020, using PubMed, CINAHL, ERIC, and APA PsycInfo databases. We reviewed emotion inventories to gain a shared understanding of words used to describe emotion, then used qualitative methods to analyze all included records for the presence of any mentions of emotion and to describe those mentions.

Results: Out of 1644, 199 records met inclusion criteria and were reviewed in full; 112 (56%) of these mentioned emotion. Thematically, the mentions of emotion could be grouped into three phases of the learning process. When cited during regular coursework or practice (prior to the learner’s being identified as needing remediation), emotion was seen as a potential cause of the need for remediation. At the time of referral for remediation, emotion was mentioned largely in relation to stigma and a reason learners are reluctant to engage with the process. When emotion was cited during the remediation process itself, it was often noticed only post-hoc. Forty-nine records (25%), however, indicated an intentional incorporation of emotion into remediation programming; these largely focused on facilitating trust between coaches and learners.

Discussion and Conclusions: Some studies incorporated emotion into remediation programs and offered guidance, emphasizing a strong coach-learner relationship. Yet other records did not intentionally incorporate emotion; there are likely multiple reasons for this, including long-standing culture around outsourcing emotion to mental health experts, an emphasis on cognitive over affective learning strategies, and a lack of knowledge about how to incorporate emotion. Studies in higher education, particularly, provide ideas for actionable steps that may immediately improve remediation in the medical education setting. For example, studies indicate that learners in general education who experience stress do better when learning to reframe the stress than to mitigate it; this may be directly applicable to learners in medical education remediation settings, as they likely experience high degrees of stress. Additional research from outside disciplines offers similar insights and avenues for further study that may improve remediation in medical education.

#RP4: Research Paper - Emotionally Challenging Experiences in HPE

#RP4.2 Dual but dueling purposes: The use of reflective writing to remediate professionalism (7597)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:20 to 18:40

**AUTHOR(S):**  
Tracy Moniz, Mount Saint Vincent University, Canada*  
Carolyn Gaspar, Dalhousie University, Canada  
Andrew Warren, Dalhousie University, Canada  
Chris Watling, Western University, Canada

**ABSTRACT:**

**Introduction:** Underperformance in the professional role has high stakes for learners and educators. Problems with professionalism, unless appropriately and effectively remediated, may portend serious problems in practice [1]. Yet, remediation for unprofessional behaviour is particularly challenging—and understudied. Increasingly, educators are turning to reflective writing as a remediation strategy in residency, yet little is known about what educators expect reflective writing to accomplish, how they choose reflective writing tasks, why they use reflective writing, or how they evaluate whether a learner has met expectations. We aimed to understand how and why postgraduate medical educators use reflective writing as an educational intervention to remediate professionalism.

**Methods:** We conducted semi-structured interviews with 13 medical education professionals with experience using reflective writing to remediate professionalism across five Canadian medical schools. Data was analyzed iteratively for themes using constructivist grounded theory.

**Results:** We identified three core concepts that embody educators’ approach to using reflective writing to remediate professionalism in residency: insight, uncertainty, and safety.

Participants identified insight as critical to professionalism remediation. Educators understood lapses in professionalism to most-often stem from learners’ lack of insight into their own problematic behaviour and its impact on patients, peers, the system, and their future career. Educators reported that they, therefore, use reflective writing as a tool to help learners acknowledge and develop such insight. They then assess the writing and, in doing so, reported that they look to it for evidence that learners have gained insight—that learners reflected on their behaviour, empathized with its impact, learned from the experience, and planned for change.

Participants expressed uncertainty about how to use reflective writing, even as they recognized it may be useful in remediating professionalism challenges. Specifically, they were uncertain about how to set expectations, how to judge a ‘good’ piece of writing, and whether reflective writing that meets the ‘standard’ translates into behaviour change. In approaching assessment, many educators said they were looking for a demonstration of sincerity. They also consistently acknowledged their struggle with assessing reflective writing, given the inherent challenge in assessing sincerity and the subjective nature of the assessment.

Participants recognized learner safety as an indispensable catalyst for sincerity in reflection. They acknowledged that residents undergoing remediation are vulnerable, given the gravity and high stakes of remediation. They explained that learner buy-in was critical to realizing the value of reflective writing and acknowledged that many factors may hinder learner engagement, such as time constraints, not accepting the reason for being on a remediation plan, a lack of formal training in and comfort with reflective writing, and concerns about being evaluated on their reflective writing. Educators perceived that learners may be more concerned with producing a piece of reflective writing that will ‘pass’ than writing to genuinely introspect.

**Discussion and Conclusions:** Educators are using reflective writing for dual purposes—as a learning tool to develop insight and as an assessment tool to unearth evidence of insight. The goal of learning may compete with the goal of assessment, creating tension that leads to uncertainty about the sincerity, quality, and effectiveness of reflective writing as well as concerns about learner safety. Educators reported
uncertainty about whether learners write to perform or whether they write to reflect [2] and about how to judge the effectiveness of reflective writing as a learning tool. Educators expressed concern about creating a safe environment for learners—one that enables the genuine reflection required for insight development—while meeting requirements of the remediation process. Educators often express ambivalence about using RW in remediation around professionalism in residency. Understanding the potential and pitfalls of RW may inform more tailored and effective approaches to professionalism remediation.

ABSTRACT:

Introduction: Coming face to face with a trainee who needs to be failed is a stern test for any supervisor. How supervisors respond to the test is highly consequential, and potentially catastrophic, for the trainee. Those responsible for a failing trainee can experience burdensome workload and emotional repercussions that interfere with assessment demands. Our recent work identified a phase of disbelief as supervisors encountered unanticipated signs of underperformance. The shift from disbelief to identifying underperformance hinged on their perception of how responsive the trainee (and the deficit) were to teaching. What remains unknown is how they come to the point of believing that the trainee needs to be failed. This shift is integral to understanding failure to fail phenomenon.

Methods: Following constructivist grounded theory methodology, analysis of 22 original interviews with physicians from non-surgical specialties identified preliminary themes requiring elaboration through further data collection using theoretical sampling. An additional 20 physicians with experience failing or remediating trainees were recruited primarily from surgical and procedural specialties. Data collection and analysis of the 42 interviews proceeded iteratively and with constant comparison. Revised interview questions focused on their experience supervising the least competent trainees: those with stalled progression in the program, requiring extensive remediation, or deemed unsuitable for the specialty.

Results: In line with previous participants, those from surgical and procedure-dominant specialties described a phase of disbelief when first encountering underperforming trainees: “it’s just baffling to me” when trainees cannot do “some bare minimum things” that are “basic” skills (P35). The shift from disbelief to reportable failure followed three patterns. One was the accumulation of significant incidents: “there was a multi-faceted failure on his part to really do the job to the point where I and everyone was very concerned about him and his abilities” (P34). Another was the discovery of a “disconcerting” error after many minor, excusable deficits: “missing something so obvious and egregious to me was a huge red flag” (P37). The third was having someone else, like a colleague or trainee, alert them to a troublesome experience that illuminated a deficit they had been “a little bit blind to” (P42): “it wasn’t me [an obstetrics attending] specifically it was a family doctor that said ‘you know what--this guy is unsafe’” (P38).

Recollections of reportable failure radiated frustration, even outrage: “It was a disaster” (P2) “he’s a disaster” (P26) “he was dangerous” (P28) “entirely inappropriate” (P30) “we’re not going to tolerate it—period—full stop” (P34). Some expressed a duty to prevent harm to patients, as well to the profession, by documenting evidence of “dangerous patient care” and needing many colleagues to document it too: “if we put it all down together it’s a strength in numbers, we can’t really be questioned” (P40). They acknowledged that these trainees gained a reputation that changed how they were assessed: “once you’ve made a mistake, you’re under a microscope and suddenly everything you do is examined that much closer” (P19). Experiences with failing trainees profoundly impacted programs through direct changes to rules, curricula or assessment to prevent the same gaps from happening again.

Discussion and Conclusions: Our results suggest that the decision to fail an underperforming trainee involves a process of discovering, verifying, and acting on a problem. The process from disbelief to reportable failure appears to be accompanied by a shift from advocating for the trainee to protecting patients and the profession from the trainee. This shift is reminiscent of the psychological process of a tipping point where people first realize that noise is signal and cross a threshold where the pattern is no longer an anomaly. This begs caution because tipping points happen faster and with less evidence than we think they do, threatening veracity. Failure to fail has the potential for harm but more and faster
identification of failure is not a flawless solution. Widespread awareness of tipping points and the switch from supportive to corrective roles may mitigate both extremes.
#EP4: ePoster - Surgery Education

#EP4.1 Application of Blended Teaching Strategies to Improve the Integrity With Postpartum Hemorrhage Care Among Nursing Staff in a Maternity Ward (8770)

**Date of Session:** 29 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
Hsiao-Yun Liu, Chang Gung Memorial Hospital, Taiwan*  
Pei-Chi Liu, Chang Gung Memorial Hospital, Taiwan  
Chi-Ning Huang, Chang Gung Memorial Hospital, Taiwan  
Heng-Feng Cheng, Chang Gung Memorial Hospital, Taiwan  
Chen Li Chen, Chang Gung Memorial Hospital, Taiwan  
Lun-Hui Ho, Chang Gung Memorial Hospital, Taiwan

**ABSTRACT:**

**Background:** Postpartum hemorrhage is the leading cause of maternal mortality. Severe postpartum hemorrhage can be life-threatening and require complete and immediate care. However, in this clinical and critical situation, it is not easy to provide proper and comprehensive nursing care. Let us have the motivation to focus on the problem to improve the quality of care. According to our assessments to maternity nurses: the integrity rate of postpartum hemorrhage care was 72%, the knowledge of postnatal hemorrhage care was 70%, and the satisfaction of nursing care by women who experienced postpartum hemorrhage was 78%.

**Summary of Work:**  
1. Establish a clinical guideline of postpartum hemorrhage care to all staff in the maternity wards.  
2. Conducted in-service educational training courses for postnatal hemorrhage care: training courses divided into two parts. Firstly, using e-learning via videos for nurses studying privately. And then, the implementation of the Interactive Response System (IRS) -Kahoot and discussion was performed to evaluate the effectiveness of the online education training courses.  
3. The Application of Simulation in postpartum hemorrhage care to improve the emergency response ability of clinical nurses.  
4. Implement the appropriate postpartum hemorrhage care checklist to evaluate the nursing care process of postpartum hemorrhage.

**Summary of Results:** The result showed that, the integrity rate of postpartum hemorrhage care was improved to 90%, the knowledge of postpartum hemorrhage care was improved to 93%, and the women’s satisfaction of nursing care as 95%. If professional nurses are trained systematically and adequately, the quality of clinical care would improve, and patients satisfaction with the nursing care service will increase as well.

**Discussion and Conclusions:** Our objectives of the project were to improve the integrity rate and knowledge of postpartum hemorrhage care to 90% respectively and the women’s satisfaction of postpartum hemorrhage to 90%.

**Take-home Messages:** Using the advanced teaching of blended learning to introduce professional skills, the nurses could master self-learning progress. This fosters an atmosphere of improving professionalism, increasing the confidence of nursing staff in-service, and improving clinical care quality.
#EP4: ePoster - Surgery Education

#EP4.2 Evaluating the Delivery of Suturing Workshops to Medical Students During the COVID-19 Pandemic (9231)

Date of Session: 29 August 2021
Time of Session: 18:00 to 19:30

AUTHOR(S):
Kelly Ward, Warwick Hospital, Warwickshire, UK*

ABSTRACT:
Background: The COVID-19 pandemic has led to barriers in surgical education. Elective theatre lists have been cancelled, healthcare resources are stretched and contact time with patients has decreased. Opportunities for medical students to attend theatre and learn surgical skills such as suturing have become limited.

Summary of Work: Throughout the pandemic, we have continued to provide in-house simulated suturing workshops for Warwick and Buckingham medical students. Workshops lasted 3 hours and were delivered to groups of 3-4 students. COVID-19 safety measures were placed including, social distancing, mask wearing and decontamination of equipment. The workshop included a lecture, a physical group demonstration, student practice on synthetic skin pads, and immediate personalised feedback. Student feedback (n=15) was collected after the workshop using a standardised feedback form.

Summary of Results: All students were able to independently perform interrupted sutures at the end of the workshop. 93% of students described the content and delivery of the workshop as Very Good. All other students rated the workshop as Good. The students enjoyed the in person demonstration and the ratio of students during the workshop. Other points noted, were that immediate and individual feedback was helpful, and that the workshop provided a comfortable environment to ask questions. One student suggested that providing a one-to-one demonstration of suturing could improve the session.

Discussion and Conclusions: Considering the current pressures on elective theatre lists, it is important that simulated suturing workshops continue for the education of medical students. By using small groups and safety precautions, simulated suturing sessions can safely be delivered during the COVID-19 pandemic. Providing in-house small group suturing sessions was time-consuming, so not all centres may have the resources to provide this opportunity to medical students. In person delivery of suturing sessions has many benefits including physical demonstration and immediate student feedback.

Take-home Messages: 1. Simulated suturing workshops can safely continue in the COVID-19 pandemic 2. In person facilitation of these sessions is important for physical demonstrations and the delivery of immediate student feedback.
Face, Content and Construct Validity of a novel portable Hip Arthroscopy Simulator (7873)

Date of Session: 29 August 2021
Time of Session: 18:00 to 19:30

AUTHOR(S):
Aoife Feeley, HSE, Ireland*
Luke Turley, Midland Regional Hospital Tullamore, Ireland
Eoin Sheehan, Midland Regional Hospital Tullamore, Ireland
Khalid Merghani, Midland Regional Hospital Tullamore, Ireland

ABSTRACT:
Background: Proficiency in hip arthroscopy is associated with a steep learning curve. Virtual reality simulation has been proffered as a solution to condense the learning process. The COVID-19 pandemic highlighted the potential benefits of mobile training tools available to surgical residents to continue development of surgical skills while away from theatre. The aim of this study was to assess the face, content and construct validity of a portable hip arthroscopy simulator.

Summary of Work: Participants were recruited from a regional orthopaedic centre, and categorised into novice (0 arthroscopies), intermediate (1-29 arthroscopies) and expert (>50 arthroscopies) groups based on self-reported experience in arthroscopy. Face and content validity was evaluated by feedback from users immediately following completion of modules. Construct validity was assessed, evaluating improvement through objective measurements including time taken and subjective measurements including simulation derived measurements. Scores achieved by experts were set at the level at which proficiency was demonstrated. Participant feedback on perceived educational use and satisfaction was collected following completion.

Summary of Results: Good face and content validity was expressed by participants, with novices indicating higher levels of satisfaction. Partial construct validity was demonstrated in this simulator, with number of scope strikes within the simulator derived metrics accurately discerning levels of experience. Novices had a mean of 5 strikes per attempt (SD5), intermediates a mean of 5.8 strikes (SD4.1). There was a significant difference between expert and novice groups (p=0.01), and expert and intermediate groups (p=0.002). No significant difference between overall performance scores achieved by participants in expert, intermediate and novice groups (62% vs. 55% vs. 50%, p=0.15).

Discussion and Conclusions: Face and content validity were established on the module, with sufficient levels of realism reported by all participants. Partial construct validity was demonstrated in this simulator, with 1 of the 4 simulator derived metrics accurately discerning levels of experience. Future focus on tactile feedback available to users may improve ease of use for surgical trainees, and help delineate levels of experience.

Take-home Messages: Good face and content validity was demonstrated. Partial construct validity was demonstrated, however further work is required to solidity module haptics to differentiate levels of experience.
#EP4: ePoster - Surgery Education

#EP4.4 Multicentre Co-ordinated Hybrid Surgical Cadaver Dissection Courses - Overcoming the Challenges due to the Covid-19 Pandemic (9436)

**Date of Session:** 29 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
Swagatam Banerjee, University Hospital Coventry and Warwickshire, UK*  
Vinod Menon, University Hospitals Coventry and Warwickshire, UK  
Brian Burnett, University Hospitals Coventry and Warwickshire, UK  
Dheeraj Karamchandani, University Hospitals Coventry and Warwickshire, UK

**ABSTRACT:**  
**Background:** Surgical cadaver dissection courses are a valuable tool in surgical education as simulation operations help surgeons develop and refine their skills with confidence. Global restrictions on travel and aggregation due to the Covid-19 pandemic presented unprecedented challenges for the organisation of such courses. A multicentre co-ordinated hybrid surgical cadaver dissection course was organised to overcome these challenges and discover new horizons of surgical training.  
**Summary of Work:** Five centres around the world spanning different time zones were simultaneously linked by high quality two-way video connections. Live cadaver dissection was done by otolaryngologists and cardiac surgeons at different sites. The format of the course was similar in all the centres enabling delegates to perform simulated procedures simultaneously under shared training guidance.  
**Summary of Results:** The course organisation was commended by the delegates as they benefitted from remote instructional demonstrations from pioneers in their respective fields. Extensive discussions with sharing of knowledge between different centres made the interaction lively and enriching. The usual format would be faculty members travelling across centres on various dates and although cutting edge technology was used to organise this course, the average costs were much less taking conveyance and accommodation expenses into consideration.  
**Discussion and Conclusions:** The advent of technology has bridged the communication gap between centres of excellence. Use of such technology should be increased in surgical education courses to do away with logistics of travel, accommodation and consequent loss of valuable professional time. Multicentre courses help in discussions between a multitude of people who would not have been together in case of a simple face-to-face course. Feedback from such courses should be utilised to fine-tune their planning and execution so that distance is not a barrier to learning anymore.  
**Take-home Messages:** Multicentre co-ordinated surgical instructional courses are an excellent alternative to traditional courses for dissemination of knowledge and training. The Covid-19 pandemic has led to the boom of a plethora of remote communication solutions and they should be utilised in the future to further improve training programmes.
E#EP4: ePoster - Surgery Education

#EP4.5 SCALPELS (Simulated Case of Abdominal pain and Learning about Patient Experiences during Laparoscopic Surgery) (8827)

**Date of Session:** 29 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
Maisha Shahjahan, George Eliot Hospital NHS Trust, UK*  
Hope Poole, George Eliot Hospital NHS Trust, UK  
Joshua Nicholls, George Eliot Hospital NHS Trust, UK  
Louise Harmer, George Eliot Hospital NHS Trust, UK  
Samantha Cook, George Eliot Hospital NHS Trust, UK  
Yusuf Patel, George Eliot Hospital NHS Trust, UK

**ABSTRACT:**  
**Background:** Exploring surgery from a patients perspective early in medical school can promote patient-centred care. Students in their first clinical placement shadow surgical patients from admission to discharge but during COVID-19 this was challenging due to the need to reduce unnecessary risk for students and patients. To address this we replicated the experience virtually, designing and implementing SCALPELS (Simulated Case of Abdominal pain and Learning about Patient Experiences during Laparoscopic Surgery), an interactive and immersive virtual patient journey.

**Summary of Work:** SCALPELS is a three-hour session led by a Clinical Education Fellow, starting with an in-person tour of operating theatres to facilitate experiential learning, followed by a face-to-face tutorial for deep learning. The tutorial maps the simulated patients journey through consecutive steps from presentation to discharge, discussing themes such as theatre etiquette to complement the tour. We utilised lecture-based and gamification teaching and an instructional video of laparoscopic appendicectomy from the Incision website. We captured the patients perspective through photos and videos taken from their point-of-view, and promoted a biopsychosocial model approach to their care.

**Summary of Results:** The session was evaluated upon commencement and completion using a numerical scale (n=35). We assessed confidence in nine domains: differential diagnoses, pre-operative assessment, role of team, theatre etiquette, anaesthesia, scrubbing in, stages of laparoscopic appendicectomy, recovery and discharge. 1 represented not confident and 10 extremely confident. Results were statistically significant (p<0.05), showing increased confidence in each domain, with average increase in score of 4.55 across all domains.

**Discussion and Conclusions:** Clinical environments, especially operating theatres, can be intimidating for new clinical students. Though not designed to replace learning from real patients, our results show SCALPELS significantly increases confidence and students stated it was a great first experience of theatre. Limitations included a small sample population; advantages included a standardised case and reproducible experience for all students. Future projects could include live-streaming or pre-recording the tour for total virtual delivery.

**Take-home Messages:** SCALPELS has potential to be rolled out to other Trusts as an introduction to operating theatres in the first surgical placement and to increase learner understanding of the patients perspective. The concept could be developed for senior trainees and allied healthcare professionals.
#EP4.6 Where are the women in surgery? Female medical students’ perceptions of barriers facing female surgeons (8227)

**Date of Session:** 29 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
Sonam Patel, University College London, UK*  
Maria Georgi, University College London, UK  
Khimi Karavadra, University College London, UK

**ABSTRACT:**

**Background:** Despite annual intakes of UK medical school cohorts evidencing a 55% female contingent, only 28% of these women eventually pursue a career in surgery via higher surgical training and 11.1% progress to consultancy. The reasons accounting for the decline of women from medical school to consultancy are yet to be understood. This study examines the perceptions of female medical students on barriers which may face women in surgery.

**Summary of Work:** A cross-sectional analysis of 140 female medical students was conducted.

**Summary of Results:** There were 119 female respondents. 91% agreed that men and women are equally as surgically skilled, however, 61% felt that it is more difficult for a woman to progress in her surgical career than it is for a man. 40% felt that a woman is more likely to succeed in her surgical career if she chooses not to have a family and 64% agreed that rigid training structures are a barrier to mothers pursuing a surgical career. 67% felt that an old boys club attitude currently exists across surgical specialities. 54% agreed that for a woman to succeed in a surgical career, she has to have a strong personality. 67% stated that lack of female mentorship is a barrier for women pursuing a surgical career.

**Discussion and Conclusions:** The findings highlight the nature of the perceptions female medical students have of a surgical career. By identifying the most common misconceptions, this can allow surgical organisations to employ a more targeted strategy to encourage more women into the field.

**Take-home Messages:** Despite women comprising more than 50% of medical school enrollees, progression to surgical training and leadership positions are limited. Rigid training structures, balancing parenthood and surgery and gender bias are factors that deter women from pursuing a career in surgery. Implementing mentorship programs, training and career talks and peer support networks may encourage more women to go into surgery.
#SC15: SC - Postgraduate Education 2

#SC15.1 Virtual reality (VR) informative aids increase residents’ atrial fibrillation (AF) ablation procedures-related knowledge and patients’ satisfaction (8108)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:00 to 18:15

**AUTHOR(S):**  
Ying-Ying Yang, Taipei Veteran General Hospital, Taiwan*  
Ling-Yu Yang, Taipei Veterans General Hospital, Taiwan  
Shou-Yen Kao, Taipei Veterans General Hospital, Taiwan  
Chen-Huan Chen, National Yang-Ming University, Taiwan  
Shih-Lin Chang, Taipei Veterans General Hospital, Taiwan  
Wayne Huey-Herng She, Taipei Veterans General Hospital, Taiwan

**ABSTRACT:**  
**Background:** Atrial fibrillation (AF) is the most common cardiac arrhythmia and increasing numbers of patients receiving AF ablation nowadays. So, in cardiology division, residents need to familiar with the AF ablation procedure-related knowledge for primary care. This study evaluated the baseline residents and patients self-efficacy to AF ablation procedure-related knowledge, developed the specific virtual reality (VR) informative aids, evaluated the effects of VR training and resident-led VR aids-based patient education on their self-efficacy, in the aspects of familiarity, confidence and anxiety, and satisfaction.

**Summary of Work:** From 2019, April to 2020, April, this 1-year prospective pre- and post-study was undergone in cardiology division. Between 2019, April to 2019, December, the experienced physicians were invited to develop virtual reality (VR) informative aids for AF ablation procedure-related knowledge. Between January 2020 to April 2020, newly developed VR informative aids was implemented in educational program of training rotated residents for giving patient education.

**Summary of Results:** A total of 20 residents and 32 patients were enrolled. The baseline self-reported self-efficacy and knowledge score were relatively low among rotated residents and their patients. In addition to high level of satisfaction, self-efficacy and knowledge score of residents and their patients were increased after VR aids-based training and resident-led patient education. Higher degree of improvement in self-efficacy was noted among patients with depression/anxiety history than those without history. The follow-up assessments among residents showed that the positive effects of VR aids was sustained until 2 weeks later.

**Discussion and Conclusions:** Overall, residents and patients reported that the VR aids increase the effectiveness of patient education, achieve the purpose of a paperless environment, and motivate them to recommend it to others. Implementation of resident-to-patient education have a positive impact on trainees and patients understanding about AF ablation procedures-related knowledge.

**Take-home Messages:** In conclusion, residents and patients reported that our newly developed VR informative aids increased the effectiveness of residents educational services, achieved the purpose of a paperless environment, and motivated residents and patients to recommend it to others. Implementation of resident-to-patient education have a continuous positive impact on trainees and patients understanding about AF ablation procedures-related knowledge.
#SC15: SC - Postgraduate Education 2

#SC15.2 We don’t really talk about it: Role modeling and coping with patient deaths in residency (8170)

Date of Presentation: 29 August 2021
Time of Presentation: 18:15 to 18:30

AUTHOR(S):
Heather Hartman-Hall, MedStar Health, USA*

ABSTRACT:
Background: Medical residents may experience distress and having learning needs after the death of a patient, but may not be well-prepared to manage these aftereffects. We examined what intensive care unit (ICU) attendings are role modeling to internal medicine (IM) residents about coping with patient deaths.

Summary of Work: In this qualitative study approved by the MedStar IRB, interviews were conducted with 15 IM residents (9 female; 8 PGY1, 4 PGY2, 3 PGY3) and 7 of their ICU attendings (2 female; years in practice ranged from 1.5-34) in the MedStar Health IM, Baltimore residency program. Using grounded theory methodology, a model for understanding role modeling about coping with deaths in the ICU was developed.

Summary of Results: Themes included: 1. Residents and attendings agree on what makes some patient deaths more difficult for the physician, 2. Deaths are rarely discussed by the ICU team, 3. Residents often worry about their own competence after a patient death, 4. Residents are aware of their own reactions after a patient death but rarely see attendings reactions. Attendings and residents agree that discussion of patient deaths would likely be helpful for resident learning and development of coping skills.

Discussion and Conclusions: Gaps exist in role modeling to IM residents how to cope with patient deaths by ICU attendings, reducing learning opportunities for residents. Residents and attendings cite the possible benefit of team debriefings after a patient death to address these gaps. We propose that ICU attendings offer an opportunity for the team to discuss patient deaths briefly, especially after deaths likely to be more difficult to close these educational gaps.

Take-home Messages: 1. Residents and attendings agree on what makes a patient death more difficult for the physician. 2. Residents experience a range of emotional reactions after a patient death, but may not observe attendings having any reaction. 3. Residents may worry about their own competence after a patient death. 4. Role modeling alone may not address resident learning needs in coping with patient deaths. 5. Short team debriefings after a patient death could address the gaps in role modeling identified.
#SC15: SC - Postgraduate Education 2

#SC15.3 Creation and implementation of a diversity, inclusion and mentorship strategy (8794)

Date of Presentation: 29 August 2021
Time of Presentation: 18:30 to 18:45

AUTHOR(S):
Tatjana Topalovic, AO Foundation, Switzerland*

ABSTRACT:

Background: The AO recognizes that a diverse and inclusive community of surgeons, operating room personnel, health care professionals, and researchers is of paramount importance in its mission of promoting excellence in patient care and outcomes. As a global leader in clinical education and research, the AO needs to better reflect the concerns, perspectives, and aspirations of the young health care professionals that we strive to educate, as well as the patients that we are committed to serve.

Summary of Work: The Opportunity, Diversity and Inclusion (ODI) initiative was launched in December 2018 with a remit to identify obstacles and opportunities for change in the context of equity and diversity within the AO and its membership. Underrepresentation of various gender, racial, and socioeconomic identities are broadly visible across all aspects of the AO organization. The ODI Working Group undertook a systematic review of the current landscape across the clinical divisions, with the expectation that the data from this review would allow identification of bottlenecks created by policies and/or procedures that serve as barriers within the organization, as well as potential intervention points.

Summary of Results: The organizational structure of AO Access facilitates establishing outcome measures and achievable goals, based on qualitative and quantitative methods and is governed by its terms of references (ToR). AO Access acts as a strategy and implementation body to create, change, and/or implement current policies to meet the changing needs of the AO community. AO Access consists of a team of health care professionals (HCPs) including surgeons, researchers, educators and staff across the AOs regions and clinical specialties.

Discussion and Conclusions: In order to expand and enhance engagement of current and future orthopedic surgeons globally within AO, a need exists to understand how various individuals become, and remain, involved with the organization. Limited data exists on the experiences or participation characteristics of various identity groups (gender, race/ethnicity, age) within AO.

Take-home Messages: Enhancing access, removing unreasonable barriers to progression, and creating a culture of inclusivity, mentorship, and support will be critical to the future success of the AO in attracting and retaining the most talented faculty and trainees for its educational offerings.
Date of Presentation: 29 August 2021
Time of Presentation: 18:45 to 19:00

AUTHOR(S):
Alison Gifford, University of Dundee, UK*
Martin Kirkpatrick, University of Dundee, UK
Michael Griffiths, University of Liverpool, UK
Colin Dunkley, Sherwood Forest Hospitals NHS Foundation Trust, UK
Jo Wilmshurst, University of Cape Town, South Africa
Philippa Rodie, British Paediatric Neurology Association, UK

ABSTRACT:
Background: Epilepsy affects children across the world, with 80% of epilepsy sufferers living in low or middle income countries. The PET (Paediatric Epilepsy Training) programmes, with 14,000 participants across five continents, include a one-day standardised course promoting evidence-based, safe practice delivered by a trained faculty to a target audience. Course evaluation has been integral to the PET1 since 2011. A total of 4481 participants across 140 courses, 14 countries and 9 years (2011-20) have been evaluated.

Summary of Work: The BPNA uses the Kirkpatrick evaluation model to measure course effectiveness through outcome evaluation. A total of 4481 participants were evaluated using participant reaction forms. A knowledge quiz was provided to participants (n=917) pre- and immediately post-course (n=24) between 2017-18. A change in behaviour survey was sent electronically to participants (n=1361) from 11 countries between 2018-19.

Summary of Results: Over time, and following four curriculum revisions, the proportion of participants rating the course as excellent or good increased (93%-99%). The pre- and post-knowledge quiz was completed by 762 (83%[762/916]) participants (HICs 93%[525/664]; LMICs (79%[237/252]). The proportion of questions correctly answered pre-course was higher among HICs compared to LMICs participants (85% versus 65%). However, the change in the proportion of questions correctly answered post course was higher among participants from LMICs (16% versus 6%). 76% of responders reported the PET course had improved their clinical practice around diagnosis and management for childhood epilepsy. 81% of responders stated the PET course had prompted them to improve their clinical service - over a third of responders reported improvement in management of prolonged seizures in their hospital. 71% reported initiating or improving local epilepsy training.

Discussion and Conclusions: We have not identified any other systematic evaluations of international epilepsy training courses in published literature. This assessment demonstrates the courses are enjoyed and respected by a wide variety of participating professionals. Importantly, it shows the courses contribute to critical improvements in knowledge and behaviour change among participants to improve management for children with epilepsy.

Take-home Messages: Our evaluation demonstrates highly positive feedback for our PET1 course among participants for course satisfaction (reaction), knowledge gained (learning), and changes in clinical behaviour following course attendance both nationally and internationally.
ABSTRACT:

Background: Medical handover represents an excellent opportunity for clinical education. However, the limited time allotted for handover makes it challenging to deliver both a quality handover and effective education. Increased use of technology in response to the Covid-19 pandemic has created opportunities for innovation in this area.

Summary of Work: As part of a wider project to improve the quality of handover at our tertiary paediatric hospital, we reviewed the literature to establish the utility of various types of education in handover. In September 2020 we surveyed 47 trainees for their experience. Subsequently we implemented a new, virtual educational platform for the discussion of patients encountered in handover.

Summary of Results: The literature suggests that education in handover is limited by time constraints, and that patient care must take precedence. This was reflected in our survey (response rate 18/47; 38%), in which trainees reported that 45% of handovers ran over time and 56% of respondents stated that handover should not include formal education. However, the literature showed that learning from specific patients and teachable moments in handover is beneficial and that the people involved must be proactive about identifying and exploiting these moments. Given our survey results we moved related education into a virtual forum (a Microsoft Teams channel) that can be accessed at any time. Trainees and consultants were asked to post educational content related to recent patients, and discussion was encouraged and supported. Certificates were awarded for the most engaging content to further encourage involvement.

Discussion and Conclusions: Our unique, evidence-based approach to learning by linking specific patients encountered in handover to online educational content removes the potential tension between patient care and education.

Take-home Messages: 1) Effective handover can ensure patient safety whilst providing valuable learning opportunities. 2) Delivering educational content via a virtual forum allows an additional useful learning tool and maintains the teachable moments and case-linked learning which handover traditionally provides.
#SC15: SC - Postgraduate Education 2

#SC15.6 Moving beyond the conscious competency learning matrix. Contextualised reflective competence: a new learning model promoting reflective practice for clinical training (7867)

Date of Presentation: 29 August 2021
Time of Presentation: 19:15 to 19:30

AUTHOR(S):
Andrew Lane, Sydney Medical School, Australia*
Christopher Roberts, Sydney Medical School, Australia

ABSTRACT:

Background: Reflection is a metacognitive process that allows self-regulation and the promotion of lifelong learning, and an essential requirement to develop therapeutic relationships and professional expertise. The medical literature is lacking on guidance for learners and educators to develop reflective abilities. We developed a framework called contextualised reflective competence (CRC), to assist students/trainees and educators in developing, maintaining, and ensuring reflective practice in the context of professional experiences.

Summary of Work: The CRC framework was based around our program of research into junior doctors delivering open disclosure communication after medical error. We used the conscious competency framework of learning as a conceptual framework to illuminate our research findings, as it resonated with the interns rationalisation of the difficulties in their clinical practice and the clinical environment around them.

Summary of Results: The current understanding of the conscious competence learning framework needs to be reconceptualised, as it lacks vital concepts, the promotion of ongoing reflection practice, accurate assumptions of the learners original mindset, variations in everyday performance, and erosion of skills. In our framework, if the learner possesses appropriate reflective practice, CRC, they move though the upper loop, achieving unconscious competence. If the learner does not possess CRC, they move though the lower loop into generalised reflective incompetence (GRI), characterised by cognitive dissonance and rationalisation, leading to errors and non-learning. GRI is a temporary state with appropriate supervision. Our research demonstrated that conceptually CRC was related to critical cognitive frameworks, such as intellectual humility, situational awareness, the development of a growth mindset, and belongingness.

Discussion and Conclusions: The Contextualised Reflective Competence framework promotes learners understanding of their core competencies and provides opportunities for personal critical reflection. It provides educators and supervisors with a diagnostic pathway for those with reflective incompetence.

Take-home Messages: The CRC framework should be used in the clinical environment where issues of competence are raised in professional experiences.
Mapping recent developments in the CPD landscape in health professions: A scoping review of knowledge syntheses

Date of Presentation: 29 August 2021
Time of Presentation: 18:00 to 18:15

AUTHOR(S):
Anita Samuel, Uniformed Services University of Health Sciences, USA*
Ronald Cervero, Uniformed Services University of Health Sciences, USA
Steven Durning, Uniformed Services University of Health Sciences, USA
Lauren Maggio, Uniformed Services University of Health Sciences, USA

ABSTRACT:
Background: Samuel et al conducted a scoping review of knowledge syntheses examining the effect of Continuing Professional Development (CPD) on health professionals practice and patient outcomes on syntheses published from 2008-2018. In an update, this review seeks to answer: What recent developments have appeared in the CPD landscape in the health professions?

Summary of Work: The authors replicated Samuel et al.'s study by limiting the literature search to retrieve syntheses published from 2018 to 2020. PubMed, Embase, CINAHL, Scopus, ERIC, and PsycINFO databases were searched focusing on independently practicing health professionals and reported outcomes at Kirkpatrick's levels 3 and 4.

Summary of Results: 1308 citations were retrieved. Knowledge syntheses included in the original study were removed leaving 16 new syntheses that satisfied the inclusion criteria. More than half the syntheses (n=9; 56%) included face-to-face and/or eLearning components in the CPD offerings. Informal CPD interventions expanded with six syntheses including mentor and patient-mediated interventions. Multiple studies (n=5; 31%) reported cost considerations for CPD. While all syntheses reported outcomes at Kirkpatrick levels 3 and 4, only 44% (n=7) of syntheses reported outcomes at Kirkpatrick level 4.

Discussion and Conclusions: CPD in the health professions is broadening its scope by embracing informal interventions such as mentors and patient-mediated interventions and integrating eLearning components. eLearning allows for instructional continuity even in times of social distancing; thereby creating a seamless CPD experience. Cost consideration of CPD offerings are gaining attention, which is critical at this time given the resource constraints experienced by all healthcare facilities. Return on investment is entering the conversation and there is a suggestion to expand the Kirkpatrick four level evaluation model to a five-level model where level 5 measures return on investment as in the Philips ROI model. The financial implications of CPD are making eLearning interventions more appealing. The lack of studies reporting outcomes at Kirkpatrick level 4 remains a concerning trend.

Take-home Messages: CPD providers are exploring new informal approaches to training. Increased focus on cost considerations is leading to greater adoption of eLearning options to defray costs. Trends that were emerging in the literature from 2008-2018 are now mainstream and charting new directions for CPD in health professions.
#SC16: SC - Continuing Professional Development 1

#SC16.2 Changing landscape of a CPD conference - what have we achieved and where are we going? (9302)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:15 to 18:30

**AUTHOR(S):**  
Juha Pekka Turunen, Finnish Medical Society Duodecim, Finland*  
Hannu Halila, The Finnish Medical Association, Finland  
Leila Niemi-Murola, University of Helsinki, Finland

**ABSTRACT:**

**Background:** Finnish Medical Congress (FMC) has for 50 years been the largest annual medical conference in our country. During the past 15 years the importance of general national congresses has decreased in favor of focused specialist meetings. Most participants of FMC work in primary care. Now the pandemic has changed the landscape by introducing virtual congresses. The aim of this study is to survey past trends, factors of success and find a way forward.

**Summary of Work:** We retrieved the programs of FMC cohorts (2008 - 10) and (2018 - 2020) per congress and each individual course and number of participants. We analyzed the programs in order to find the distribution of competencies and learning. During the past seven years we have conscientiously encouraged the presenters to include all the CanMEDS competencies and interactive learning methods.

**Summary of Results:** Comparing the earlier cohort (2008 - 10) to the latter (2018-2020) the number of sessions focusing on medical expertise has decreased from 77 - 80% to 68 - 71%. Communication and collaboration instead have been emphasized in the latter cohort. There have not been any major changes in Blooms taxonomy. The most popular sessions contain views of different collaborating specialities. The number of interactive elements has increased substantially in ten years.

**Discussion and Conclusions:** Specialist societies submit proposals of courses for the program committee of the annual FMC. We have specified that the most popular sessions have been practical and included interprofessional perspectives and interactive elements. In our study the composition of courses has become more versatile over the years. Modern doctors are not attracted only by information sharing but also by deeper learning.

**Take-home Messages:** During the ten years the perspective of general medical congress education has shifted from traditional, expert centered sessions to interactive, practical sessions including interprofessional elements. This will be important when designing post COVID medical congresses.
**ABSTRACT:**

**Background:** There is little or no difference between online and in-person education for health care professionals in their knowledge acquisition. However, for occupational therapists who traditionally use in-person education and value the social aspects of learning, the effectiveness of these two educational methods has not been well compared. Thus, this study compared the effectiveness of an online educational workshop with a traditional in-person workshop for OTs focused on the Do-Live-Well (DLW) health promotion framework.

**Summary of Work:** Researchers used an explanatory sequential mixed-methods study design. We analyzed quantitative data using descriptive and inferential statistics to compare the effectiveness of the two educational methods at three points (pre-, post-, and 6-month follow-up). The primary outcome was knowledge change, and the secondary outcomes were changes in factors influencing the use of DLW in practice, satisfaction with the workshops, and the actual use of DLW; the questionnaires were developed based on the Diffusion of Innovation theory. In the qualitative phase, researchers conducted semi-structured individual interviews at follow-up using an interpretative description approach. The data were analyzed using a six-step thematic analysis process.

**Summary of Results:** From the quantitative data, the researchers found no statistically significant differences in knowledge change at the three time points (p > 0.57 - 0.99). However, statistically significant differences existed between groups in factors influencing adoption of DLW principles in practice (p > 0.001) and satisfaction with the workshop (p > 0.0005) at the post-test. After analyzing the qualitative data, researchers identified five themes in the learners workshop experience: (a) synchronous in-person interaction, (b) flexibility in online learning, (c) ease of access to learning, (d) comfortable learning environment, and (e) relevance to practice and interest.

**Discussion and Conclusions:** The quantitative findings indicate that online learning is as effective as in-person learning in terms of knowledge change, and the qualitative findings suggest that both learning methods have unique ways to support knowledge acquisition. Adding synchronous interaction opportunities may improve learners educational experiences with online learning.

**Take-home Messages:** Online learning could be more satisfying by providing learners with an opportunity to have in-person like interactions with other learners and instructors.
#SC16: SC - Continuing Professional Development

#SC16.4 An interactive endocrine training course for nurse practitioners in a district hospital in Eastern Taiwan (8065)

Date of Presentation: 29 August 2021  
Time of Presentation: 18:45 to 19:00

AUTHOR(S):  
Fen-Yu Tseng, Taitung Christian Hospital, National Taiwan University Hospital, Taiwan*  
Yuh-Shyang Chen, Taitung Christian Hospital, Taiwan

ABSTRACT:  
Background: Certification of nurse practitioner (NP) had been established since 2006 in Taiwan. With limited resources, NPs who practice at district hospitals in rural areas may fall behind of receiving continuing education.  
Summary of Work: Taitung Christian Hospital is a small district hospital with limited resources in Eastern Taiwan. An interactive endocrine training course was developed when an endocrinologist newly joined to this hospital. The course included 6 lectures with topics of thyroid, adrenal, pituitary, parathyroid, hypoglycemia, and secondary hypertension. Topic-related cases identified from outpatient clinics or inward patients were demonstrated following each lecture. Those 1-hour lessons were scheduled with intervals of once every 2 weeks. Test 1 was held after lesson 3. Test 2 and questionnaire survey were performed after lesson 6. Each test was composed of 10 multiple choice questions with highest score as 100.  
Summary of Results: Thirteen NPs attended the endocrine training course. Their average score was 65.8 ± 14.4 and 74.2 ± 15.1 for test 1 and test 2, respectively. Twelve NPs responded questionnaire survey. With scale 1 (the least) to 5 (the most), their self-assessed understanding to thyroid, adrenal, pituitary, parathyroid, hypoglycemia, and secondary hypertension improved from 1.9 ± 0.7 to 3.8 ± 0.8, 1.5 ± 0.7 to 3.8 ± 0.9, 1.5 ± 0.7 to 3.7 ± 0.9, 1.5 ± 0.7 to 3.8 ± 0.9, 2.3 ± 0.8 to 4.2 ± 0.7, and 1.9 ± 0.7 to 3.8 ± 0.8 (paired Students t test, all p<0.0001), respectively. Majority of NPs responded high satisfaction to content, time schedule, case demonstration, and tests. They considered the training course as very helpful to enhance their medical knowledge and to improve their clinical competences.  
Discussion and Conclusions: Lectures summarized update information and highlighted key points of clinical reasoning. Case demonstration aroused NPs interest and improved their capabilities in patient care. Tests reinforced NPs drives to learn. The interactive training course improved NPs understanding of endocrine disorders. Not only NPs, other professionals including medical technologists, pharmacists, nutritionists, and nurses were attracted to attend the course voluntarily.  
Take-home Messages: Continuing education for NPs is important. To improve quality of medical care, more interactive training courses in different fields should be developed.
#SC16: SC - Continuing Professional Development 1

#SC16.5 The motivations and aspirations of nurses’ professional development and career advancement in Egypt: A qualitative descriptive exploration from a Self-determination theory perspective (8549)

Date of Presentation: 29 August 2021
Time of Presentation: 19:00 to 19:15

AUTHOR(S):
Linda Gorman, Gouna Technical Nursing Institute, Egypt*
Joan McDowell, University of Glasgow, UK
Susan Jamieson, University of Glasgow, UK
Anna ONeill, University of Glasgow, UK

ABSTRACT:
Background: Global strategic agendas for strengthening the nursing workforce have emphasised the need for nurses to participate in professional development and career advancement to ensure the upward-standing of the profession. However, key challenges within low-to-middle-income countries such as Egypt have prevented nurses from fully engaging in professional updating activities and progressing successfully in their careers. While attention has been paid to perceptions of professional development and career advancement of nurses within the international literature, an Egyptian perspective, and specifically that of Technical Diploma-level nurses within the country has not been represented.

Summary of Work: A qualitative descriptive exploratory design guided by an interpretive stance, and in-depth semi-structured interviews, were used to explore the perceptions of motivations and aspirations surrounding the professional development and career advancement of Technical Diploma nurses in Egypt. Perceptions of Technical Diploma nurse graduates (n=18) and nurse educators (n=2) from one Technical Institute of Nursing, as well as healthcare managers (n=3) from the Institute’s key stakeholder hospital were sought. Data were subjected to thematic analysis and findings informed by the conceptual lens of Self-determination theory.

Summary of Results: Three themes were prominent in perceptions of participants: 1) mechanisms for learning and development; 2) sources of support, and 3) moving up the career ladder. The theme mechanisms for learning and development consisted of two subthemes: wanting a higher degree and participating in work-related learning; whilst the theme sources of support had the sub-themes of family and marriage and organisational support.

Discussion and Conclusions: Socio-cultural, economic and environmental factors are important contextual determinants of professional development and career motivation for Technical Diploma nurses. Educational and healthcare systems within Egypt are not conducive to the stimulation of autonomous forms of motivation, meaning graduates are unable to fully actualise their professional development and career aspirations.

Take-home Messages: Self-determination theory could be a good basis in informing strategies to best support Technical Diploma nurse graduates in Egypt to develop professionally and advance in their careers. Nurse educators and healthcare managers should focus on creating conditions which enhance satisfaction of basic psychological needs and subsequent forms of autonomous motivation. This will allow graduates to become more self-determined and support optimal functioning in challenging contexts.
Using Virtual Reality Technology to Improve Medical Professionals’ Understanding of Advance Directives (7897)

Date of Presentation: 29 August 2021
Time of Presentation: 19:15 to 19:30

AUTHOR(S):
Tzu-Hung Liu, Taipei Tzu Chi Hospital, Taiwan*

ABSTRACT:
Background: The concept of advance directive (AD) has been widely recognized around the world. The Patient Autonomy Act in Taiwan, the first of its kind in Asia, went into effect in 2019. However, lack of knowledge and confidence regarding AD is a barrier for medical professionals to discuss AD with their patients. Besides, in Asian countries, physicians tend to make family-centered decisions, influencing how they can implement AD.

Summary of Work: Virtual reality (VR) is known for its immersive and interactive simulation experience and can upgrade medical education. We developed a VR teaching case to help medical professionals understand AD better, with the assessment tools integrated into the case. The participants were asked to answer seven questions embedded in the case and fill out the surveys regarding attitude toward AD and confidence in implementing AD before and after the case. They also reported behaviors related to AD before and three months after the VR experience.

Summary of Results: From July 2020 to January 2021, 18 physicians and 50 nurses joined the study, and 82% of them had no prior experience in hospice care. After learning from the VR case, all 68 participants were able to answer all seven questions correctly. The results showed a slightly more positive attitude toward AD (scores: 30.8±0.4 versus 31.5±0.3, p<.05) and more confidence in implementing AD (scores: 13.8±0.3 versus 15.9±0.3, p<.001) after the VR case. Change of AD-related behaviors (scores: 11.3±0.6 versus 13.7±0.6, p<.001) was also noted three months after the VR experience.

Discussion and Conclusions: This study found that medical professionals had better knowledge of AD, improved attitude toward AD, and greater confidence in implementing AD after experiencing the VR case. Most importantly, the findings suggested that using a VR format may help motivate medical professionals to perform essential behaviors related to AD, including introducing AD to their patients or discussing AD with their own family.

Take-home Messages: VR can be a powerful tool to enhance the knowledge and confidence of medical professionals. Our study suggests a positive educational impact of the VR experience, which may lead to behavioral changes.
#SC17: SC - Faculty Development 3

#SC17.1 Reflecting on a universal approach to faculty development provision - what has our universal faculty taught us? (8944)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:00 to 18:15

**AUTHOR(S):**  
Nancy Davies, University of Leeds, UK*  
Cait Dennis, University of Leeds, UK  
Megan Anakin, University of Otago, New Zealand

**ABSTRACT:**

**Background:** In 2016 we created TiMEtoTeach, faculty development for anyone involved in our students’ learning journey. It sought to promote the medical curriculum to clinical staff and patients and carers and highlight present of students in healthcare settings. As a communication vehicle for educational updates and training it aimed to enhance consistency of the student experience.

**Summary of Work:** Through workshops and pop-up sessions, we engaged with clinical, administrative, and auxiliary staff as well as patients and carers. Through simple, and adaptive mechanisms we have developed professionals and public alike providing the same educational resources and opportunities for both. With focus on conversation-led, bespoke training we impart only required information which is memorable and time-saving than generic training sessions.

**Summary of Results:** Iteratively adapted resources and approach make TiMEtoTeach accessible to professionals and public equally. We found that professional staff do not want educational theory-heavy workshops and that patients and carers want to know about the students they encounter and how to contribute to their education. These two groups converge in faculty development that is simple, concise and focussed on learner needs. As such it has been possible to generate a single approach, creating a Universal Faculty.

**Discussion and Conclusions:** TiMEtoTeachs holistic approach to faculty development fosters inclusivity and accessibility and streamlines faculty development offerings. In providing a single point of truth on the curriculum and student needs we have created a network of universal faculty confident in their contribution to medical education. TiMEtoTeach is becoming a global model, we are working with faculty developers around the world to further grow Universal Faculty.

**Take-home Messages:** Medical students interact with a wide range of people when on workplace training including all workplace staff and patients and carers. We have discovered a universal thirst for knowledge about the medical curriculum and a desire to understand how to help shape the doctors of tomorrow. It is possible to create a single message for this diverse group and in so doing create a Universal Faculty.
#SC17: SC - Faculty Development 3

#SC17.2 Who you are vs. what you know: Balancing teaching in the health sciences

Date of Presentation: 29 August 2021
Time of Presentation: 18:15 to 18:30

AUTHOR(S):
Shirra Moch, University of the Witwatersrand, South Africa

ABSTRACT:
**Background:** In the Faculty of Health Sciences at Wits University we run a postgraduate diploma in health science education. Participants join the course with a professional code of conduct regarding patients, however they are challenged to extend these axiological underpinnings to their work with students. The aim is to develop practitioners who enact their roles as change agents. The purpose of this longitudinal study was to explore factors which influenced development of agency in facilitating educational change following the programme.

**Summary of Work:** Volunteers from the class of 2016 were interviewed on two occasions, once in 2018 and once in 2021. These individual interviews were audio-taped then transcribed verbatim and coding of data was developed using MAXQDA (Release 20.3). The interpretive gaze of this study was the Specialization dimension of Matons Legitimation Code Theory (LCT). Transcripts were coded according to dispositions, and ways of being of the knowers participating in the course as well as what was valued as knowledge in the field of health science education.

**Summary of Results:** In the first interviews two years after the course, all participants described their learning as transformative, influencing their identities as novice educators in the health sciences. Despite this self-concept, some were reticent in advocating for changed educational practices within their environments. A code clash highlighted this agential constraint evidenced by a recognition of the social relations inherent in the academic and hospital hierarchy. In the second set of interviews, three years after the first, and five years after the diploma, most diplomates had developed a strong identity as an educator, having progressed in the professional hierarchy and contributing meaningfully to the faculty education project. Factors enabling agency were highlighted by inclusion in a community of practice; the demand for educational agility in response to remote emergency teaching during the Covid-19 pandemic; and mastery of the discourse.

**Discussion and Conclusions:** An analysis of the developing axiological gaze of diplomates as knowers in relation to the knowledge valued could enhance lecturers implementation of improved educational practices.

**Take-home Messages:** LCT can highlight programmatic and institutional factors which influence educational outcomes following a longitudinal professional learning programme.
The pull of the disciplines: The perils of neglecting interdisciplinary teams in health professions education (7926)

Date of Presentation: 29 August 2021
Time of Presentation: 18:30 to 18:45

AUTHOR(S):
Tracey Collett, Peninsula Medical School, UK*
Julie Browne, School of Medicine, Cardiff University, UK

ABSTRACT:
Background: Interdisciplinary / inter-professional working is an accepted standard in clinical settings, but little is known in health professions education (HPE) about the everyday work of the interdisciplinary educational teams who deliver integrated curricula. Interdisciplinary teams in HPE differ fundamentally from mono-disciplinary teams but this is rarely acknowledged. Interdisciplinary team members in HPE require additional unique skills that, if lacking, may affect team functioning. Ineffective interdisciplinary education teams may pose a threat to students education and well being and ultimately, the care of patients.

Summary of Work: We undertook a broad literature review between May and December 2020 exploring the embodied, emotional experiences of doctoral students and supervisors undertaking interdisciplinary projects. Using databases PubMed, Web of Science and Ebsco we identified papers combining the terms interdisciplin*, integrat* with doctora*, PhD and / or academic and higher education. The search included titles, abstracts, all dates and papers written in English. Additional references were obtained through a snowballing process. Our data set comprised 37 articles and 6 books.

Summary of Results: Despite widespread rhetoric around interdisciplinarity, a monodisciplinary culture persists in academic settings. Even in groups formed explicitly to undertake interdisciplinary work, silo thinking often prevails along with deeply rooted epistemological and ontological assumptions. The process of interdisciplinary work may be hampered (and even halted) as individuals try to reconcile a range of conflicting positions, assumptions and styles. Consequently, students (and supervisors) may experience: discipline overload • conflicting management styles • difficulties becoming established • disciplinary bias • difficulties reconciling distinct paradigms.

Discussion and Conclusions: Our research has implications for interdisciplinary team working in HPE. In academia there is a historically ingrained bias towards single-discipline thinking. To produce integrated curricula, university based healthcare courses need interdisciplinary teams who work in integrated ways; but if the process of developing and embedding interdisciplinary teamwork is neglected, individual team members will revert to single discipline behaviours and attitudes. This may lead to superficial rather than true integration, where staff and students work in proximity to each other without establishing an effective interdisciplinarity.

Take-home Messages: Effective interdisciplinary teams are a requirement of HPE. Neglecting their development will lead individuals to revert to mono-disciplinary ways of working.
#SC17: SC - Faculty Development 3

#SC17.4 Curriculum renewal towards critically conscious graduates: Implications for faculty development (9352)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:45 to 19:00

**AUTHOR(S):**  
*Julia Blitz, Stellenbosch University, South Africa*  
Susan van Schalkwyk, Stellenbosch University, South Africa  
Cecilia Jacobs, Stellenbosch University, South Africa  
Mariette Volschenk, Stellenbosch University, South Africa

**ABSTRACT:**  
**Background:** The call for curricula in the health professions to be responsive to local contexts and global healthcare priorities has catalysed renewal conversations and critical engagement with what is being taught, where it is being taught and how that teaching happens. While the central canon has remained relatively stable, curriculum documents increasingly allude to underpinning principles addressing social justice and healthcare inequity. However, implementing these curricula extends the expectations placed on educators, who may themselves not have had learning opportunities that explored critical consciousness when they were students. Thus we are unsure of how prepared these educators may feel for addressing this new curriculum content, with consequent implications for faculty development.

**Summary of Work:** We report on a qualitative study situated in an interpretivist paradigm that explored the range of understandings that health professions educators bring to teaching as they interpret the principles underpinning their curricula. Specifically we focus on the implications that these understandings have for practice, and what this means for faculty development. Thirty-four respondents, including programme co-ordinators and module leads, participated across eleven focus groups and eleven individual interviews. Data were analysed thematically.

**Summary of Results:** Identification of themes revealed cross-cutting tensions for educators in terms of weighing up clinical competence versus critical consciousness, questioning what counts as knowledge, and considering how far educator responsibility extends in preparing students to take on the role of change agent and health advocate.

**Discussion and Conclusions:** Implementing curricula that seek to foster critically conscious graduates has implications for the role and identity of health professions educators, and, by implication, for faculty development. This suggests that at a time when there are increasing calls for faculty developers to adopt a broader remit and understanding of their role, the focus and content of faculty development initiatives need to be sensitive and responsive to the changing curriculum landscape and the expectations that this places on those responsible for its enactment.

**Take-home Messages:** Calls for health professions educators to develop critical consciousness in their students has implications for what faculty developers can do in assisting educators to examine their worldviews and consider how these might influence curriculum renewal processes and teaching practices.
#SC17: SC - Faculty Development 3

#SC17.5 Exploring the experiences of GPs moving into academic roles. A case study of GP academics at a Scottish university (8219)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 19:00 to 19:15

**AUTHOR(S):**  
Zoe McElhinney, University of Dundee, UK*  
Catherine Kennedy, University of Dundee, UK

**ABSTRACT:**  
**Background:** At a time when UK general practice is facing significant challenges and departments of academic general practice in UK universities are in decline, this study examines the experiences of general practitioners (GPs) in a Scottish university department of general practice undergraduate education, exploring their reasons for entering academic careers, their routes into academic careers and their experiences of balancing clinical and academic work.  
**Summary of Work:** Carried out by an insider researcher, this cross-sectional qualitative case study examines the individual narratives of GP academics gathered through autobiographical written narrative, individual interviews and an autoethnographic study. Data analysis employed a thematic narrative approach.  
**Summary of Results:** The analysis identified three groups of participants who entered academic roles at different stages in their careers and with different prior experience. Common themes were developed from the narratives of the three distinct groups and synthesised into a composite narrative for each group. Five themes were developed through the analysis: dissatisfaction with clinical role, seeking fulfilment in working life, lack of awareness of academic general practice, challenges of navigating a route into academic general practice, the power of GP identity. The prominence of the themes varied between the groups.  
**Discussion and Conclusions:** GPs are motivated to consider academic careers through interest in education and research but also through dissatisfaction with their clinical role. Participants appeared to be searching for self-actualisation in their working lives. For many this was lacking in their clinical roles. Challenges in balancing academic and clinical work and discerning opportunities for career progression were most apparent among mid-career GPs. Participants rarely identified themselves as academics, with the GP role being retained as their primary identity. Those entering academic careers later had the most concerns about their changing professional identity and how they might be viewed by colleagues, students and society.  
**Take-home Messages:** Academic general practice is poorly understood by GPs at all stages of their careers. Academic GPs describe concerns about career prospects and changing professional identity but highly value the creativity and scholarship associated with their academic careers.
#SC17.6 Barriers and Enablers for participation in faculty development programs: The critical role of organisational support (8773)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 19:15 to 19:30

**AUTHOR(S):**  
Neha Gami, Healthplus Clinic, UAE*  
Catherine Kennedy, University of Dundee, UK

**ABSTRACT:**  
**Background:** Faculty development has been shown to be crucial in preparing medical teachers for their multiple roles (Steinert, 2010). However, whilst a mandatory Faculty Development Programme has been established for medical teachers in India, research has demonstrated that participation is poor (Zodpey et al., 2016). This research explored the attitude of the faculty towards faculty development training in Indian medical colleges in order to identify the barriers and enablers to participation, with a particular focus on Obstetrics and Gynaecology faculty.  

**Summary of Work:** This research utilised a grounded theory approach through with qualitative interviews were conducted with 17 participants at two medical colleges in Delhi, India. A thematic analysis was conducted of the interview data.  

**Summary of Results:** The research identified six main these that acted as enablers and barriers to participation in faculty development programmes: perceptions of faculty development; personal motivators; the status of teaching; the multiple roles of clinical teachers; excessive clinical workload; and organisational support. Of these, the presence or absence of organisational support emerged as the most crucial determinant of whether the faculty were able to participate in training programmes. Organisational support related not only to arranging an adequate number of workshops, providing faculty with leave and time to attend, but also the recognition of teaching excellence at the time of selection and promotions. No factors identified appeared to be unique to being Obstetrics and Gynaecology faculty.  

**Discussion and Conclusions:** This small-scale study provides an original exploration of the barriers and enablers to participation in faculty development by faculty in Indian medical colleges. Organisational support, or lack of, was identified as central determinant of participation, and crucial if participation in mandatory training programmes is to be achieved. Providing support for faculty development activities would be in alignment with the primary role of a medical college in preparing the future workforce, an issue that is of particular relevance due to the rapid expansion in the number of medical colleges in India.  

**Take-home Messages:** Participation in faculty development training could be enhanced by greater organisational support, such as providing staff with the time and resources to attend, and placing greater value on teaching in relation to selection and promotion.
#SC18: SC - Teaching & Learning and COVID-19 2

#SC18.1 Palliative care simulation workshop for 4th year medical students: A mixed methods study (8445)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:00 to 18:15

**AUTHOR(S):**  
Marisa Worsfold, University Hospitals Bristol and Weston, UK*  
Isabel Turner, University Hospitals Bristol and Weston, UK

**ABSTRACT:**  
**Background:** The importance of providing comprehensive palliative care teaching to medical students is becoming increasingly recognised. A key component is involving students in end of life conversations and the process of verifying death. A newly implemented palliative care week for 4th year medical students at the University of Bristol presented an opportunity for innovative palliative care teaching.  
**Summary of Work:** A small group palliative care simulation workshop was designed following a COVID-19 positive patient through their hospital journey, allowing students to practice conversations and verifying death in a simulated environment. An initial cohort of 20 students participated and were invited to complete surveys before and after evaluating confidence in having end of life conversations, as well as confidence and knowledge in verifying death. Focus groups are upcoming for the second participating cohort of students.  
**Summary of Results:** 20 students completed the baseline questionnaire and 18 responded to the post-session questionnaire. Confidence was assessed on a 0-10 scale. Confidence in having end of life conversations increased from 2.45 (SD 1.15) at baseline to 6.83 (SD 1.04) after the session. Mean confidence in verifying death increased from 3.15 (SD 1.57) at baseline to 7.67 (SD 1.14) after the workshop. Student knowledge in the verification steps also improved from 2.55 accurate steps initially (SD 1.19) to 5.33 steps (SD 1.08) when re-assessed 24 hours later. All results were highly statistically significant (p<0.001).  
**Discussion and Conclusions:** Small group workshops are an effective means of improving medical students confidence and knowledge in having end of life conversations and verifying death. This is an important area rarely touched on in medical school. The session was made possible during the COVID-19 pandemic by ensuring small groups and social distancing, and should be rolled out to other medical school academies to help students prepare for encounters with death and dying upon graduation.  
**Take-home Messages:** Simulated workshops are an effective way of providing palliative care education to medical students, and remain possible during the COVID-19 pandemic with adaptations.
First Aid Week: Development of interprofessional competencies by remote training (8701)

Date of Presentation: 29 August 2021
Time of Presentation: 18:15 to 18:30

AUTHOR(S):
César Lucio Ramírez, Escuela de Medicina y Ciencias de la Salud - Tecnológico de Monterrey, Mexico*
Silvia Olivares-Olivares, Escuela de Medicina y Ciencias de la Salud - Tecnológico de Monterrey, Mexico
Claudia Treviño-Alanis, Escuela de Medicina y Ciencias de la Salud - Tecnológico de Monterrey, Mexico

ABSTRACT:
Background: Life supporting first aid training is a fundamental requirement for healthcare programs. For Tec21, there is an immersive week dedicated to educating students from several healthcare programs considering an interprofessional approach. The COVID-19 pandemic forced the faculty team to redesign the First Aid Week from face to face training into a remote learning practice. The study's purpose was to assess the perceived value of competencies learning, considering first aid emergency skills and collaboration.

Summary of Work: The method was quantitative with pre-test and post-test (Cronbach alpha 0.93 and 0.97). The difference between expectations (pre-test) vs. achievements (post-test) was analyzed with Expectation Confirmation Theory (Olivares et al. 2019), which classifies results as positive confirmation (+DC), confirmation (C), and negative confirmation (-DC). A total of 253 students participated from Physician and Surgeon, Nutrition and Wellness, Dentistry, Psychology, and Biosciences. Four items were related to accident preventive teaching, basic life support, mental health first aid, role designation, and teamwork communication.

Summary of Results: Day one was about introduction and prevention. On day two, students learned about triage techniques and self-directed group simulation. The third day included a CPR practice (using a DIY mannequin). Students had lectures on psychological first aid during the fourth day accompanied by a role-playing activity with peers and instructors. Results indicated Positive Confirmation (+DC) on both competencies. The first aid skills average was 3.34 (pre-test) and 4.84 on the post-test with a p-value of 0.00. The collaboration was 4.53 on pre-test and 4.77 on post-test with a p-value of 0.00.

Discussion and Conclusions: Interprofessional Healthcare Education promotes collaboration to enhance the quality of patient care. The distance teaching format was not a barrier to learning. The lack of commercial mannequins was replaced with low-cost simulation activity from home. This innovative immersive week helped students learn about first aid and increase their ability to respond to basic emergencies.

Take-home Messages: Life supporting first aid training is a priority in healthcare programs and it can be accomplished with remote learning practices. An interprofessional approach promotes collaboration and enhances working with interdisciplinary teams.
#SC18: SC - Teaching & Learning and COVID-19 2

#SC18.3 No better replacement for face-to-face teaching and learning of Anatomy: Voices from pre-clinical students (7919)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:30 to 18:45

**AUTHOR(S):**  
Yanny Wing Yan Wong, The Chinese University of Hong Kong, HKSAR*  
Winnie Yi Lam Wong, The Chinese University of Hong Kong, HKSAR  
Hector Sun On Chan, The Chinese University of Hong Kong, HKSAR  
Olivia Mui Yung Ngan, The Chinese University of Hong Kong, HKSAR  
Florence Mei Kuen Tang, The Chinese University of Hong Kong, HKSAR

**ABSTRACT:**

**Background:** The conventional face-to-face teaching activities were strictly suspended in compliance with the social distancing measures. Cadaveric dissection and examination of plastinated specimens had been adjusted to synchronous or asynchronous online mode of delivery. This study reports the institutional response in implementing measures for remote anatomy teaching and learning in a preclinical year of a 6-year MBChB programme.

**Summary of Work:** The School organized a 2-day dissection workshop for eighty year 2 medical students when COVID-19 cases decreased to single digit in late June 2020. An anonymous e-survey was distributed to the participants assessing the students perception of e-learning and face-to-face dissection in anatomy education under the new normal learning.

**Summary of Results:** The attendance rate of the workshop was 100%. All the participants concentrated on their works and discussed with peers for their findings. From the data analysis, students opted for other study strategies in the absence of face-to-face sessions, including textbooks (90%) and e-learning modules created by teachers (81%), lecture notes only (45%) and e-learning tools from the library (16%). All respondents agreed that face-to-face dissection facilitates understanding in anatomy.

**Discussion and Conclusions:** The new normal changes the teaching pedagogical patterns and strategies in anatomy education. In addition to textbooks, students are enthusiastic about the e-learning materials that are custom-made by educators to enhance engagement of learners. Other benefits of multimedia platforms include flexibility in study schedules, standardized training and collaborative learning for professional development. It is also worth noting that many participants in this study deem dissection essential to medical training. The first-hand experiences enable students to grasp 3-dimensional human anatomy and structural-functional correlations better with variation sometime, which would facilitate the goals of Blooms taxonomy to professional competence. Face-to-face dissection is also able to empower students to reflect on humanistic aspects of medicine, including passion and respect to life, thereby cultivating greater compassion in future doctors, particularly those practising surgery, radiology and computed tomography.

**Take-home Messages:** Dissection remains critical in medical education, and e-learning platforms have substantial potential in complementing the traditional curriculum for more effective anatomy learning in the new normal of pre-clinical professional training.
ABSTRACT:
Background: The World Health Organisation and the United Nations have suggested e-Learning as a potential innovative, flexible, interactive and adaptive resource that can be used to address the increasing shortage of health professionals, and could be used to overcome different challenges of medical education.

Summary of Work: To quickly adapt educational practices to the constraints imposed by the coronavirus SARS-CoV-2 pandemic, our teaching innovation group has updated the virtual laboratory (named e-Biology®) at De Montfort University (DMU, UK) website here: http://parasitology.dmu.ac.uk/ebiology/, with all the necessary resources to deliver practicals on clinical biochemistry, and virtual clinical case studies to facilitate the acquisition of reflective and clinical biochemistry skills. Following ethical approval, and completion of the practicals and associated virtual mini-games and quizzes, final year BSc Biomedical Science students provided feedback on the resources created.

Summary of Results: Students (n=41/169; 2020/21) highlighted that they learnt to perform urinalysis (69% agreed) and ELISA (60%) for clinical biochemistry diagnosis. However, similar percentages were recorded for responders that considered that the clinical biochemistry practical units could substitute the physical practicals in the laboratory for those that disagreed (43.9% vs. 41.4%). Most responders indicated an enhancement in their interest in studying clinical biochemistry (7.3% disagreed).

Discussion and Conclusions: The virtual laboratory and associated resources seemed to facilitate the acquisition of clinical biochemistry skills to final year students, in conjunction with problem-solving and critical thinking competencies employing multiple perspectives. The incorporation of the e-Biology® package would have resulted in an enhancement in students interest and motivation in studying clinical biochemistry, which is a critical component of future students academic success in terms of retention, learning and subsequent performance.

Take-home Messages: e-Biology® helped with the virtual teaching of clinical biochemistry, which has a significant lab practical component, efficiently and smoothly during a challenging year for students. e-Biology® facilitated the delivery of a team-based learning approach during the pandemic (individual self-work followed by teamwork using different platforms, e.g. Blackboard Collaborate Ultra). Academics can use the freely available e-Biology® web-based resources (laboratory and microscope) in a myriad of effective practical activities.
#SC18.5 On-line small-group problem-based learning during COVID-19 from the students’ perspective: Practice makes perfect (8028)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 19:00 to 19:15

**AUTHOR(S):**  
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Mong-Wei Lin, National Taiwan University Hospital, Taiwan  
Yen-Lin Chou, National Taiwan University College of Medicine, Taiwan  
Chao-Chi Ho, National Taiwan University Hospital, Taiwan  
Huey-Ling Chen, National Taiwan University College of Medicine, Taiwan  
Chiun Hsu, National Taiwan University Cancer Center, Taiwan

**ABSTRACT:**  
Background: Digital education successfully transforms the medical education pedagogy. The coronavirus disease-19 (COVID-19) pandemic and the associated lockdown prohibits in-person meeting and poses tremendous influences on medical education, triggering the accelerated digitalization of lecture delivery. However, few described the experiences of switching traditional small-group problem-based learning (PBL) sessions to an online PBL sessions. We herein shared our procedures regarding how we implemented an on-line PBL course early into the COVID-19 period, and reported students perception of this attempt.

Summary of Work: We organized a dedicated panel of medical education experts and senior PBL facilitators in March 2020 and drafted the protocols and procedures of an online PBL course. We divided the online PBL sessions into 3 phases, the pre-course preparation, the in-course workflow, and the after-course feedback with message recapping. The online PBL sessions were carried out based on live conferencing software applications alone or in combinations with other real-time communication apps. We administered an adapted instrument (the DigPBL questionnaire) for medical students to rate their confidence in successfully accomplishing online PBL sessions in comparison with that in traditional ones.

Summary of Results: Totally 110 medical students of second and fourth grades and 2 pharmacy students participated in our online PBL sessions between April and June 2020. Participants on average felt that the first-time exposure to the online PBL sessions weakened their confidence in successfully completing the PBL course compared to what they felt about traditional PBL, in both dimensions assessed by the DigPBL questionnaire, Team dynamics and Facilitator competence. Ninety-three medical students received 3 more online PBL sessions in order to familiarize themselves with the practice procedures. Interestingly, we observed that the repeated practice of online PBL practice prominently but partially restored the compromised confidence indicated by the same group of medical students.

Discussion and Conclusions: We are able to show that repeated exposure to an online PBL sessions successfully restored students confidence in course learning, suggesting that practice did make perfect to some degree during PBL digitalization.

Take-home Messages: An online PBL session might initially appear unfamiliar for medical students while repeated practice improved their confidence.
#SC18.6 The Impact of the COVID-19 Pandemic on Medical and Dental Students at the Medical and Dental Colleges of Georgia (9560)

Date of Presentation: 29 August 2021
Time of Presentation: 19:15 to 19:30

AUTHOR(S):
Adam Aston, Medical College of Georgia, USA*
Madison Coleman, Medical College of Georgia at Augusta University, USA
Ban Majeed, Medical College of Georgia at Augusta University, USA
Rodger MacArthur, Medical College of Georgia at Augusta University, USA

ABSTRACT:
Background: In mid-March, 2020, the COVID-19 epidemic forced the Medical College of Georgia and the Dental College of Georgia to suspend all in-person classes, and remove 3rd and 4th year students from their clinical clerkships for 3 months. We hypothesized that the interruption would have a profound impact on our students mental health, career choices, and education/training. We further hypothesized that the interruption would impact medical and dental students differently.

Summary of Work: The study was approved by the Augusta University (AU) Institutional Review Board. Data were collected via an online survey in August and September. Whenever possible, previously validated questions were used. Questions addressed perceived susceptibility; impact of quarantine on mental and physical well-being; interest in public health; change in career plans; readiness to provide education about COVID-19 to the public; satisfaction with the schools communication efforts.

Summary of Results: 300 medical (n=179, 60%) and dental (n=121, 40%) students participated (response rate of 23%). Demographics: women (62%); White (64%), Asian (22%), Black (8%); 73% aged 23-27 years old; 33% close contact with COVID-19 infected persons. Perceived susceptibility was higher among medical students than dental students after controlling for age, sex, race, housing, and history of close contact with COVID-19 patients (p=0.007). Both medical and dental students indicated that the pandemic had a negative impact on their studies and mental and physical health. Neither medical nor dental students reported interest in changing career plans. Compared to dental students, medical students had higher interest in public health (p=0.02), felt better-prepared to provide education to the public (p=0.004), and had higher institutional satisfaction scores.

Discussion and Conclusions: The results show that both medical and dental students were concerned about their risk of infection with SARS-CoV-2. As hypothesized, there were differences between medical students and dental students, most notably in the number of students who were more likely to choose a career in public health.

Take-home Messages: Our results reveal specific areas of concerns of medical and dental students during the 3 - 4-month interruption. These findings can be leveraged to inform educational institutions policies and preparedness plans for ongoing and future disruptions in traditional in-person activities for medical and dental colleges.
#SC19: SC - Assessment - Written

#SC19.1 Open-book written assessment and academic integrity in online medical education during COVID-19 pandemic and beyond (8936)

Date of Presentation: 29 August 2021  
Time of Presentation: 18:00 to 18:15

AUTHOR(S): Viktor Riklefs, Karaganda Medical University, Kazakhstan*

ABSTRACT:

Background: Academic integrity became an issue in online assessments during pandemic. Karaganda Medical University had concerns about integrity of its MCQ tests which dominated the overall assessment tools. The exams security was often breached, so MCQs were replaced with computerized written assessments in October 2019, several months before the pandemic hit. This turned out to be a smart decision, even initially opposed by both the students and the teachers.

Summary of Work: Students underwent computerized written assessment with obligatory plagiarism detection by Turnitin in three semesters. In semester 1, the exams followed face-to-face education and were supervised closed-book written assessments on university computers. In two other semesters, the students were taking assessments from their homes following online education due to COVID-19 without close supervision. We assumed that these were open-book assessments. The examiners were grading assessments blindly using codified Turnitin reports. 185066 written responses were collected from 5340 students and graded over exams in three semesters.

Summary of Results: In semester 1, we received 27% of responses with less than 20 words, thus making it impossible to produce Turnitin report for them. In semesters 2 and 3, this number has been 9% and 6% correspondingly. 72% of responses were completely original in semester 1, 51% - in semester 2, and 65% in semester 3. In all three semesters, the average grade for the completely original responses has been around 85%. The short answers were usually given 15-20% less. When originality dropped to 50%, the grade, on average, was around 70%.

Discussion and Conclusions: As students adapted to a new assessment method, they tended to give longer written responses. The switch to open-book assessment led to decreased originality which restored back in the next semester. Examiners tend to give lower marks to short answers and non-original responses, thus stimulating students to academic honesty even without proctoring systems and video-recordings of assessment encounters. For open-book assessments, student grades were generally higher than for closed-book assessment.

Take-home Messages: MCQ tests are prone to academic dishonesty when administered remotely. Computerized open-book written assessment with obligatory originality checks is a good alternative, which can be used for both online and face-to-face learning.
#SC19: SC - Assessment - Written

**#SC19.2 TELLme: an online learning platform for self-directed assessment of acquired medical knowledge (9523)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:15 to 18:30

**AUTHOR(S):**  
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Anne Franz, Charité - Universitätsmedizin Berlin | Dieter Scheffner Fachzentrum, Germany  
Hans Hellfried Wedenig, Charité - Universitätsmedizin Berlin | Dieter Scheffner Fachzentrum, Germany  
Harm Peters, Charité - Universitätsmedizin Berlin | Dieter Scheffner Fachzentrum, Germany

**ABSTRACT:**  
**Background:** Progress Tests, representing a sample of multiple choice (MC) questions at the graduate level, are frequently used for formative assessment to direct medical students learning at defined time points during their studies. The aim of our work is to establish an online platform with curriculum-aligned MC questions that can be used by medical students on their own choice for formative assessment of their knowledge acquisition.

**Summary of Work:** In 2019, a moodle-based online platform was set up at the Charité - Universitätsmedizin Berlin, Germany. MC questions were received from previous summative MC exams of the undergraduate medical curriculum. The MC questions were annotated by joint work of faculty teachers and students to provide a knowledge base for automated feedback (right or wrong, an elaborated explanation, as well as a certainty-based marking score). Students can access the online platform on their own choice at any time. Questions can be selected according to: single teaching sessions, teaching sessions by semester weeks or whole studying modules. In 2020 an evaluation of the students platform use was made through an online survey.

**Summary of Results:** With more than 6000 questions provided, until January 2021, more than 2600 users generated over 300,000 answer entries. The participants in the survey (n=140) indicated that the TELLme platform is substantially used along the full circle of the semester with a peak close to the semester exams. In addition, they agree or strongly agree by 76% that TELLme supports them in their individual studying and by 78% that the individual test statistics provide valuable feedback.

**Discussion and Conclusions:** The TELLme online platform is tailored to the structure and content of the undergraduate medical curriculum. TELLme provides a self-directed approach for students in the assessment of learning and complements the often obligatory progress testing at given time points. Advantages are the 24/7 accessibility all year round, the immediate and elaborated feedback, as well as the provision of individual test statistics.

**Take-home Messages:** An online platform which provides self-directed formative assessment (TELLme) allows students to test the progress of their learning; it is also found to be a helpful tool for focused exam preparation and a study aid within the semester.
ABSTRACT:
Background: In view of the rapid technological change and the resulting constantly changing professional profiles and requirements, lifelong learning represents a new challenge for students, educators and examiners. Consequently, competencies adapted to the new situation must be continuously acquired and optimised. In medical education, competence orientation is a prerequisite for preparing students for the requirements of the medical profession. Thus, the assessment culture should be increasingly focused on towards the competencies required for the medical profession. However, the effort required for the implementation of competence-oriented assessments is high, as there are often not enough resources available for the creation and quality assurance of valid content and the implementation of practice-oriented assessments. These challenges can be implemented more efficiently using a large network.
Summary of Work: The Umbrella Consortium for Assessment Networks (UCAN) is an academic association that consists of a total of 77 faculties, professional societies, medical associations and other institutions from eight different countries, which support each other in the planning, preparation, implementation, evaluation, quality assurance and feedback of examinations. At the moment, the UCAN network is working in several individual task forces, in order to cope with, for example, new challenges regarding assessments.
Summary of Results: The success of the UCAN network is reflected through the following numbers: more than 12,500 colleagues work in close exchange with each other and share a common item pool of more than 700,000 questions to optimise resources. A total of 40,000 assessments have been successfully carried out with over 12 million participants.
Discussion and Conclusions: Looking back on 15 years of collaboration, the UCAN network has proven to be an efficient way to meet new challenges in medical assessment. Especially in view of the future requirements for the evaluation of workplace-based assessments, networks are highly recommended.
Take-home Messages: To be able to efficiently and quickly solve fundamental changes in medical education as well as unexpected, sudden tasks, such as the challenges posed by the COVID-19 pandemic, individual institutions should work together to achieve more. The internationally represented UCAN network is an optimal solution for achieving this goal.
Readability does not impact professionalism score in open-response situational judgment test across German, French and English responses, but length does (8277)

Date of Presentation: 29 August 2021
Time of Presentation: 18:45 to 19:00

AUTHOR(S):
Alexander MacIntosh, Altus Assessments, Canada*
Mirjana Knorr, University Medical Centre Hamburg-Eppendorf, Germany
Oana Gröne, University Medical Centre Hamburg-Eppendorf, Germany
Jean-Michel Leduc, Université de Montréal, Canada

ABSTRACT:
Background: Physicians must relate to patients within their cultural norms and language. Casper, an online open-response situational judgment test (SJT) assessing professionalism, is increasingly used in different countries. Accordingly, we must understand how response language affects applicants scores. This will improve reliability, facilitate fairer professionalism evaluations and ensure rating methods adapt to new languages and cultures.

Summary of Work: This study investigated how Casper scores are impacted by response language. German (Germany), French, and English (Canada) responses were reviewed for length (word and syllable count) and Automated Readability Index (ARI). Applicants made 12 text-based responses and had 5 minutes for each. Responses were rated on a 1-9 Likert scale by trained raters and grouped into low (1-3), medium (4-6) and high (7-9) categories.

Summary of Results: In total, 9,382 German, 131,327 French and 543,342 English responses were included. Responses were longest and most highly correlated with score in English (198±62 words, r=0.55), followed by French (168±47 words, r=0.43) then German (131±39 words, r=0.34). While syllable and word count were similar across languages for low-scoring responses, length differed by language in high-scoring responses. Compared to their low-scoring references, high-scoring responses were 14% longer in German, 56% longer in French and 83% longer in English. Interestingly, mean readability was consistent across score and language (German=18.37 (sd=11.20), French=18.53 (sd=11.20) and English=16.73 (sd=10.41)).

Discussion and Conclusions: While many factors need consideration including: maternal language, typing speed, sociodemographic characteristics and rater consistency, this investigation shows how response length may differentially impact applicants score based on language, while readability may not. This research will help to identify how test content and rating practices must adapt for new languages.

Take-home Messages: While readability is consistent across score range and response language, longer responses are associated with higher scores, but the extent of this differs depending on response language. Understanding these factors in concert with applicant and rater characteristics will help ensure tests appropriately assess professionalism within specific languages and cultures.
#SC19: SC - Assessment - Written

#SC19.5 For Constructed-Response Situational Judgment Tests, does response format moderate group differences? (9339)

Date of Presentation: 29 August 2021  
Time of Presentation: 19:00 to 19:15

AUTHOR(S):  
Kelly Dore, Altus Assessments, Canada*  
Harold Reiter, Altus Assessments, Canada  
Ahmed Hussin, Altus Assessments, Canada  
Jillian Derby, Altus Assessments, Canada  
Ashley Henderson, Altus Assessments, Canada  
Kunbi Lawoyin, Altus Assessments, Canada

ABSTRACT:

Background: Moderate to large group differences on standardized cognitive tests have been attributed to differences in educational opportunities1. Situational judgment test (SJT) group differences are comparably smaller but still significant2,3; SJT response format may be an unintended contributor, if construct-irrelevant constructs like writing skill is required. A Belgian human resources study4 found domestic versus foreign group differences moderated by response format, shrinking when moving from selected-response to written constructed-response to audiovisual constructed-response. Applicability to medical school applicants is unknown.

Summary of Work: Following completion of a 12-section online typed constructed-response SJT (Casper), American medical school applicants volunteered to respond to 2 additional SJT sections with video stems and audiovisual responses (AVR). One-minute audiovisual response time was provided for each of the 3 post-stem questions. Responses were scored by the same raters trained and accredited to score typed responses (TR), using the same scoring guidelines, for both the audiovisual response and its auto-transcribed version (AT). Volunteer test-takers self-identified their demographic details.

Summary of Results: 1,534 medical school applicants volunteered to take part, self-defined as White (705), Asian (304), Black or African-American (171), Hispanic-Latino of Spanish (153), Middle Eastern or Northern African (47), and groups excluded from analysis - Native Hawaiian or Pacific Islander (8), Other (61), or undefined (85). Comparing ratings of different response types of White applicants to Black, Asian, Middle-Eastern and Hispanic applicants, the smallest effect sizes were in audio-visual (d=-0.07, -0.02, -0.02, -0.05) followed by AT (d=0.16, 0.10, -0.03, -0.03) and TR responses (d=0.57, -0.23, -0.13, 0.17).

Discussion and Conclusions: Authors of the Belgian study attributed disappearance of group differences when switching from typed to audiovisual response to rater overcompensation for video-identifiable minority status. While confirming negligible group differences using audiovisual responses for medical school applicants, our results using auto-transcription suggest rater overcompensation as a minor contributor, with greater contribution being removal of writing skills as a confounding cognitive construct.

Take-home Messages: All group differences disappeared when altering SJT response format from written to audiovisual. In societies with markedly differential educational opportunities, SJTs with audiovisual response may markedly enhance equitability. Future research should investigate generalizability of these results.
#SC19: SC - Assessment - Written

#SC19.6 Development of a video-based situational judgment test to measure medical students’ basic communication competence with patients (7909)

Date of Presentation: 29 August 2021  
Time of Presentation: 19:15 to 19:30

AUTHOR(S):  
Laura Schacht, University of Erfurt, Germany*  
Sabine Reiser, University of Erfurt, Germany  
Kristina Schick, Technical University of Munich, Germany  
Martin Gartmeier, Technical University of Munich, Germany  
Pascal O. Berberat, Technical University of Munich, Germany  
Johannes Bauer, University of Erfurt, Germany

ABSTRACT:
Background: When teaching medical communication competence (MCC) its assessment is inevitable to give appropriate feedback and evaluate teaching methods. For this purpose, situational judgment tests (SJTs) are a resource-efficient method (Kiessling et al., 2016). We present the development of a video-based situational judgment test to assess MCC, the VA-MeCo.

Summary of Work: Based on theoretical models of MCC and curricular standards (e.g. the Calgary-Cambridge Guides; Kurtz et al., 2003) we developed a test featuring 14 video-based tasks. In each task, the students view a video clip of a physician-patient conversation and judge the efficiency of the physicians response options along three dimensions: advancing the content, providing structure, and building a relationship. In the construction phase, expert panels served to evaluate the VA-MeCo's content validity (N = 6) and to create an answer key with sufficient interrater agreement (N = 13). Further, we investigated the tests usability, acceptance, and reliability using cognitive pre-tests (N = 12) and a pilot study (N = 117) with medical students.

Summary of Results: We found high interrater agreement for the answer key (ICCs >= .82). Findings from experts interviews, cognitive pre-tests, and the pilot study indicated good content validity, usability, and acceptance. In the pilot study reliabilities were high for the complete test and its three dimensions (Cronbach’s α ≥ .86).

Discussion and Conclusions: The evidence available indicates that the VA-MeCo is a reliable and valid test for measuring students MCC. A further validation study with a larger sample (N = 400) is currently underway.

#W12: Workshop 12

#W12 Learner participation in the (online) co-creation of education: Challenges, approaches and tips (9703)

Date of Presentation: 29 August 2021
Time of Presentation: 18:00 to 19:30

PRESENTER(S):
Karen Könings, Maastricht University, The Netherlands
Shireen Suliman, CMED-Qatar University, Qatar
Raghdah Al-Bualy, Oman Medical Specialty Board, Oman
Subha Ramani, Harvard Medical School, USA

ABSTRACT:
Background: Active learner involvement in the design of education contributes to improvement of educational quality and enhances feelings of engagement, agency, and empowerment. There is growing attention to co-creation in educational practice and research, as it contributes to sustainable education and increased commitment of all involved stakeholders. In this workshop, participants will learn about the implementation of co-creation in practice.

Who Should Attend: Teachers, clinical supervisors, educational researchers, as well as students and residents who want to implement co-creation in educational practice. We will discuss challenges and approaches for co-creation, as relevant for different stakeholder groups (including: learners, teachers, educational institutions, but also workplace partners, educational designers, software developers).

Structure of Workshop: After a short introduction and elaboration on the definition of co-creation and its potential impact (5 minutes), there will be a discussion about challenges that might be encountered by the different stakeholder groups (10 minutes). Awareness of potential challenges helps to prevent them or adequately deal with them. Participants reflect on their own doubts or experienced challenges in co-creation and discuss them together.

Next, in a group assignment (20'), participants develop a plan for co-creation of an educational intervention, course or part of a curriculum. In a plenary debrief, participants will share their ideas (10'), after which an evidence-based checklist on approaches to co-creation will be presented (5'). Participants will use this checklist to evaluate and reflect on the developed co-creation plans (10'). Reflections are exchanged in a plenary discussion (10') and we will add scientific insights to provide participants with practical tips. Also, we will share experiences from own co-creation projects in different settings/countries, as well as online co-creation in Covid-times (10'), followed by a wrap up and room for questions (5').

Intended Outcomes: At the end of this session, participants will:
1. Be able to define what co-creation in education entails;
2. Have a good overview of potential barriers to co-creation for different stakeholder groups and possible approaches to deal with these;
3. Have reviewed and applied an evidence-based co-creation checklist;
4. Acquired practical tips for the involvement of stakeholders in co-creation
#W13: Workshop 13

Developing Inclusive Learning Communities as Vehicles to Achieve Greater Student Success (8126)

Date of Presentation: 29 August 2021
Time of Presentation: 18:00 to 19:30

PRESENTER(S):
Bryan Hayse, Ross University School Of Medicine, Barbados
Leor Zellner, Ross University School Of Medicine, Barbados
Jessalyn Mayer, Ross University School Of Medicine, Barbados
Kashif Ahmad, Ross University School Of Medicine, USA

ABSTRACT:

Background: Student support (Sanders) and engagement (Kuh; Coats) are two widely identified pillars of student success. Effective learning communities (LCs) foster such an environment by establishing long-term collaborative relationships between students and faculty that actively engage together in collaborative learning (Smith). Although priorities differ across institutions, common areas of emphasis include professionalism, personal and professional growth, faculty mentoring, academic coaching, career advising, student wellness, and community engagement (RUSM). Learning communities have shown to have many positive outcomes within medical education (Shochet) evidenced by better clerkship performance (Jackson); higher quality advising, enhanced sense of community, and better social integration (Levine); greater student connectedness to faculty in small group learning (Brandl); and increased student satisfaction with wellness counseling (Sastre). The positive benefits are not only limited to students. Faculty have reported higher levels of job satisfaction, and engagement when participating in learning communities (Wagner).

Who Should Attend: Anyone interested in initiating or enhancing their own learning communities.

Structure of Workshop: The purpose of this presentation is two-fold. First, to educate on how a learning community model can be used as a vehicle to connect academic, co-curricular, and support services to appropriately support and engage students. This will be done by looking at the history, purpose, and identified outcomes of learning communities as well as using RUSM’s “Journey to Medicine” learning community evolution as a framework.

Second, and most importantly, participants will be guided in a small group exercise focused on helping them begin (or continue) to form the scaffold of their own learning community model by identifying champions and stakeholders, needed resources, goals/objectives, curriculum, and structure. Participants will also be challenged to look at already existing programs and initiatives that address identified LC goals to decrease initial implementation resources.

Intended Outcomes: This active learning model will set the stage with appropriate education and guided facilitation to allow medical educators and students of all levels to realistically dream, prioritize intended outcomes, and continue their own journey of creating a cohesive program focused on student success in which all student-facing colleagues have the opportunity to participate and positively impact the physicians of tomorrow.

Level: Introductory
#W14: Workshop 14

**#W14** New Educator and Scholar Training (NEST): A Professional Development Workshop for Young Educators (9526)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**  
Philippa Lantwin, European Medical Students’ Association, Germany  
Elisabeth Schlegel, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, USA  
Azhar Adam Nadkar, Faculty of Medicine and Health Sciences, Stellenbosch University, South Africa  
Evangelos Papageorgiou, Medical Student Alliance for Global Education (MeSAGE), Greece  
Irem Aktar, European Medical Student Association (EMSA), Turkey  
Tao Le, University of Louisville, USA

**ABSTRACT:**

**Background:** Medical education accreditation bodies worldwide have stated the importance of teaching as a core physician skill in their competency frameworks, and one of the main stage presentations at a recent AMEE conference was given by a medical student highlighting the conspicuous absence of professional development opportunities internationally (Freret et al., 2017; Pihlak 2017). In addition, residents charged with educational responsibilities of teaching their medical students and peers may be responsible for about one-third of the education in a clinical setting (Bing-You & Sproul, 1992). Responding to the COVID-19 pandemic, medical education expanded to include digital technology to create online social communities by learners using blogs, instant messaging services, digital workspaces and more. In order to address the gap in providing technology enhanced education, we have devised the New Educators and Scholars Training (NEST) program to provide an evidence-based framework for professional development of medical students in medical education (Chen et al., 2017). This workshop aims to give an example of such a session, focused on technology enhanced learning.

**Who Should Attend:** The workshop is targeted at students and junior educators, while experienced educators are welcome to get inspired.

**Structure of Workshop:**  
- Brief pretest and overview over participants expectations  
- Introduction to specific needs and challenges set by pandemic and teaching and learning experiences during the pandemic  
- Interactive large group setting: theory and best practice on technology enhanced learning  
- Small working group activity: Putting technology into action with real-life examples  
- Participant’s account of the NEST program as an example of scholarly development  
- Individual breakout groups on professional development and putting digital teaching into action

**Intended Outcomes:**  
- Practical experience using digital teaching tools  
- Outlining a programmatic scholarly approach for young educators and providing a guidance to applying technology based education  
- Highlighting technological novelties in the context of the pandemic  
- Navigating a social learning environment that allows to further collaborate and share best practices with other novice educators  
- Providing insight into the NEST program and its implications by involving students’ point of view

**Level:** Introductory
#W15: Workshop 15

#W15  Self-Directed Learning (SDL), beyond Go Away and Find Out (GAFO). How do we develop faculty able to generate future self-directed learners? (9532)

Date of Presentation: 29 August 2021
Time of Presentation: 18:00 to 19:30

PRESENTER(S):
Qabirul Abdullah, University of Dundee, UK
Linda Jones, University of Dundee, UK

ABSTRACT:
Background: Dundee’s CME has international faculty development at the heart of its Postgraduate certificate/Diploma/Masters. In response to students’ voices we developed a module Self-Directed Learning (SDL); linking theory to practice module. Recognising how diverse needs of students could not be met without an unsustainable breadth of module choice, (small classes not economically viable) we co-created a 20 credit module which allows individuals to set their own speciality or context specific learning goals. Here we challenge assumptions, that merely expecting students to direct their own learning or as cynics suggest Go away and find out (GAFO), is the same as self-regulated(SRL). SRL requires students taking responsibility for and regulation of learning behaviours set by institutions or teachers. Whereas SD Learners diagnose their own needs; formulate goals; identify resources/strategies and evaluate learning outcomes (Saks and Leijen 2014). We addressed the paradox of teaching and assessing SDL by blending and assessing module and personal learning goals; integrating learning from experience; observation and student negotiated learning opportunities. Assessment is by an evidence-based reflective portfolio. Our innovation report shares the design thinking underpinning the initiative, CPD activities and evaluation findings suggest SDL is a valuable component of professional and faculty development requiring explicit promotion.

Who Should Attend: Anyone interested in developing faculty able to encourage self directed learners including medical education specialists, clinical teachers in any health related.

Structure of Workshop: Predominantly small group exercises and discussions. Short presentations to invite large group and peer conversations. Exercises designed to enable participants to identify how SDL might be addressed in their own contexts e.g. workplace-based learning, CPD, online or academic programmes.

Intended Outcomes: Enhance critical understanding of self directed learning for ourselves and our students
Identify curriculum issues
Explore the paradox of teaching self directed learning
Share Dundee’s innovative approach to both online and face-to-face faculty development

Level: All
#S9: Symposium 9

#S9 Adaptive expertise and transitions – from evidence to practice (7463)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
Paul de Roos, Uppsala University, Department of Neuroscience and Neurology, Sweden
Nikki Woods, The Wilson Centre, University of Toronto, Canada
Maria Mylopoulos, The Wilson Centre, University of Toronto, Canada
Bilge Nur Ozdemir, Hacettepe University Faculty of Medicine, Turkey
Irem Aktar, Istanbul University Istanbul Faculty of Medicine, Turkey
Suleyman Yildiz, Mardin Derik State Hospital, Turkey

Summary: In transition from student to junior doctor and from resident to specialist, adaptive expertise is a construct that can help support adjustment to new levels of responsibility and complexity on the job. This is important for both patient care as well as the well-being of the junior doctor.

Adaptive expertise can be defined as the ability to adapt to uncertain, complex and novel situations while optimally problem-solving in routine situations. Explicit connection of “what” knowledge with “why” helps to create a mental framework that supports the development of adaptive expertise. Small changes in the learning environment can support the development of adaptive expertise.

This session brings together the state of the science of adaptive expertise, with fresh experiences from students and junior doctors who reflect on their education and work. The session will use current literature on clinical teaching and assessment and relate this to the development of adaptive expertise. Using this as a foundation, students and junior doctors will discuss how their own development as adaptive experts has been supported by their teachers and the medical education system. We will conclude with further areas of research that need to be explored.

What participants will gain: Students and Junior doctors will get concrete ideas on how to acquire adaptive expertise: how learning moments can be used better & how assessment can be helpful.

Clinical educators & leaders of residency programmes will get concrete ideas on how to improve their learning environments: better use of existing learning moments & how assessment can help.

Education researchers will hear ideas for further research.ongoing exchange of information and collaboration, as envisaged in the AMEE ASPIRE Academy initiative.

Who should participate: All involved in clinical education and postgraduate training.
#S10 Symposium 10

**#S10 Interprofessional education: Towards consistency and consensus (7534)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:00 to 21:30

**PRESENTER(S):**  
Julie Browne, Cardiff University School of Medicine, UK  
Alison Bullock, CUREMeDE, Cardiff University, UK  
Sharon Buckley, University of Birmingham, UK  
John Norcini, FAIMER, USA  
John Jenkins, Queen's University, Belfast, UK  
Derek Gallen, Association for the Study of Medical Education, UK

**Summary:** Accreditation bodies around the world mandate interprofessional education but stop short of actually setting visible national standards (Buckley 2020). In particular, there is little consensus or clarity around the skills, knowledge and attitudes that interprofessional educators need in order to practise effectively both as individuals and in teams.

Otherwise excellent healthcare professionals may fail to work effectively in teams, either clinically or educationally (Lingard 2016) due to both horizontal and vertical factors. Since interprofessional education (IPE) necessarily requires collaboration over educational design and delivery, it is critical that educators are equipped to work in effective interprofessional teams.

National practice standards for interprofessional educators could help to raise awareness that IPE is an advanced field of practice requiring specific capabilities and knowledge (Buckley 2020). Used effectively they could improve quality in professional education by offering a more structured approach to recognizing and accrediting an individual's acquisition of specialist skills in IPE, including teamwork, across the professions (Norcini 2019).

This symposium will  
(a) Report on a major ongoing project in the area of cross-collaboration on standards for healthcare educators;  
(b) Debate whether standards for interprofessional educators are needed and if so, how these could be developed and implemented.  
(c) Explore possible futures for developing a stronger consensus on the role of the interprofessional educator.

**What participants will gain:** This symposium will explore the following questions:  
(1) What is currently happening to bring healthcare educators into closer alignment in terms of regulation, training and recognition?  
(2) What more can be done to break down barriers to interprofessional recognition of educator expertise?  
(3) Could standards improve the consistency and quality of IPE in healthcare?  
(4) Delegates will have the opportunity to contribute to the above debates, hear from those involved about current activity and future directions, and to influence the future of policy development in this area.

**Who should participate:** Healthcare educators, policy makers, academics and practitioners, especially those interested in:  
- Professional recognition for educators  
- Faculty development  
- Interprofessional education  
- Healthcare education regulatory practice
#RP5: Research Paper - Including multiple perspectives in HPE

#RP5.1 Development of a Competency-based Multisource Feedback Instrument for Residents (7724)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:00 to 20:20

**AUTHOR(S):**  
Eva K. Hennel, Department for Assessment and Evaluation (AAE), Institute for Medical Education, University of Bern, Switzerland*  
Ulrike Subotic, University Childrens Hospital Basel, Switzerland  
Christoph Berendonk, Department for Assessment and Evaluation (AAE), Institute for Medical Education, University of Bern, Switzerland  
Daniel Stricker, Department for Assessment and Evaluation (AAE), Institute for Medical Education, University of Bern, Switzerland  
Sigrid Harendza, Department of Internal Medicine, University Medical Centre Hamburg-Eppendorf, Germany  
Sören Huwendiek, Department for Assessment and Evaluation (AAE), Institute for Medical Education, University of Bern, Switzerland

**ABSTRACT:**

**Introduction:** Multisource Feedback (MSF) is one form of workplace-based assessment which can support medical training by providing regular feedback from various perspectives [1]. Typically, MSF consists of feedback given by several raters via structured MSF questionnaires which list the expected competencies. This feedback is collected and delivered in written form or by a supervisor. There are a variety of instruments for different settings; undergraduate and postgraduate training, with a formative or summative purpose. However, no MSF instrument for residency training is publicly available in German. By developing such an instrument, we could encourage the use of MSF and thus support residency training. Hence, we aimed to develop a German-language MSF questionnaire based on the CanMEDS roles and to show its validity for residency training.

**Methods:** The study took place at a Swiss university children’s hospital with residents following a training in paediatric surgery or paediatrics. Mini-CEX and DOPS were already offered, but no further training on structured feedback. Following the criteria of validity as described by Cook [2], we aimed for four sources of validity evidence: (i) **Content:** We based the content on the MSF literature, blueprints of competency, and expert-team discussions. Reviewing international MSF instruments, the mini-PAT [3] was chosen as a base and adapted to local needs with the formative use and the CanMEDS roles as the underlying framework. (ii) **Response Process:** The clarity of items was examined in a think-aloud study. Residents, raters and supervisors were trained on MSF and feedback. The response process was assessed by the analysis of narrative comments, “unable to comment” ratings and evaluation data. (iii) **Internal structure:** The internal structure was assessed by exploratory factor analysis, and inter-rater reliability by generalisability analysis. Data were collected during two runs of MSF on 81 occasions of MSF. (iv) **Consequences:** We analysed the residents’ learning goals and the progress as reported via MSF.

**Results:** The MSF questionnaire consists of 15 items and one global rating, which are rated on a scale and offer space for narrative comments each. Additionally, there are open questions for further suggestions. Investigation of validity evidence revealed: (i) Clinical competence is comprehensively addressed; (ii) The items are understood as intended and evaluation showed good acceptance and usability; (iii) Factor analysis showed a one-factor solution, a Cronbach’s alpha of 0.951 and an inter-rater reliability of 0.797 for the second run with 12 raters; (iv) Residents formulated individual learning goals and MSF ratings hinted at development.

**Discussion and Conclusions:** We developed a competency-based MSF questionnaire for residency training in German language and described evidence of validity in terms of content, response processes, internal structure and consequences [4]. Based on the CanMEDS roles and assessed with surgical and non-surgical residents, this MSF questionnaire should be of use for other specialties, too. As the lack of instruments in the local language can be a hurdle for medical education, this description of the development based on an
international instrument adapting both the language and content to the local setting, might be exemplary and helpful for others. The strengths of this study include the description of response process and consequences, which address a gap in the literature. The results are limited to the observations from one clinic, which might impair the generalizability. Future studies should focus on further consequences of MSF, besides the residents competencies.

References:
#RP5: Research Paper - Including multiple perspectives in HPE

#RP5.2 The Ottawa Resident Observation Form for Nurses (O-RON): Assessment of Resident Performance through the Eyes of the Nurses (7700)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:20 to 20:40

**AUTHOR(S):**  
Nancy Dudek, University of Ottawa, Canada*  
Melissa Duffy, University of South Carolina, USA  
Timothy Wood, University of Ottawa, Canada  
Wade Gofton, University of Ottawa, Canada

**ABSTRACT:**

**Introduction:** Work-place based assessment (WBA) is considered one of the best methods of assessing professional competence. Most WBA relies on physician supervisors making observations of residents. However, residents interact with other healthcare professionals, most often nurses, frequently without the direct observation of physicians. Obtaining assessment information from a nurse’s viewpoint may provide more authentic information about resident performance because they may perform differently when they know that they are being observed by their physician supervisors.(1)

Although assessment of resident performance by nurses is captured with multi-source feedback tools, there is some concern in relying on this approach as there is evidence that different groups of healthcare professionals rate the same individuals differently.(2) When the groups are combined, the perspective of one particular group can be lost. It is not a weakness that different groups have different perspectives, but it needs to be documented to provide useful formative feedback. Therefore, there is a need to develop a tool that uniquely captures the nurses’ perspective of resident performance.

This study developed and collected validity evidence for a tool that rates the performance of a resident on a hospital ward from the perspective of the nurses, using their language and framework for physician competence.

**Methods:** Through a nominal group technique, nurses identified dimensions of performance that are reflective of high-quality physician performance on a hospital ward. These were included as items in the Ottawa Resident Observation Form for Nurses (O-RON). The tool was voluntarily completed during an 11-month period (March 2019 – February 2020) in the Orthopedic Surgery Residency Program at the University of Ottawa. Validity evidence related to quantitative and qualitative data was collected.

**Results:** The O-RON has 15 items rated on a 3-point frequency scale, one global judgment yes/no question regarding whether they would want the resident on their team and a space for comments. 1079 O-RONS were completed by 49 nurses on 38 residents. There was an association between the response to the global judgment question and the frequency of concerns for each item (p < .01). With 8 forms per resident, the reliability of the O-RON was 0.80. With 3 forms per resident, the reliability was 0.59. Open-ended responses for both positive aspects of performance and areas for improvement referred to aspects of interpersonal skills, responsiveness, dependability, communication skills, and knowledge.

**Discussion and Conclusions:** Content validity evidence was established based on feedback from the nurses. Each of the 15 items differentiated between residents that the nurses would and would not want on their team. Response process was demonstrated by the results from the thematic analysis that show agreement in how the nurses responded with common themes for both strengths and areas of improvement. Internal process evidence was demonstrated by the strong reliability of the scale. The O-RON items identified by our participants, as well as the open-ended responses, represent areas of clinical performance in which nurses have been shown to be capable of assessing. Completing the O-RON was entirely voluntary with no incentives. The large number of forms completed, with relatively little missing data suggests that the form was easy to complete and that the nurses were interested in providing their perspective. While 8 forms are required to achieve a reliability considered acceptable for summative assessment, only 3 forms per resident would be required to have an acceptable reliability for formative assessment. The O-RON demonstrates promise as a useful WBA tool to provide residents and training programs with important feedback on
aspects of their performance on a hospital ward through the eyes of the nurses. It appears to be easy to use, has solid evidence for validity and can provide reliable data with a small number of completed forms.

#RP5: Research Paper - Including multiple perspectives in HPE

**#RP5.3 Are we all even aligned? A phenomenographic study of direct stakeholders’ conceptions of clinical learning in undergraduate nursing education (7694)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:40 to 21:00

**AUTHOR(S):**  
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Stéphanie van der Burgt, Amsterdam UMC, The Netherlands  
Terese Stenfors, Karolinska Institutet, Sweden  
Hester Daelmans, Amsterdam UMC, The Netherlands  
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**ABSTRACT:**

**Introduction:** In clinical nursing education, several aims have to be reconciled, like delivering high quality patient care, establishing a safe learning environment and offering meaningful learning opportunities. A shared understanding of the desired nature and outcomes of clinical learning among those involved is required to successfully integrate these aims. Although nursing students are immersed in clinical practice right from their first year, the literature lacks a critical discussion of the clinical learning process in relation to the actual and desirable outcomes. This study aimed to map different conceptions of the desired process and outcomes of clinical learning among stakeholders directly involved in undergraduate clinical nursing education, specifically nursing students, supervisors, clinical educators and higher education institute professionals.

**Methods:** The study followed a phenomenographic approach. While phenomenology investigates the essence of lived experiences of a phenomenon, phenomenography considers the variation of conceptions related to a phenomenon(1). Twenty-five semi-structured interviews were carried out with stakeholders involved in clinical learning in a Dutch academic medical center. Participants were asked to describe a successful and an unsuccessful day in clinical learning. Follow up questions were aimed to explore the interviewees’ intentions behind bringing up points in a certain way. Hereby concrete experiences were used as a starting point for exploring underlying conceptions. Following phenomenographic analysis, a) similar ways in which the phenomenon ‘clinical learning’ is conceived and b) dimensions, along which conceptions vary, were identified from the entire data pool. Next, structural relationships between the two were sought. Additionally, an underlying shared understanding of clinical learning was identified as well as structural challenges or conflicts experienced in clinical learning that may represent barriers in putting conceptions to practice.

**Results:** We identified four qualitatively different conceptions a) Meet curricular demands by increasing patient load and ticking off learning goals b) Learn to deliberately deliver patient care by continuously reflecting on the process of nursing care c) Learn to deliver patient care within the larger (healthcare) context by becoming member of a team and trying to understand the patient within its context and d) Become a continuously developing professional by looking creatively for learning opportunities and deliberately reflecting on one’s own learning preferences. We described these conceptions along six dimensions (role of training and guidelines from the school; learning opportunities; focus of supervisor; focus of reflection; role of peers, desirable outcomes of clinical learning) that we identified in the data. All four conceptions were found in all subgroups of stakeholders. These conceptions exist on top of an agreement about a safe learning climate and graded autonomy as key elements in clinical learning. Structural challenges and conflicts involve confusion about responsibilities, and the tension between personal development and curricular demands.

**Discussion and Conclusions:** Those directly involved in clinical learning in undergraduate nursing education may have qualitatively different understandings of its desired nature and outcomes. This variety exists in spite of a close collaboration between higher education institutes and hospitals with respect to competency-based nursing training. Conceptions range from a task-oriented approach to a more inclusive view on personal development and healthcare. The underlying shared understanding and the dimensions...
along which conceptions vary, resonate with experiential learning theories as well as with literature about the necessity of a safe learning environment for clinical learning. In addition to the literature, the current study underscores conceptions as a factor in the application of experiential learning theories and provides a language to evaluate this application. It suggests that to prepare nursing students for the future workforce, a shift from goal-oriented learning to an inclusive, more flexible form of learning is required. Awareness and discussion of conceptions can be a first step in aligning stakeholders and redesigning clinical training. Practical aspects of both the education and clinical setting such as time, supervisor capacities and regulations should be considered to ensure that more inclusive conceptions can be put into practice.

#RP5: Research Paper - Including multiple perspectives in HPE

#RP5.4 Power to the people? A co-produced critical review of service user involvement in mental health professions education (7797)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 21:20

AUTHOR(S):
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ABSTRACT:
Introduction: The involvement of service users as educators in the health professions is frequently linked to an intention of producing transformative changes in learners and systems by centring the human, social and ethical dimensions of care. However, whether and how involving service users as educators actually achieves this ambitious goal and what role shifts in power play in it remains poorly understood, despite more than two decades of scholarship. This gap is particularly pressing in mental health professions education, where power differences between service providers and service users are magnified and where the stakes of involvement are consequently high. With this co-produced critical review, we aimed to understand how power relations between service providers and services users are discussed in the literature that examines service user involvement in mental health professional education.

Methods: Our team consisted of a diverse group of service user educators, health professionals and education researchers who all had prior experience co-producing mental health professional education. With the help of a research librarian, we conducted systematic searches in seven electronic databases (Medline, PsycINFO, CINAHL, IBSS, Cochrane, ERIC and Social Work Abstracts) between November 2017 and January 2018. We screened 6160 titles and abstracts. Articles that focused on involving service users in educational design, delivery, assessment and/or evaluation in the mental health professions were selected for full-text review by teams of two. Of these 296 full-text articles, 168 were selected for analysis. Each team member closely read a subset of these articles for elements of particular interest, including the purpose and nature of the educational activity described, the nature and rigor of the evaluation or research (where applicable), and the ways in which power relations were identified, described, theorized and put to use in the articles. We met several times as we conducted this close reading, exchanging ideas about our article sets, learning from each other’s knowledge and perspectives and sharpening our critical lenses. Through these discussions we constructed a preliminary analytical framework for the ways that power figures in this work. We then went back to our articles to link and describe those that were particularly helpful in illuminating or challenging the various analytical dimensions of our framework, which was refined and extended iteratively over the course of the analysis.

Results: Power figures prominently in this work, but it is rarely made visible in this literature. Few articles explicitly use a theory of power to understand relations between service providers and service users. The democratic and emancipatory values that underpin the policies that mandate service user involvement are infrequently reflected in how service users participate in education programs or in the epistemology or methodology of studies about it. The larger social structures that shape and constrain service user involvement in mental health professions education are rarely considered. Authors hardly engage with survivor research and Mad studies, where important critiques of involving service users in mental health research and service improvement have been articulated. Researchers infrequently practice reflexivity in their writings, thus leaving hidden the complex ways that power is negotiated among health professionals, service user educators, and education researchers within the research teams and between researchers and learners, service provider and service user educators in educational programs.
Discussion and Conclusions: Our review highlights a crucial contradiction in this literature: while the potential benefits of shifting power from mental health service providers to mental health service users are recognized, educators and researchers have failed to seriously contend with the complexities of power relations. This lack of critical analysis threatens the goals of involving service users as educators, as it has led to an “as if” body of work that can act as a substitute for meaningful change, paradoxically serving to reinforce existing power relations and institutional agendas while effectively blocking transformation.
#EP5: ePoster - Faculty Development

#EP5.1 A Pilot Online Faculty Development Curriculum using TED Masterclass to Develop Skills in Presenting Micro-lectures (8470)

Date of Session: 29 August 2021
Time of Session: 20:00 to 21:30

AUTHOR(S):
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ABSTRACT:
Background: In this digital age, students often prefer to receive information in short bursts, focusing their attention without the cognitive overload of the longer, traditional lecture. Yet, there is a lack of faculty training on how to create and deliver micro-lectures. Training could lead to radical transformation of lecture delivery. TED Masterclass is an established online, self-paced training program with lessons and activities aimed to improve one’s ability to create and deliver short, impactful presentations. We used TED Masterclass as a training platform in this pilot faculty development curriculum aimed at training health professions educators on the creation and delivery of micro-lectures.

Summary of Work: A 6-month educator development curriculum was built to enhance micro-lecture creation and delivery skills. The interprofessional curriculum consisted of seven online, self-paced TED Masterclass skill-building lessons along with three, hour long virtual Accountability Sessions facilitated by the authors. Accountability sessions focused on learned skills and the application to health professions education. Participants also prepared and delivered a TED-style micro-lecture for peer and facilitator feedback.

Summary of Results: Twenty-three health professions educators enrolled in the pilot curriculum. At the end of the 7 months, 13 (57%) educators completed the program and several more are pending completion. Participants who attended all three of the Accountability Sessions were more likely to complete the program on time. Positive feedback from participants has been received regarding the Masterclass lessons, Accountability Sessions, and complete curriculum.

Discussion and Conclusions: Initially planned for a hybrid delivery model, this novel interprofessional educator development curriculum was successfully conducted remotely due to the pandemic. Limitations include a 43% incompletion rate as of December 2020 and low survey response rates. Several lessons were learned in this pilot cohort which are useful for planning future cohorts. We plan to provide more opportunities for formative feedback on presentation development and delivery and will use an online learning management system to encourage peer-to-peer feedback.

Take-home Messages: • Remote delivery of faculty development allows for anytime-anywhere participation • Holding faculty accountable with group meetings and deadlines is important for success • Like students, faculty need more formative feedback for development over time
#EP5: ePoster - Faculty Development

#EP5.2 A questionnaire survey of perceptions of medical education research among clinical teachers in pediatrics (9634)

**Date of Session:** 29 August 2021  
**Time of Session:** 20:00 to 21:30

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** Medical education research is critical to patient care. Clinical skills acquired in the medical education laboratory can transfer to patient care practices and patient outcomes. Clinical teachers in pediatrics engaged in medical education research are important for future child health care professionals and ultimately to improve pediatric patient care. This study aimed to explore the perceptions of medical education research among clinical teachers in pediatrics in Guangdong Province, China.

**Summary of Work:** We conducted a questionnaire survey of the 29 clinical teachers in pediatrics from 29 hospitals of Guangdong Province of standardized residency training in November 2020. The questionnaire included information about topic of medical education research conducted and practiced, publication of medical education research project, and achievement of medical education research.

**Summary of Results:** The main topics of medical education research conducted and practiced by the 29 teachers were: problem-based learning (5/29, 17.2%), use of simulations (3/29, 10.3%), and mini-clinical evaluation exercise (3/29, 10.3%). Fourteen (14/29, 48.3%) teachers stated that publication of medical education research project was essential. Nineteen (19/29, 65.5%) teachers admitted that they hadnt participated in writing medical education research article. Nineteen (19/29, 65.5%) teachers expected to improve educational outcomes through medical education research, and 11 (11/29, 37.9%) teachers expected to improve clinical outcomes through medical education research.

**Discussion and Conclusions:** In Guangdong Province, China, the topics of medical education research conducted and practiced by clinical teachers in pediatrics, and their ability and skill of writing articles for publication should be improved. There is growing demand for pediatrics faculty development in medical education research.

**Take-home Messages:** More attention should be paid to the development of medical education research among clinical teachers in pediatrics in Guangdong Province, China.
ABSTRACT:
Background: As a community of faculty developers in medical education, we are aware that healthcare educators benefit from training on their teaching skills. There is increasing requirement for those new to teaching roles to take formal educational training. However, there is a paucity in work assessing change and transfer to practice of such activities, as highlighted by Steinert et al's 2016 systematic review on faculty development (FD).

Summary of Work: A survey was sent to participants from three institutions in three countries (Germany, Iceland & Scotland). Participants had attended educational CPD workshops in their relevant institutions within the last two years. We sought to explore what it is about FD that is likely to bring about change in educators practice, the features of the conditions in which the learning from faculty development is applied to the workplace (i.e. where the practitioner will be delivering teaching), and the intended/unintended consequences of that FD.

Summary of Results: We have discovered that exposure to/awareness of networking, peer observation, reflection, team teaching & using student evaluation, enabled faculty to make changes to their practice in the workplace. Participants reported that time was a barrier in making changes to their practice after accessing CPD. Participants reported making changes to their approach to feedback, actively reflecting and adapting their practice and developing new teaching sessions/resources.

Discussion and Conclusions: We drew upon the work of Bronfenbrenner (1994) & Rutter (2012) in the development of a framework to aid analysis of the participants comments. This allowed us to group responses into risk or protective factors and to consider whether the factors expressed were associated with self, others or environment. We plan to further develop this framework to be used within institutions to allow them to explore their own protective and risk factors. This may aid faculty/curriculum developers in their planning and allow hidden factors to come to the fore. We plan to further test the framework with those teaching in a blended learning capacity, to capture the specific factors influencing practice in this sphere.

Take-home Messages: Utilising our novel framework, we can gain insights into the factors associated with FD transfer into the workplace setting.
#EP5: ePoster - Faculty Development

**#EP5.4 Evidence-based faculty development programme in Dentistry: Design, implementation and impact evaluation (7964)**

**Date of Session:** 29 August 2021  
**Time of Session:** 20:00 to 21:30

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** A faculty development programme includes any planned activity destined to improve education quality, enhance teaching-learning processes and educational environment. There is evidence of how to design, implement and evaluate its impact. This work aimed to describe the design, implementation, and impact evaluation of the School of Dentistry’s faculty development programme at Pontificia Universidad Católica de Chile.

**Summary of Work:** During 2019, the Dental Education Office designed and implemented a voluntary faculty development programme, based on the best available evidence, following the six steps suggested by Kern. Then, Kirkpatrick’s model was used to evaluate the two basic levels. For this, the attendees answered a 5-items survey about the process perception and 3 open questions (level 1: reaction), and 6-items self-report about the impact on their teaching (level 2: learning). Descriptive data and Mann-Whitney test were used.

**Summary of Results:** The programme offered eight activities between 1 to 4 hours each, on a flex-time schedule. Of a total of 105 dentistry teachers, 54.6% (n = 52; 64% women) attended at least one activity and a maximum of six. Workshops and small group activities on different topics were accomplished. The survey and self-reports had a response rate of 60% (n=33). The overall results of reaction in all items reported an excellent average, and the global score (in 5-point rating scale) was 4.73 ± 0.3. The positive perception was not correlated with the number of activities attended by each teacher (p >0.001). Besides, 85% of participants declared applying in their courses what they learned, with a positive self-reported impact on their knowledge, skills, attitude and motivation towards teaching.

**Discussion and Conclusions:** This evidence-based faculty development programme obtained preliminary positives results. The topics addressed, quality of the activities, modality and flexibility adapted to the teachers needs were essential to achieve their acceptance. We will consider new contents on B-learning format, establishing a systematic programme.

**Take-home Messages:** A faculty development programme can be a successful experience if realistic outcomes and proper design and implementation are considered. Ultimately, these results impact the quality of the students learning experience.
#EP5: ePoster - Faculty Development

#EP5.5 Inter-rater reliability of Entrustable Professional Activity raters during clinical nurse training period (9384)

**Date of Session:** 29 August 2021  
**Time of Session:** 20:00 to 21:30

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** This study examined inter-rater reliability of three assessment tools on Inpatient medication, Daily physical assessment and Sample collection and examination Entrustable professional activity (EPAs) raters during clinical nurse training period in order to improve the consistency of the scores on clinical nursing teachers.

**Summary of Work:** In August 2020, 40 nurse preceptors for new nurses were trained on EPAs, and new nurses were trained on three EPAs items, each of which was evaluated twice. First, nurse preceptors watched the scenario teaching plan and entrustment based discussion video, and then evaluated the learning effectiveness of the new nurse in the film to decide which level the entrustable decision is being made. After discussion, a consensus was reached, and the video was watched again and evaluated again.

**Summary of Results:** The Chi-square test to perform McNemar test was used for data analysis. The results showed that there was a significant difference of \( P < 0.006 \) in Inpatient medication and no significant difference in Daily physical assessment \( (P < 0.359) \) and test body. There was a significant difference between Sample collection and examination \( (P < 0.001) \).

**Discussion and Conclusions:** After EPAs consensus education and training, the summative assessment of EPAs in the Daily physical assessment has not yet reached consistency on nurse preceptors still have subjective consciousness on which assessments. Resulted in no significant difference in consensus. It is recommended that the evaluation of learning effectiveness should be evaluated by multiple people, multiple times and diversified evaluation. A clinical competency committee shall be organized, where multiple members will evaluate the learning effectiveness based on the comprehensive performance of the new nurse, and jointly decide the results of the evaluation, fair and objective in order to evaluate students learning effectiveness. The consistency on EPAs during the training period of nurse preceptors can not be achieved in this study. Which urged educators to think about adjusting training mode in the future.

**Take-home Messages:** The results of this study on the nurse preceptors consensus education training and teaching effectiveness evaluation can be used as an important reference for improving EPAs clinical nursing education.
#EP5: ePoster - Faculty Development

#EP5.6 Is Micromanagement affecting Clinical Supervision and Professional Entrustment for Trainees? (8980)

Date of Session: 29 August 2021
Time of Session: 20:00 to 21:30

AUTHOR(S):
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ABSTRACT:

Background: Entrustable Professional activities provides goals for residents and directions for attendings on adjusting their level of supervision to the residents competency. When attendings cannot adjust their supervision to residents needs, it becomes untimely and excessive, and they are perceived as micromangers. Micromanagement is being defined as a supervisory style of hovering and directly commanding all the details, rather than giving space to the trainee assigned to perform the task. Micromanagers can affect learners autonomy, their competence and supervisor-resident relationship and the team in a negative manner.

Summary of Work: A search in PubMed (micromanage*[Title/Abstract]) and ((undergraduate medical education [MeSH Major Topic]) or (Graduate Medical Education [MeSH Major Topic])) revealed only six publications. We reviewed the literature on micromanaging behavior, its causes, and consequences in medical education, business, nursing, sociology, and psychology. After identifying articles we used the snowball method to identify more relevant literature. The LinkedIn Learning, MedEdPortal and MedEdPublish databased were used to identify teaching and learning materials on this topic.

Summary of Results: Micromanaging behaviors consist of a combination of traits which include excessively asking for updates, scrutinizing details, and taking pride in correcting others mistakes. The causes of this micromanaging behavior could be secondary to organizational structure, insecurity, distrust, and fear of failure. The consequences of the micromanaging behavior could lead to harming supervisor-learner relationship, lower team morale and be a threat to the wellbeing of the trainee. Faculty development initiatives specific for clinical supervision are lacking.

Discussion and Conclusions: In general micromanagement is detrimental for trainees autonomy, competence and motivation and could be a threat to the team morale. We developed the Micromanaging Model which highlights twelve distinct behaviors which could differentiate the micromanaging attending from the adaptive attending who could tailor their supervision skills to fit the needs of the trainees. Two examples of these behaviors are situational awareness and the ability to recognize teachable moments. The adaptive attending creates a flexible zone of safety, which they can adjust based on their trust in the trainees accountability and autonomy. We propose that this model can serve for faculty development

Take-home Messages: Identify micromanaging behavior of faculty, its causes, and its negative effects on learning environment.
ABSTRACT:
Background: As we aspire to educate undergraduate medical students to become reflective practitioners, we have developed an ePortfolio to promote and assess their professional identity formation (PIF) throughout medical school. The creation of an ePortfolio containing artifacts related to PIF alone is suboptimal in the advancement of their identity as future healthcare professionals unless it is coupled with relevant coaching, portfolio structure and guidelines; relevant experiences and materials, and summative assessment. 1 Realizing faculty need training to assume the role of coach in addition to advisor, we have developed a coaching program to properly prepare them to engage with students regarding the use of the ePortfolio to promote and assess their professional identity formation.

Summary of Work: With the widespread adoption of competency-based models of medical education, the role of the student has evolved from that of a passive recipient of knowledge to one that requires students to be active partners in the educational process. 2,3 Therefore, faculty need to be adequately trained to provide appropriate coaching when engaging with students to discuss their PIF ePortfolio.

Summary of Results: Based on a faculty survey administered in 2017 at Geisinger Commonwealth School of Medicine, 80% responded that they were only slightly or moderately able to assess students on the professionalism competency. New data from the 2021 faculty survey will be compared to the 2017 information so continuous quality improvement efforts can be made regarding faculty development.

Discussion and Conclusions: Based on the 2017 faculty survey, we created a faculty training program grounded in the R2C2 model to support the coaching needed to assist students with the advancement of their PIF using the ePortfolio. The R2C2 facilitated feedback model utilizes four phases - build relationship, explore reactions, explore content, coach for performance change as a framework for coaches and students to engage in meaningful conversations.

Take-home Messages: We believe the continual training of faculty is imperative to the success of the PIF ePortfolio and the transition from medical student to reflective practitioner.
The impacts and outcomes of faculty development programs designed to prepare faculty members for their various roles in health sciences education: A systematic review (9504)

Date of Session: 29 August 2021
Time of Session: 20:00 to 21:30

AUTHOR(S):
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Mahmoud Kohan, Alborz University of Medical Sciences, Iran
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ABSTRACT:

Background: Academic vitality depends on the expert and interested faculty members. Faculty development plays a key role in the promotion and excellence of the university. The aim of this systematic review was to compare and synthesize empirical health professions faculty development studies that addresses the question: What are the impacts and outcomes of faculty development programs designed to prepare faculty members for their various roles in health sciences education?

Summary of Work: The review, covering the period 1990-2020, comprised all potentially relevant articles faculty development programs in the following databases: ERIC, Scopus, PubMed, ScienceDirect, Google Scholar, Magiran and SID. Two authors independently performed the selection of studies, which followed the preferred reporting items for systematic reviews and meta-analysis (PRISMA) flowchart. Quality assessment was conducted using the Medical Education Research Study Quality Instrument (MERSQI) for all studies. Data were extracted using coding sheet included following components: authors, country and institution, type of program or intervention and duration, participants, faculties roles covered by the program, study design, outcomes, outcome level, study quality and MERSQI score out of 18.

Summary of Results: From an initial 3067 articles, 2412 articles were potentially relevant after duplicates removed. Of those, after titles and abstracts evaluation, 757 articles were selected for full text review. As a result of that review, 638 articles were excluded, leaving 119 for data extraction. The majority of articles was about programs in the U.S. and conducted at individual academic institutions. The most faculties roles covered by the program were information provider and coach, facilitator of learning and mentor, assessor and diagnostician and manager and leader and the interventions included workshops, seminar series, short courses, longitudinal programs. The most study designs included one group, pretest - posttest, one group, pretest- posttest, delayed post-test and non-equivalent control group, pretest- posttest. Among the 119 articles evaluated with the Kirkpatrick model, most assessed Levels 1, 2A, 2B and 3, but very few addressed Level 4. Overall satisfaction with faculty development programs was high.

Discussion and Conclusions: This systematic review showed a significant and positive impact of faculty development programs on participants self-reported teaching abilities and improvement in participants knowledge on different aspects of medical education. There were an overwhelming number of positive outcomes, which suggests that faculty development is beneficial. Further research to improve data collection and increase the use of robust methods is required.

Take-home Messages: positive impact of faculty development programs on participants self-reported teaching abilities and improvement in participants knowledge on different aspects of medical education
ABSTRACT:
Background: Medical Improv uses training techniques of improvisational theater to improve cognition, communication, and teamwork in the field of medicine. It is applied to train learners in being empathic, delivering bad news, and to increase learners comfort level and skills with uncertainty and ambiguity. In the literature, we did not find evidence that Medical Improv is effective for training faculty on how to provide feedback. A Medical Improv Feedback (MIF) workshop -approximately 30-35 participants- was conducted in 2019 at The Generalist in Medical Education Conference. Is a MIF workshop suitable for teaching faculty how to provide feedback?

Summary of Work:
To answer our research question, participants filled out a needs-assessment before and an evaluation after the workshop. The needs-assessment and evaluation consisted both of a 6-item Visual Analogue Scale (VAS) measuring feedback specificity (0=Low to 100=High), and two open-ended questions. With a sampled T-test (α=0.05), the perceived feedback specificity before and after the workshop was compared. The open-ended responses were independently analyzed by two authors (MT, MR), themes generated, compared, and discussed until consensus was reached.

Summary of Results: 18 participants returned their questionnaire. There was significant average difference (t9 =2.9, P>.02) between the VAS-scale score in the needs-assessment (m=64.4, sd=20.6) and evaluation (m=80.2, sd=13.4). Common themes in the needs-assessment showed that participants wanted to learn (a) how to create strategies to teach their own faculty feedback, and (b) how to incorporate feedback (models) in teaching. Frequently mentioned struggles include time, emotions, and providing learner-oriented feedback. Participants mentioned repeatedly they want to apply documenting their observations in their own practice.

Discussion and Conclusions: The VAS-scale shows that participants perceived the MIF workshop as informative and they also perceived their performance being improved. This is also confirmed by the themes identified in the evaluation. Improv exercises, particularly addressing the challenges of providing feedback, should receive more attention in follow-up workshops. Only a small group completed both the needs-assessment and evaluation, this also affects outcomes. The voluntary group of medical educators with an interest in this topic may not be representative of clinical faculty.

Take-home Messages: Medical Improv can be a suitable technique to teach feedback providing strategies.
Factors Affecting Reflective Abilities of Clinicians in Non-Western Countries: A Case Study of Egypt (8125)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 20:15

AUTHOR(S):
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ABSTRACT:
Background: Reflective practice has been widely recognized as one of the integral competencies in several clinical training programs. Reflection is the self-regulation of actions and how to learn from them. Despite the value of reflection, still assessing the abilities of clinicians to engage in reflective practice is not part of the Egyptians Graduate training programs. This study was the first to be conducted in Egypt to assess factors affecting the reflective abilities of residents and fellows in postgraduate training programs.

Summary of Work: This study adopted a concurrent mixed method in which self-administered questionnaires and focus group discussion were used. 200 residents and fellows from different clinical training programs were recruited. For assessing their reflective abilities, GRAS Personal Reflective abilities and Questionnaire of Reflective Thinking QRT were used. Additionally, four focus group discussions were conducted to elicit in-depth views from 30 participants regarding factors affecting their reflective abilities.

Summary of Results: 44% of participants showed a moderate level of personal reflective abilities (86.7±7.8). The level of the postgraduate training program had a significant effect on the levels of personal reflective abilities (p < 0.03). Regarding Reflective Thinking abilities, the Reflection subscale was the most adopted by participants followed by the understanding subscale. Furthermore, clinical specialty had an impact on the participants scores in the Understanding and Critical Reflection subscales (p < 0.001).

Discussion and Conclusions: Several factors related to the type of clinical specialty, a large number of residents within the program, the lack of clinical supervision, and the cultural dimensions such as power distance and collectivism in Egyptian society have come up through this study. Reflection for the participants is a tacit practice done every day, yet they expressed major concerns regarding the privacy of reflection, lack of a safe environment to encourage reflection, shame culture within the training programs, and finally fear of being judged based on their reflections.

Take-home Messages: Reflection helps clinicians to learn from experience, audit their performance, and achieve professionalism. However, while designing opportunities for reflection, we should take into consideration the nature of the clinical specialty, learning styles adopted by its members, and the power dynamics in the clinical training program.
#SC20: SC - Postgraduate Education 3

#SC20.2 Shared decision-making behaviour in different types of decisions - new insights for research and education (8649)

Date of Presentation: 29 August 2021  
Time of Presentation: 20:15 to 20:30

AUTHOR(S):  
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ABSTRACT:  
Background: Shared decision making (SDM) is increasingly championed as the preferred model for patient care. SDM research has focused on one-off decisions about treatment, i.e. the main decision in a medical encounter. However, numerous other decisions of various types and categories are made in a medical consultation. We assessed to what extent patients are being actively involved in different decision types in medical encounters.

Summary of Work: We performed a cross-sectional analysis of video-recorded encounters between 41 medical specialists and 727 patients at a large Dutch teaching hospital. Two independent raters distinguished the main decision from all other decisions in the encounters. They classified each decision in decision type: treatment, diagnostic tests, follow-up and advice. Each decision was scored using the OPTION-5, a validated instrument assessing the extent that clinicians involve patients in decision-making, consisting of five items, each scored from zero (no effort) to four (exemplary effort). We compared total OPTION-5 scores (rescaling it to range from 0 to 100) between different types of decisions, both in univariate analyses and in multilevel analyses taking the nested nature of the data into account.

Summary of Results: In the 727 consultations, the mean OPTION-5 score of the main decisions was higher for treatment decisions (n=535, 19.18±17.16) than for decisions about diagnostic tests (n=108, 14.58±16.75) or follow-up (n=84, 3.81±8.09, p<0.001). This difference remained significant in multilevel analysis, in which longer consultation duration was the only other factor significantly associated with higher OPTION-5 scores (p<0.001).

Discussion and Conclusions: Overall, there was little patient involvement in the decision-making process in these consultations (low mean OPTION-5 scores). The limited patient involvement was mostly related to treatment decisions and SDM behaviour was more often seen in longer consultations. These results confirm that there are different types of decisions in medical specialist consultations, and show that the degree of patient involvement in the decision is dependent on decision type and consultation duration.

Take-home Messages: Studies on physicians SDM behaviour should specify the type of decision being studied, and physicians SDM training should be tailored to promote patient involvement in different types of decisions, allowing sufficient consultation time to support the application of SDM.
My Eyes Opened. Processes of Increasing Medical Residents Intrinsic Motivation: A Qualitative Study (8102)

Date of Presentation: 29 August 2021
Time of Presentation: 20:30 to 20:45

AUTHOR(S):
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ABSTRACT:
Background: Motivation has been shown to be a predictor for learning, academic success, persistence and the continuation of studies. These are especially well researched among medical students, but one that has rarely considered among medical residents. This study aimed to determine, qualitatively, how medical residents develop intrinsic motivation to learn and work in clinical training settings.

Summary of Work: This is a descriptive qualitative study which is widely used in healthcare research. We conducted semi-structured interview aimed to explore key participants in-depth experiences of and perspectives on intrinsic motivation. The authors interviewed seven postgraduate Japanese medical residents who belonged to postgraduate residency program between June 2016 to August 2019. The transcripts were analyzed using the sequential and thematic qualitative data analysis technique steps for coding and theorization, which entails coding steps, from open to selective; writing a storyline using the final selective codes; and theorizing based on the storyline. We interpreted the data using a social constructivism paradigm.

Summary of Results: We delineated a process for increasing medical residents intrinsic motivation on a continuum from external stimulation (a self-handle environment and near-peer role modeling), gap recognition, awareness, as well as internalization and integration to intrinsic motivation. The residents awareness of autonomy, responsibility, and independence was most effective in enhancing their intrinsic motivation, which was also strongly reinforced by a psychological feeling of competence.

Discussion and Conclusions: Medical residents experiences in the clinical training environment bolstered their intrinsic motivation. This process was expressed on a continuum from extrinsic to intrinsic motivation, which strongly reflects the self-determination theory. However, the results introduce a novel finding: for medical residents, external stimulation (the self-handle environment and near-peer role modeling) automatically engenders the first step of perception regarding important cognitions (autonomy, responsibility, and independence) as physicians.

Take-home Messages: Clinical education can support medical residents intrinsic motivation by regulating their external environment. It could foster one of the key components of physician professionalism. Thus, we assert that the potential benefits of designing an appropriate training environment include gains in autonomy, responsibility, and independence.
#SC20: SC - Postgraduate Education 3

#SC20.4 General practice residents self-confidence: a definition. Narrative synthesis of a literature review and modelisation (8553)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:45 to 21:00

**AUTHOR(S):**  
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Eric Dionne, UOttawa-ISM Research Chair in Medical Education, Canada

**ABSTRACT:**  
**Background:** In France, more than 15% of medical student suffer from Burn Out Syndrome and low self-confidence is one of its risk factors. There is no existing definition based on a consensus found in the literature. Self-efficacy is well presented but more related to a specific action whereas self-confidence is a comprehensive term. It is necessary to define self-confidence to understand its key elements and evolution. The aim of this work was to define general practice (GP) residents self-confidence.

**Summary of Work:** An international literature review on self-confidence was conducted using the following key words: confidence, definition, narcissism, sociology, cognitive. PubMed, CAIRN, university library of Diderot and Lyon 1 databases were searched. It was followed by a narrative synthesis using authors key ideas. A self-confidence evidence-based definition was developed. Three francophone researchers permitted methodological triangulation of these ideas for a consensus definition.

**Summary of Results:** Three groups appeared: psychological, sociological and cognitive. The perspectives are choices, behaviours, self-presentation, knowledges, self-help, fear and risk management. GP residents self-confidence is their confidence based on rational and non-rational perceptions, in their competency to develop appropriate practice.

**Discussion and Conclusions:** Through his self-confidence, the GP resident develop a self-evaluation of his ability to practice, using various elements. Our work limits are related the subject complexity and the concepts synthesis which induced the methodology used. In spite of the lack of studies in the literature, self-confidence is an important concern for GP residents. It values the originality of our work. This preliminary work will need to contextualize this definition and its elements in a competency based medical education.

**Take-home Messages:** GP residents self-confidence is complex, based on rational and non-rational perceptions, in their competency to develop appropriate practice. Self-confidence is an important concern for GP residents. This encourages us to develop the work on developing tools to evaluate GP residents self-confidence during their curriculum.
#SC20: SC - Postgraduate Education 3

#SC20.5 Shaping physicians’ moral orientation through education to minimize moral distress in clinical practice (9306)

Date of Presentation: 29 August 2021
Time of Presentation: 21:00 to 21:15

AUTHOR(S):
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Karen Burns, University of Toronto, Canada
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ABSTRACT:
Background: Moral distress is defined as a cognitive-emotional dissonance experienced when being compelled to witness or deliver patient care that does not meet personal moral standards. Moral distress is an important and under-recognized problem among medical trainees. Moral distress has direct negative consequences for patient care (e.g., decreased compassion), individuals (e.g., burnout), and the healthcare system (workforce attrition).

Summary of Work: We conducted successively two qualitative, interview-based studies of practicing critical care physicians and inter-disciplinary physicians-in-training, respectively. Our objective was first to enrich our understanding of moral distress experiences and relationships between professional interactions, context, and moral distress. We then further focused on the role of moral orientation (how individuals usually perceive and resolve moral dilemmas) in clinical moral distress. Phone interview audio-recordings were transcribed verbatim and analyzed using an inductive thematic analysis. We used thematic saturation, researcher triangulation, and reflexivity to ensure rigor.

Summary of Results: We interviewed 20 critical care physicians and 20 physicians-in-training. Moral orientation combined with clinical, legal, and social contexts to contribute to moral distress. Participants commonly described four moral orientations: righteous, defeatist, deferring, and empathetic. We described how individual susceptibility to moral distress depends on moral orientation, how individuals learn to manage moral dilemmas over time, how different moral stances lead to conflicts within team, and how team communication was as important as communication with patients/families to reduce moral distress.

Discussion and Conclusions: Moral orientation is a key aspect of moral distress. Certain moral orientations, as well as divergent moral orientations among colleagues, create internal and external conflicts, and represent promising targets of educational interventions aimed at reducing moral distress. For example, education on the types of moral orientations and on their impact on moral decision-making, moral distress, and perceived professional rewards could help individuals and working environments develop moral distress mitigating strategies.

Take-home Messages: (1) Moral orientation is a key aspect of moral distress that takes shape during physician professional development. (2) Moral orientation is not a static condition of the person, but instead evolves in response to educational and professional individual and collective experiences. (3) Moral orientation can therefore be the target of educational interventions at the individual and group levels.
Residents as persons: Transformational changes through residents’ informal, self-directed learning for professionalism

Date of Presentation: 29 August 2021
Time of Presentation: 21:15 to 21:30

AUTHOR(S):
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Maureen Topps, Cumming School of Medicine, University of Calgary, Canada

ABSTRACT:

Background: Postgraduate trainees (residents) are required to convey professional behaviours as they navigate complex clinical environments. However, little is known about their informal learning for professionalism. Thus, we asked residents about professionalism challenges: 1) how they identified professionalism challenges, 2) what supported successfully addressing professionalism challenges and 3) the impact of addressing professionalism challenges. Our findings will be important to developing resident education for professionalism.

Summary of Work: From 2015-2016, twenty-five residents across specialties and multiple university-affiliated teaching hospitals participated in appreciative inquiry informed audio-taped semi-structured interviews. Transcripts were categorized deductively for the 2015 CanMEDS Professional Role element addressed (commitment to patients, society, the profession, and physician health). Descriptive content analysis was used to develop themes across categories.

Summary of Results: Residents actively engage in informal self-directed learning for professionalism - addressing conflicting priorities to ensure excellent patient care, providing informal feedback to address others professional lapses, and gaining self-awareness and wellness. Three factors supported professional behaviours: Intentional use of guiding values, supportive relationships, and reflection prompted by emotions. Many residents described transformative personal and professional growth through addressing professionalism challenges.

Discussion and Conclusions: Residents self-directed informal learning for professionalism fully engages them as persons, with emotions, motivations and values. Their descriptions of their personhood, was similar to the Physician as Person role previously described in the Educating Future Physicians of Ontario project. It is also similar to the Reflector role described separately in the Netherlands. Interactive case-based discussions of professional challenges may support explicit education for the Professional Role commitments and support the person of the resident.

Take-home Messages: 1. Residents engage in informal, self-directed learning for professionalism. 2. Residents identify professionalism challenges in commitments to excellent patient care, providing feedback to others about unprofessional behaviour, and maintaining physician health. 3. Active self-directed learning for professionalism, fully engaged residents as persons, with emotions, motivations and values. 4. Interactive case-based discussions of resident professionalism challenges may support explicit education for Professional Role commitments and support the Physician as Person role.
#SC21.1 Using Needs Assessment to design a new training programme for frontline healthcare professionals: Part 1 - A Focus Group Study (8838)

Date of Presentation: 29 August 2021  
Time of Presentation: 20:00 to 20:15

AUTHOR(S):  
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ABSTRACT:  
Background: The use of needs assessment for curriculum design in medical education is well documented, yet its lack of use for the design of training for CPD is widely noted. We apply a 2 Part mixed methods Needs Assessment with (1) focus groups and (2) a survey, to determine the acceptance and motivation of nurses, pharmacists and general practitioners towards Precision Medicine; a novel approach to patient care. With the end goal of implementing a national blended training programme across Switzerland, we report on Part 1: Focus Groups.

Summary of Work: We conducted 2 focus groups (n=12) delivered in French and German with equal professional participation. We adopted Kirkpatricks levels of evaluation to guide the question route to investigate (1) learners reactions (2) perceived potential of the topic (3) content and structure, and (4) motivation. The focus groups were audio recorded, transcribed by intelligent verbatim and translated to English. NVivo was used for data analysis and interpretation following the Framework Method of analysis. The results of the Focus Groups will be used to guide Part 2.

Summary of Results: Not only is Precision Medicine a new topic, it is unfamiliar with no common understanding. There was acceptance of a more precision approach to care across all professions, with perceived positive implications for patients. Valuable insight was offered on a proposed list of learning objectives. The objectives will be refined and presented to a wider expert group in Part 2. All participants expressed concerns on readiness within their professions which included, insufficient system infrastructure, lack of time to attend needed training, lack of clarity for use in practice and time needed to build a supporting network.

Discussion and Conclusions: Our findings offer essential feedback on the description, content and form of training. We conclude that an important challenge will be to balance the expectations for change by health system leaders with the perceived need for change among frontline healthcare professionals.

Take-home Messages: The essential role of needs assessment, to avoid a top-down approach, offers a foundation to deliver a training programme that is fit for purpose, acceptable to the target audience and fills a perceived gap in current practice.
#SC21: SC - Continuing Professional Development 2

#SC21.2 Medical professionals’ understanding of their professional development: Content analysis and implications (9235)

Date of Presentation: 29 August 2021
Time of Presentation: 20:15 to 20:30

AUTHOR(S):
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ABSTRACT:
Background: To explore possibilities of development of teaching and learning specifically in continuous professional development for medical practitioners, a qualitative study was initiated. Objectives of the study are: a) to explore understanding of professional development within random sample of medical practitioners; b) to explore content of their professional development activities; c) to draw conclusions on how these findings may shape teaching and learning in continuous professional development for medical practitioners.

Summary of Work: An electronic survey consisting of central open-ended questions and additional questions regarding socio-demographic information was developed. Respondents were encouraged to give broad answers to the open-ended questions regarding their understanding of the professional development concept and their actual professional development practice.

Summary of Results: 60 medical professionals participated in the survey. There were content analysis of data and coding made accordingly. The following categories were used: functional development, attitude development, formal learning, informal learning. Also, ambiguity category emerged when coding was made. In total, 258 units were coded leading to the following ratios - formal vs informal learning as 88 to 69; functional development vs attitude development as 53 to 2. The most used words for description of their professional development were: knowledge, skills, courses.

Discussion and Conclusions: Respondents demonstrate a narrow understanding of the content of professional development. Formal professional development dominates in the answers of medical professionals. The experience of informal learning mostly manifests itself as an independent analysis of literature. There are questions for further research emerging from these results: What effect does the choice of professional development type have on the fact that a professional works in several jobs at the same time? How does the length of service and experience influence the choice of the type of professional development? Why medical professionals pay limited attention to improvement of their attitudes and beliefs during professional development?

Take-home Messages: To shape continuous professional development for medical professionals, their understanding of what professional development means should be taken into account. Disturbingly low focus on attitude development should be addressed in the nearest future. The fact of multi-employment should be explored more as it could [negatively?] impact medical professionals involvement in their professional development.
Outcomes of commitment-to-change statements: How are planned practice changes different from those that are unplanned/unanticipated? (8957)

Date of Presentation: 29 August 2021
Time of Presentation: 20:30 to 20:45

AUTHOR(S):
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ABSTRACT:
Background: The commitment-to-change (CTC) approach is a useful strategy for CME/CPD providers to assess congruence of planned practice changes (CTC) with program learning objectives and to identify unanticipated learning outcomes. Follow-up of planned and unplanned/unanticipated practice changes needs further exploration.

Summary of Work: Family physicians belonging to Practice-Based Small Group learning (PBSGL) program meet monthly to discuss educational modules on various clinical topics. PBSGL sessions end with completion of a Practice Reflection Tool (PRT) using the CTC strategy. CTC statements are reviewed 2-6 months later and implemented and/or unanticipated practice changes are documented on a follow-up PRT. Statements on PRTs submitted for professional credits between 2017-2018 for 28 different clinical topics were analyzed. Quantitative analysis included number of implemented and unanticipated practice changes and percentage of congruence with CTC statements and module objectives. Qualitative analysis involved comparing themes created for implemented and unanticipated practice changes.

Summary of Results: 1400 PRTs (50 per module topic) with matching 661 follow-up PRTs from 681 PBSGL groups were randomly selected for analysis. There were 2,259 CTC statements (of which 1111 CTC had no follow-up) and 999 statements documenting practice changes. Of the reported practice changes, 527 (53%) statements could be linked to CTC statements, of which 80% (441/527) were congruent with module objectives. Of the 472 (47%) additional reported practice changes, 224 could not be linked to CTC statements and 248 were identified as unanticipated changes. Of the reported practice change with no link to CTC statements 73% (345/472) were congruent with module objectives. Most statements for planned and unplanned/unanticipated practice changes were similar and included themes such as screening, diagnosis, treatment, and discussion with patients. Depending on the module topic, additional themes for unplanned/unanticipated practice changes were related to office management/process, resources, implementation tools and seeking more information.

Discussion and Conclusions: Most planned and unplanned/unanticipated practice changes were congruent with module objectives. Practice change themes not congruent with module objectives were related to resources, implementation tools, office processes and seeking further information.

Take-home Messages: CME/CPD providers should be reassured that most unplanned/unanticipated practice changes are congruent with educational objectives. The CTC approach underestimates the practice changes physician are going to make.
#SC21: SC - Continuing Professional Development 2

#SC21.4 International collaboration in Continuing Medical Education across the Americas (8221)

Date of Presentation: 29 August 2021
Time of Presentation: 20:45 to 21:00

AUTHOR(S):
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Sharon Wolman, EviMed, Uruguay

ABSTRACT:
Background: The University of Virginia (UVA) Office of Continuing Medical Education (CME) has been involved in web-based and innovative continuing education for physicians, nurses and healthcare professionals for over twenty years. EviMed is a company that provides multilingual online programs for healthcare professionals across the Americas. The COVID-19 Pandemic accelerated the collaboration between the two organizations and other regional partners, described here and in https://www.mededpublish.org/manuscripts/3148

Summary of Work: During 2019, a kidney transplant course for Latin America was designed by University of Virginia (USA) and Latin American experts from Brazil, Uruguay and Colombia, and then implemented between May and July 2020 in Spanish and in Portuguese for a Latin American audience of nephrologists. It was a sequential, mostly asynchronous and highly interactive educational activity delivered and tutored in the languages of the target audiences, over 8 weeks, with a workload of 30 hours. Interactivity was based on clinical simulations and online forums to discuss cases. Based on the successful results described below, an English version of the course for North America and other regions is being developed and will be given between April and June 2021.

Summary of Results: Despite the course being delivered at the beginning of the COVID-19 pandemic, and the fact that it had a registration fee, attendance was about 10% of the target audience of nephrologists in Latin America. There was a wide geographical distribution of the 824 participants, coming from 22 countries. Completion of each of the 8 modules was stable over time, reaching 60% in the final week. The 2021 course for North America required certain adaptations, such as the need to address a more diverse audience of practitioners, also including physician assistants and nurse practitioners, according to clinical practice in the USA, and the need for continuing education credits through US-based interprofessional accreditation.

Discussion and Conclusions: This multi-institutional program that applies social learning for large audiences in the native languages across the Americas has resulted in a positive experience, and will be the basis for deploying a larger number of joint programs in the future.

Take-home Messages: International collaboration in CME across regions and cultures demands flexibility and time to be developed successfully.
#SC22: SC - Assessment - Clinical

#SC22.1 To what extent are examiners consistent in their stringency when awarding global grades and domain scores? (8927)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 20:15

AUTHOR(S):
Matt Homer, Leeds Institute of Medical Education, UK*

ABSTRACT:
Background: Variation in examiner stringency is a recognised problem in many assessments of performance such as the OSCE. This can be a serious threat to the validity of assessment outcomes, particularly at the station level, but the stated strength of the OSCE is that such error might largely balance out over the exam as a whole. There has been little work looking at how individual examiner stringency might compare between the awarding of global grades and of domain scores at the station level.

Summary of Work: This study uses linear mixed models to estimate the impact of different factors (examiner, station and candidate) on domain scores and, separately, on global grades. The data (14,467 candidates, 867 examiners, 390 stations; 454 exams) is from an 18 station OSCE for international medical graduates who want to work in the National Health Service in England (over the period November 2016 to March 2020).

Summary of Results: Variation due to examiner is approximately twice as large for domain scores as it is for grades (16% vs 8%). However, combined measures of exam reliability (phi-coefficient, treating all non-candidate variation as error) across all data are 0.63 and 0.70 for grades and domains scores respectively. Finally, the correlation between the two separate estimates of stringency for individual examiners (one for grades and one for domain scores) is quite high - r≈0.75.

Discussion and Conclusions: Overall, these results suggest that examiner stringency impacts more on station level domain scores than on global grades but, accounting for other sources of error, the former are more reliable than the latter. Across all the data, examiners tend to be fairly consistent in their stringency when awarding these separate measures. Implications of these findings for standard setting using examinee centred methods like borderline regression will be discussed.

Take-home Messages: This work suggests that most examiners have similar behaviour in terms of stringency whether awarding domain scores or global grades. More work is needed to better understand those examiners that do not fit this pattern, and to work through the impact of these findings on standard setting methods that use student level grades/scores, and on overall pass/fail decisions.
**#SC22: SC - Assessment - Clinical**

**SC22.2 Tele-OSCE to assess preparedness for UMSLE Step 2 CS: COVID-19 effects on clinical skills summative assessment and its future (7855)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:15 to 20:30

**AUTHOR(S):**  
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**ABSTRACT:**  
**Background:** Worldwide mandatory healthcare policies due to the COVID 19 pandemic meant that in-person OSCE was no longer a safe assessment option. US medical schools and around the world had to urgently adjust their curriculum for continuity of medical education. We shared our observations during this transition at Ross University School of Medicine. Providing comparable score for clinical skills SEP, CIS and ICE assessments, demonstrating that OSCE and TeleOSCE can be used for preparation of USMLE Step 2 CS  

**Summary of Work:** Initial data results had two cohorts of students with similar academic backgrounds who received the same OSCE training but two methods of clinical skills assessment (in-person OSCE vs TeleOSCE) were used due to suspension of in-person. For these clinical skills assessments we used a 3 case OSCE modeled after the USMLE step 2 CS. It took place during the last two weeks of an 8-week clinical clerkship. Both cohorts received the same mix of cases. There was a total of 273 students.  

**Summary of Results:** The data demonstrates that summative assessment of CS is not significantly different between OSCE and TeleOSCE for areas that involve data gathering, data interpretation, and data reporting. The notable exception was a significant difference with the assessment of physical exam skills, requiring further research on its delivery. Where F test of significance, $P\leq0.05$, was applied to test the null hypothesis that there were no differences within-subject.  

**Discussion and Conclusions:** USMLE has discontinued Step 2 CS early 2021, currently USMLE is looking into developing a new CS assessment method. Therefore, CS training is still an important area for medical school curriculums. TeleOSCE not yet embraced by USMLE, lack of research is needed to determine its relevance to CS training. US Medical schools may be missing an opportunity to leverage valid components of telehealth models for CS assessment training.  

**Take-home Messages:** This topic is not unique our school but many medical schools around the world. Several medical schools have adapted concepts of telehealth into a TeleOSCE as a temporary solution to CS training. Further quantitative research is needed that validates TeleOSCE can be used for preparation of CS for medical students.
The development, acceptability and validity of a summative virtual OSCE

Date of Presentation: 29 August 2021
Time of Presentation: 20:30 to 20:45

AUTHOR(S):
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Gil Myers, UCL Medical School, UK
Jenny Hopwood, UCL Medical School, UK

ABSTRACT:
Background: The 2020 coronavirus pandemic meant that many medical schools faced the challenge of redesigning their assessments to run in virtual formats. In June 2020, at UCL medical school we held a virtual objective structured clinical examination (OSCE) for a group of final year students assessing clinical communication skills, written communication, practical skills, examination skills and professionalism. Our aim was to evaluate the development, acceptability, and face and content validity of a virtual OSCE.

Summary of Work: We developed and delivered an eighteen station virtual OSCE on Microsoft Teams. Face validity and acceptability were assessed using feedback from examiners, role players, administrators and students. Content validity was assessed by comparing the content of the virtual OSCE stations with the undergraduate UCL curriculum and the GMC Outcomes for Graduates.

Summary of Results: The virtual OSCE was feasible to conduct, acceptable to all participants and had a high level of perceived face and content validity. We successfully examined the full range of competencies usually tested in a face-to-face finals OSCE, with only physical examination identified as an area that was less suitable to assess in a virtual format. It was however noted that the preparation time for the development of this format was longer than for a face to face OSCE.

Discussion and Conclusions: The virtual OSCE was a feasible way to examine students in a range of skills with high face validity. Although designed for use during the pandemic for a small group of students, this format could be used to run similar, larger-scale assessments in the future if remote assessments are required. Given the extensive implementation of online consultations within clinical environments during this pandemic, these findings are also important as we establish ways of assessing virtual consulting skills.

Take-home Messages: A virtual OSCE is an acceptable alternative to a face to face OSCE however requires extensive preparation and planning.
#SC22: SC - Assessment - Clinical

#SC22.4 Examiner perceptions of the UK Recorded Consultation Assessment introduced during the COVID-19 pandemic: Cross-sectional study (8632)

Date of Presentation: 29 August 2021
Time of Presentation: 20:45 to 21:00

AUTHOR(S):
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ABSTRACT:

Background: Objective structured clinical examinations (OSCEs) for high stakes licensing assessments have had to be adapted to reduce risks to candidates, examiners and patients or simulators from COVID-19, and to allow trainees join the medical workforce. The Recorded Consultation Assessment (RCA) was rapidly piloted to replace the Clinical Skills Assessment (CSA) OSCE for UK general practice licensing during the pandemic. We aimed to investigate examiner perceptions of the RCA.

Summary of Work: We used a cross-sectional survey of RCA examiners with attitudinal, demographic and free text response options. We conducted descriptive statistical and factor analysis of quantitative data using Stata 15.1 and qualitative thematic analysis for free text responses supported by NVivo 12.

Summary of Results: Overall, 182 of 260 (70%) examiners completed the questionnaire. Responders felt that consultations submitted were representative of the work of a typical GP during the pandemic and provided a good sample of cases across the curriculum. They were also generally positive about the logistic, advisory, and other support provided, as well as the digital platform. Despite responders generally agreeing there was enough information available in video or audio consultations to judge candidates data gathering, clinical management, and interpersonal skills, they were less confident about their ability to make judgments of candidates performance compared to the CSA. The qualitative analysis of free text responses detailed the problems of case selection and content, explained examiners difficulties when making judgments, and detailed the generally positive views about support, training, and information technology. Responders also provided helpful recommendations for improving the assessment.

Discussion and Conclusions: The RCA was feasible and broadly acceptable, although examiners experienced challenges of case selection, case content and judgments and suggested areas for improvement.

Take-home Messages: The evaluation showed that examiners were generally positive towards the RCA but were more equivocal about making judgments of performance and suggested areas for improvement.
Are raters influenced by prior information about a learner? A review of assimilation and contrast effects in assessment (8045)

Date of Presentation: 29 August 2021
Time of Presentation: 21:00 to 21:15

AUTHOR(S):
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ABSTRACT:
Background: Understanding which factors impact rater judgements is important to ensure quality assessments. Prior performance information (PPI) is one such factor and can be acquired directly, when the rater sees the same learner or different learners over multiple performances such as in an OSCE setting. It can also be acquired indirectly, when the rater is provided with external information about the same learner prior to rating a performance (learner handover). The purpose of this narrative review was to summarize and highlight key concepts from multiple disciplines regarding the influence of PPI on subsequent ratings and discuss implications for assessment.

Summary of Work: A total of 24,442 titles and abstracts were screened. The database searches included OVID MEDLINE, including Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Embase, ERIC and PsycINFO, ABI/INFORM (ProQuest) and Business Source Complete (Ebsco).

Summary of Results: Fifty-two experimental studies were reviewed. Key findings include a) assimilation (rater judgments biased towards the PPI) with indirect PPI, such as learner handover; b) contrast (rater judgments biased away from the PPI) with direct PPI, such as an OSCE setting; c) negative PPI appears to have a greater effect than positive PPI; d) when viewing multiple performances, context effects of indirect PPI appear to diminish over time; e) context effects may occur with any level (poor, average, superior) of target performance; f) increasing rater cognitive load increases context effects; and g) some raters are not susceptible to context effects, but it is unclear what factors are predictive as rater expertise and training do not consistently reduce effects however rater accountability may.

Discussion and Conclusions: Raters appear to be more biased if they receive highly polarized negative information compared to more nuanced information. Potential strategies to reduce rater bias would include making raters more accountable, providing specific standards, reducing rater cognitive load and allowing raters to view several performances of the same learner.

Take-home Messages: This review provides a common language and framework when considering how PPI may influence raters and has implications for real-world assessment settings. It also highlights the complexity of trying to predict rater judgments.
#SC23: SC - Students & the COVID-19 Pandemic 1

#SC23.1 Exploring the impact of a hybrid medical school model on undergraduate medical student wellbeing during the COVID-19 pandemic: An ethnographic study (9621)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 20:15

AUTHOR(S):
Rebecca Charles, Keele University School of Medicine, UK*
Brianne Wenning, Keele University School of Medicine, UK
Janet Lefroy, Keele University School of Medicine, UK

ABSTRACT:
Background: Wellbeing is a complex, multi-faceted concept and is impacted significantly by challenges or changes placed upon an individual. The emergence of a novel coronavirus (SARS-CoV-2) pandemic has resulted in substantial and extensive changes to the delivery of undergraduate medical education, with a significant shift towards distance, or virtual, learning, as part of a hybrid delivery model. This paper explores the impact of the change to a partly virtual undergraduate medical school on student wellbeing during the COVID-19 pandemic.

Summary of Work: Ethnographic field work, semi-structured interviews and focus groups were used to draw on the narrated experiences of medical students and staff at Keele University School of Medicine. Field work was conducted both in-person and in the virtual learning environment through Microsoft Teams. Fieldwork notes and interview transcripts were analysed using grounded theory.

Summary of Results: Flexibility, socialisation, engagement in learning and sense of belonging were identified as key themes. Lack of socialisation, as a result of COVID-19 measures and a high degree of virtual learning, was repeatedly identified by both students and staff. Students were disengaged from the learning process, and staff highlighted difficulties in identifying struggling students through the virtual environment. Sense of belonging to the learning group was impacted by lack of face-to-face contact with peers. Support from the Faculty, and student expectation, were also identified as factors in maintaining student wellbeing.

Discussion and Conclusions: It is clear that the move to a partly virtual medical school model has far-reaching implications for medical student wellbeing. When designing curricula with virtual learning elements, curriculum designers should be aware of the potential impact on student wellbeing. Institutions need to provide wellbeing support to students on courses with a virtual component, and training for tutors and curriculum designers.

Take-home Messages: • A partly virtual medical school model can positively and negatively impact medical student wellbeing. • Virtual curriculum delivery should be designed to support wellbeing. • Institutions play a role in supporting students and staff to engage in virtual learning environments.
**#SC23: SC - Students & the COVID-19 Pandemic 1**

**#SC23.2 Impact of Home Confinement following the COVID-19 Pandemic on Medical Students’ Mental Health in Morocco (9739)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:15 to 20:30

**AUTHOR(S):**  
Youness Touissi, Mohammed 5th University, Morocco*  
Ghita Hjiej, Mohamed Premier University, Morocco  
Maryam Fourtassi, Mohamed Premier University, Morocco  
Abderrazak Hajjioui, Mohamed Ben Abdallah University, Morocco

**ABSTRACT:**  
**Background:** Moroccan medical students encountered uncommon stressors during the lockdown, including the interruption of their studying schedules and clinical rounds and the desperate need to adjust to new forms of studying, raising the need for further research to help understand the possible effect of this public health and economic crisis on the psychological wellbeing of the next generation of healthcare professionals.  

**Summary of Work:** The study aimed to assess the mental health of Moroccan medical students via the prevalence of anxiety and depression among students after 4 weeks of lockdown, and to explore possible risk factors underlying these psychological conditions. The study was based on an online survey addressed to medical students from all public medical faculties in Morocco, Anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS).  

**Summary of Results:** out of 3167 responses, the symptoms of anxiety and depression were identified in 1217 (38.4%) and 1912 (60.4%) of our respondents, respectively. Of these, 836 (26.4%) demonstrated their need for psychological help, also a variety of independent risk factors for anxiety and depression during confinement was established, including enrollment in the 1st cycle of medical studies (p=0.006), unpleasant living conditions (p<0.001), significant shifts in sleeping habits (p<0.001) and major changes in eating habits (p<0.001), while female gender (p<0.001) was a risk factor for anxiety.  

**Discussion and Conclusions:** The COVID-19 pandemic has brought many changes in the populations lifestyle with a huge impact on Mental health either directly or indirectly as a result of the confinement measures. Specific interventions should be implemented to maintain the mental health of medical students, as future providers of care, especially in extreme situations like the current pandemic.  

**Take-home Messages:** COVID-19 pandemic has had a negative impact on medical students mental health, and specific interventions should be implemented urgently to help them recover their psychological balance.
#SC23: SC - Students & the COVID-19 Pandemic 1

#SC23.3 Association of stress management with compliance towards preventive measures of COVID-19 in medical students across Pakistan: A cross-sectional study (7846)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:30 to 20:45

**AUTHOR(S):**  
Shoaib Ahmad, Punjab Medical College, Pakistan*  
Shkaib Ahmad, Dera Ghazi Khan Medical College, Pakistan  
Hiba Khan, Dubai Medical College, Dubai, UAE

**ABSTRACT:**  
**Background:** The adherence to preventive measures of COVID-19 with the novel evidence in our research can be further implemented as a non-pharmacological therapy for low-grade stress and anxiety. Additionally, this study can be used as proof that abiding by the recommendations is in fact a stress reliever on its own and can help persuade the population to follow preventive measures more, allowing for an even more biddable society to control the outbreak. The basic aim was to investigate the relationship between managing stress and compliance to preventive measures of COVID-19. Moreover, to identify a psychological gain that comes with the following recommended preventive measures.

**Summary of Work:** A cross-sectional study with 1342 medical students was conducted in medical colleges across Pakistan. On 30th May 2020, a questionnaire to assess preventive measures and stress management was placed at end of a national quiz competition. The questionnaire had good reliability (Chronbachs Alpha > 0.7) and validity. Chi-square and t-test were used for comparison among groups. IBM SPSS 26.0 was used for data analysis.

**Summary of Results:** Out of 1342 medical students, 881 (65.6%) were females and 461 (34.4%) males. 1021 participants (76%) of the sample who claimed they could manage stress had a better mean score of 11.33 ± 1.79 (out of 13) for preventive practices in comparison to a score of 10.09 ± 2.92 for the 321 (24%) participants who couldn’t manage stress (p=0.000). Moreover, they also responded positively to all 13 preventive measure questions with p-values for all being 0.000 except the one related to calling health authorities when exhibiting minor symptoms.

**Discussion and Conclusions:** This rationale of the research is corroborated by showing that those who followed the most preventive measures were also of the group that were able to manage stress. There is a strong association between managing stress and compliance with preventive measures which hasn’t been established before in literature. Those who follow preventive measures have more chances of being able to manage stress.

**Take-home Messages:** There is a psychological gain to following preventive measures in addition to the physical gain of not contracting the virus.
#SC23: SC - Students & the COVID-19 Pandemic

#SC23.4 The Impact of the COVID-19 Pandemic on the Well-being and Psychological Distress Level of Medical Students (8458)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:45 to 21:00

**AUTHOR(S):**  
Tudor Calinici, UMF Cluj-Napoca, Romania*  
Mirela Simona Calinici, Iuliu Hatieganu University of Medicine and Pharmacy, Romania

**ABSTRACT:**

**Background:** Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca is one of the biggest medical schools in Romania. The University was the first Romanian University which moved all the teaching activities online in March 2020 when the COVID-19 pandemic started. This measure affected directly all the students, changing their approach and point of view about many aspects, impacting the well-being status and psychological distress level.

**Summary of Work:** The PERMA Profiler questionnaire and DASS21 were applied to a group of 2nd semester medical students at three moments: before pandemic started (spring 2019), just after pandemic started (spring 2020) and after one year of pandemic (spring 2021) in order to evaluate the level of well-being and psychological distress. Beside this questionnaire, the students had to complete supplementary questions (demographic issues, social status, country of origin)

**Summary of Results:** Considering the level of well-being before COVID-19 pandemic as the standard level, the level of well-being slightly decreased, to all the evaluated categories of the students. On the other hand, the psychological distress level increased. However, after one year of pandemic, the followed parameters are expected to remain at a constant level, suggesting the ability of medical students to cope to this situation.

**Discussion and Conclusions:** Isolation, the lack of physical social interaction with other students and the necessity to stay at the localities of residence - most of the time with the parents, negatively impacted more the well-being and the psychological distress level. For the last group, the perspective of seeing the pandemic to the end and going back to normality could influence positively the results.

**Take-home Messages:** The COVID-19 pandemic had a big impact to all the world population, changing the way that a lot of things are perceived and forcing the medical schools and medical students to a large effort to continue their mission. Medical students seemed to cope to this situation, many of them seeing the full part of the glass and changing the unfavorable things in opportunities.
#SC23: SC - Students & the COVID-19 Pandemic 1

#SC23.5 Prevalence of anxiety and depression in medical students during COVID 19 pandemic. Establishing higher risk groups (9316)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 21:00 to 21:15

**AUTHOR(S):**  
Maria Ivonne Moreno Cerda, Universidad Diego Portales, Chile  
Francisco Villalon, Universidad Diego Portales, Chile  
Adrian Soto Amaro, Universidad Diego Portales, Chile  
Williams Gonzalez Venegas, Universidad Diego Portales, Chile

**ABSTRACT:**

**Background:** During COVID19 pandemic, mental health was significantly affected, reporting 14.6% to 48.3% of affected rates. The purpose of this research is to measure the prevalence of anxiety and depression symptoms in 498 medicine students of a chilean university, analyze posible risk conditions.

**Summary of Work:** A quantitative descriptive study was carried out during the months of May and June 2020. The sample consists in 498 students from 1st year to 7th year of medicine at the Diego Portales University, Chile, of which 44% were men, 54% were women, and 2% were non-binary gender. The validated instruments used were Patient Health Questionnaire - 9 (PHQ-9), which assesses symptoms of depression and General Anxiety Disorder 7 (GAD-7), which assesses anxiety disorder. Demographic data such as gender, age and grade are also evaluated. This study was approved by the Ethics Committee.

**Summary of Results:** The response rate was 73%. When evaluating the score of the PHQ-9 scale, it is found that 24% of the students present symptoms of mild depression, 27% of moderate depression, 23% of moderate-severe depression and 10% of severe depression. On the GAD-7 scale, it is found, that 37% present symptoms of mild anxiety, 26% of moderate anxiety, and 15% of severe anxiety. When differentiating by gender and course, a greater commitment is detected in women for moderate and severe depression, and in relation to the course it is evidenced that students in the first 2 years of the career present greater symptoms of depression and anxiety than their peers in higher grades.

**Discussion and Conclusions:** With the results obtained, it was possible to establish a difference in the impact on mental health on different groups. Minor courses and women were more affected. These results can guide the establishment of group and/or individual support strategies to work within these groups of risk.

**Take-home Messages:** It is possible through standardized and validated instruments to detect groups at higher risk of mental health compromise in medical students that are in need of an intervention thus avoiding consequences at both personal and academic level in medical students by doing so.
#SC23: SC - Students & the COVID-19 Pandemic 1

**SC23.6 Curricular, mindfulness, psychoeducational interventions for mental health and wellbeing in medical students during COVID-19 pandemic: Preliminary results (9330)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 21:15 to 21:30

**AUTHOR(S):**  
Francisco Villalón, Universidad Diego Portales, Chile*  
Ivonne Moreno, Universidad Diego Portales, Chile  
Williams González, Universidad Diego Portales, Chile  
Adrian Soto, Universidad Diego Portales, Chile

**ABSTRACT:**  
**Background:** COVID-19 pandemic globally affected mental health. It is fundamental in this context to know the magnitude of mental health compromise in medical students and to evaluate the impact of a brief intervention to promote wellness.  
**Summary of Work:** A quantitative descriptive and experimental study was carried to measure the impact on mental health in students during COVID19 pandemic, and to evaluate the effect of brief interventions. The sample consisted of the total of students (498) of the School of Medicine, Universidad Diego Portales, Chile, from May to December 2020. Validated Depression and Anxiety questionnaires were applied (PHQ9 and GAD7) at the beginning, post intervention and 3 months later. Academic flexibility, academic breaks and psychological support was offered to all groups. On the other hand, a randomized group was selected for Mindfulness Based Intervention (MBI) and psychoeducation-based intervention (PBI) for a total of 4 hours of intervention in 4 weeks.  
**Summary of Results:** Summary of results: The response rate was 73%. 32% of the students reported median-severe to severe symptoms of depression and 40% reported median to severe symptoms of anxiety. 120 students were randomized for interventions with a 76% attendance rate. The intervention in general lowered anxiety and depression symptoms on the first month (-2.03 p.000 and -1.81 p.000) and it was maintained through the 3rd month (-2.86 p.000 and -2.3 p.000). The MBI had a major impact on decreasing depression symptoms compared to the PBI at the 3rd month (-1.34 p.005). There were no differences between the interventions on the 1st month.  
**Discussion and Conclusions:** This study highlights the importance of interventions such as academic flexibility and breaks during a sanitary crisis, and validates the impact of brief interventions as MBI. Curricular interventions, academic breaks, brief mindfulness interventions are effective to decrease depression and anxiety symptoms, being established as specific support activities, relevant and feasible to be done and on medical students during the COVID 19 pandemic.  
**Take-home Messages:** It is necessary to integrate activities based on evidence in the curriculum in order to contribute to wellbeing and resilience.
**#W16: Workshop 16**

**#W16 Cognitive diagnostic modelling: A novel psychometric paradigm for healthcare professions education (9670)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:00 to 21:30

**PRESENTER(S):**  
Carlos Fernando Collares, Maastricht University, The Netherlands*

**ABSTRACT:**

**Background:** Cognitive diagnostic modelling (CDM) is an emerging psychometric paradigm that overcomes several limitations of current psychometric methods. CDM allows the measurement of multiple dimensions operationalised as categorical latent variables instead of a single continuous one. CDM allows more qualitative feedback over many specific cognitive attributes, while concurrently preventing the necessity of providing numerical scores as feedback and providing meaningful diagnostic feedback to learners, teachers and other institutional stakeholders.

**Who Should Attend:** Professionals involved in the assessment of under- and postgraduate students in the healthcare professions education.

**Structure of Workshop:** Participants are expected to read the preprint "A primer on cognitive diagnostic modelling in the healthcare professions education" before the workshop. The preprint is available at https://psyarxiv.com/jr4m6. The workshop starts with a short lecture and a team-based learning exercise. The workshop's practical part comprises instruction on how to run a CDM analysis on the Shiny graphic user interface of the R package GDINA. Participants will be stimulated to run their own analysis and present their results for plenary Q&A discussion.

**Intended Outcomes:** By the end of the workshop, participants are expected to be able to:
- understand the limitations of hegemonic psychometric approaches and their rationale;
- understand the differences between CDM and item response theory;
- understand the differences between the most commonly used models within the CDM approach;
- recognize the potential benefits of the application of CDM in the healthcare professions education;
- run a CDM analysis with a simulated dataset and interpret the results and
- run their own CDM analyses and interpret the results independently.

**Level:** This workshop is intended for educators with an intermediate to advanced level of experience with psychometrics. Prior experience with CDM is not required. Prior experience with IRT is desirable but not required. Participants are expected to have R and RStudio installed in their own devices and to have the ability to install the package GDINA before the start of the workshop. Participants with a more advanced level might want to arrange a binary response matrix and a binary Q-matrix for the workshop's practicals. Polytomous CDM analysis may be discussed but will not be part of the practical activities.
#W17: Workshop 17

#W17 Believing in Science: Cognitive Integration in Medical Education During a Pandemic and Beyond (7906)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
Drew Robinett, University of California, San Francisco School of Medicine, USA
Sam Brondfield, University of California, San Francisco School of Medicine, USA
Patricia Cornett, University of California, San Francisco School of Medicine, USA
Sara Clemons, University of California, San Francisco School of Medicine, USA
Heidi Kirsch, University of California, San Francisco School of Medicine, USA
Amy Yun, University of California, San Francisco School of Medicine, USA

ABSTRACT:
Background: Cognitive integration emphasizes the connections between foundational science and practical disease management that master clinicians implicitly consider every day. Observational and experimental studies justify the importance of cognitive integration in clinical reasoning. However, cognitive integration alone is a vaguely posed goal for core clinical clerkship curricula. Furthermore, busy rotation schedules, overloaded teachers/learners, incomplete buy-in to basic science relevance, and the recent transition to online formats necessitated by COVID-19 all pose barriers to promoting cognitive integration. We have spent three years designing and transforming a longitudinal course for the clinical clerkship year to promote cognitive integration through a variety of didactic formats. In this workshop, we will share lessons learned from our experience adapting this curriculum, including modifications during the COVID-19 pandemic.

Who Should Attend: Teachers, designers, and administrators of clinical curricula integrating foundational science

Structure of Workshop:
1. Introduction (5 mins)
2. Mini-presentation by Mr. Robinett and Dr. Brondfield: Defining terms and the rationale behind cognitive integration in medical school curricula (15 mins)
3. Small group activity: 1) Discuss current practices at participants’ own institutions around promoting cognitive integration during the core clerkship year, and/or 2) Brainstorm ideas for curricular interventions that could further promote cognitive integration (20 mins)
4. Mini-presentation by Dr. Kirsch and Ms. Yun: The UCSF experience with cognitive integration: successes, barriers, and COVID-19 (10 mins)
5. Small group activity: 1) Refine ideas for curricular interventions to promote cognitive integration during the core clerkship year, and/or 2) Discuss institution-specific barriers to implementation and strategies to address these barriers (20 mins)
6. Panel Q&A with all presenters and wrap-up (20 mins)

Participants will also be given handouts containing sample written cases that emphasize cognitive integration and links to sample portions of our online curricular materials.

Intended Outcomes:
1. Discuss the rationale supporting cognitive integration in medical school curricula.
2. Describe a practical approach to integrating foundational science into the core clerkship year.
3. Design and assess strategies for addressing barriers to foundational science learning during the core clerkship year.
4. Apply educational technology to support foundational science learning in a virtual format during the COVID-19 pandemic and beyond.

Level: Intermediate
#W18: Workshop 18


**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:00 to 21:30  

**PRESENTER(S):**  
Bonnie Miller, Vanderbilt University School of Medicine, USA  
Monica Ghidinelli, AO Foundation Education Institute, Switzerland  
Brian Allen, Vanderbilt University School of Medicine, USA  

**ABSTRACT:**  
**Background:** Microlearning (bite-size learning) offers an exciting opportunity to provide effective, relevant and enjoyable programs of continuing education, and targeted micro-learning courses have been shown to result in practice improvements. In this workshop we will explore what microlearning is, the purposes for which it can be used most appropriately, and how micro-learning courses can be designed to address practice gaps. We will include examples of strategies used in different countries. Using the American Board of Anesthesiologists MOCA Minute® as an example, this workshop will also demonstrate how micro-learning principles can be applied to micro-credentialing.

**Who Should Attend:**  
- Structure of Workshop:  
  - 10’ Introduction on microlearning and underlying learning principles  
  - 10’ Breakout group: Choose a topic for a micro-learning course  
  - 10’ Report out  
  - 10’ Breakout group: Identify the practice gap and draft learning objectives  
  - 10’ Report out  
  - 10’ Description of micro-quizzing for learning and credentialling (MOCA Minute®)  
  - 10’ Description of other micro-learning approaches for continuing education and credentialling  
  - 10’ Breakout: Determine the best micro-learning approach and discuss advantages and disadvantages  
  - 10’ Report out.

**Intended Outcomes:** At the end of this workshop, learners will be able to:  
1. Describe what microlearning is and explain the learning science behind it.  
2. Discuss the rationale, benefits, and limitations for using microlearning in surgical continuing education and in maintenance of certification.  
3. Design a microlearning activity that addresses learner and/or organizational needs and could meet accreditation requirements.  

**Level:** -
#W19: Workshop 19

#W19  Radical Candor: Caring personally while speaking directly (7690)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 20:00 to 21:30

**AUTHOR(S):**  
Debra Klamen, Southern Illinois University School of Medicine, USA  
Jerry Kruse, Southern Illinois University School of Medicine, USA

**ABSTRACT:**

**Background:** Faculty may be asked to lead, whether it be managing a curriculum committee, becoming an Associate Dean, or a Department Chair. Often, faculty are not prepared for these roles, but rather, thrown into them based on previous performance in other duties. In the social culture of political correctness and if you don't have anything to say, don't say anything, it is all too often the case that leaders do not give direct feedback, make smart decisions, or lead the way forward that is needed. Indeed, when one becomes a manager, it is one's job and obligation to be able to do so. In the co-presenters over 20 years of experience in these roles, it is apparent that while leaders do not often have these skills, they can be learned. This workshop will endeavor to begin the process of training in these skills.

**Who Should Attend:** Faculty who are interested in leadership opportunities, or who have them now but would like their skills improved. Students and residents in future leadership positions could also benefit from this workshop.

**Structure of Workshop:** Introduction of topic and speakers - 5 minutes  
Powerpoints of critical tips for each of the four topics listed below under "intended outcomes" - 9 minutes/topic x 4 topics = 36 minutes  
Opportunities to discuss and practice the skills introduced immediately after each topic is presented - (using role play, large and small group discussion, and demonstrations) - 10 minutes/topic x 4 topics = 40 minutes (This section will be expanded if we are given a 120 minute time slot)  
Large group discussion and wrap-up - 9 minutes

**Intended Outcomes:** By the end of this workshop, participants will be able to:
1) understand the concept of radical candor and use it to build relationships and trust at work  
2) create a culture of open communication  
3) begin to give encouraging praise as well as constructive criticism  
4) use at least one technique to help the team avoid burnout and boredom

**Level:** All leaders (past/present/future) are encouraged to attend
#W20: Workshop 20

#W20 Understanding different approaches to improve Postgraduate Medical Education (PGME) Learning Environments (9404)

Date of Presentation: 29 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
Juliana Sá, Faculty of Health Sciences, University of Beira Interior, Portugal
Gustavo Galata Romão, University of Ribeirão Preto, Brazil
Pia Strand, Lund University Faculty of Medicine, Centre for Teaching and Learning, Sweden
Arnaldo Riquelme, Pontificia Universidad Católica de Chile, Chile
Sheyla Ribeiro Rocha, Federal University of São Carlos, Brazil

ABSTRACT:

**Background:** A healthy learning environment is a determinant of the well-being of residents in training and associated with effective learning and better preparedness for practice. In consequence, healthy PGME learning environments may positively influence patient safety and the quality of healthcare. The content, delivery and learning climates of PGME programs vary across countries and regions around the globe. In this workshop participants will share and map different understandings of PGME learning environments. Furthermore, participants will elaborate on how to involve and stimulate different stakeholders in creating a quality culture and long-term approaches to improving the learning environment.

**Who Should Attend:** Educators, trainees, managers and others with a special interest in PGME learning environments.

**Structure of Workshop:**
1) Opening Session (Large Group – 5 min)
2) Inventory - participants interviewing each other in groups of three (20 min): What promotes or hamper learning in your PG clinical settings? How do you go about improving the learning environment? What are the challenges you face?
3) Small group session followed by plenary session: Mapping and visualization of commonalities and differences (20 + 20 min).
4) Final Presentation: A quality culture approach
   4.1 Assessing educational environments (Large Group – 10min)
   4.2 Stakeholders’ ownership and meaningful involvement in continuous improvement of PGME learning environments. (Large Group – 10min)
5) Closing Session (Large Group – 5 min)

**Intended Outcomes:**
- Insight into varying understandings of a healthy PGME learning environment.
- Discussions on how to address the challenges of improving PGME learning environments.
- Ideas on how to stimulate stakeholders to engage in the surfacing of hidden curriculum and power-structures that impede improvements.

**Level:** Basic to intermediate
#W21: Workshop 21

**#W21 Virtual Role-Play Simulation Workshop as a Tool to Improve Debriefing in the Emergency Department (8275)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 22:00 to 23:30

**PRESENTER(S):**  
Priyank Bhatnagar, University of Toronto, Canada  
Alia Dharamsi, University Health Network, Canada

**ABSTRACT:**  
**Background:** Team debriefing after critical events in acute care settings has numerous benefits, including process improvement, evaluation of care provision and improving team member wellness. They are a method of continued learning in teams. However, surveys of care providers have identified that less than 25% of resuscitations are followed by debriefs. This creates a significant missed opportunity for growth and reflection. One identified barrier to debriefing has been a lack of formal training for healthcare workers in debriefing skills. We have thus developed a workshop, intended as a continued professional development tool, for healthcare workers to learn and practice debriefing skills. Based on the current challenges with gathering in-person, our workshop has been adapted for delivery both in-person and virtually over video sharing platforms. Our goal is to positively impact the frequency of debriefs in clinical settings, and augment provider comfort with debriefing.

**Who Should Attend:** This workshop is intended for providers in acute care settings such as the emergency department and intensive care. Attendees may be physicians, nurses, respiratory therapists, social workers or other allied health members.

**Structure of Workshop:** The workshop is focused on using simulation and case-based practice to build debriefing skills. The session includes introduction to a quick, easy-to-implement format of debriefing called “Hot Debrief”. Attendees are divided into groups led by a facilitator. Each group is given prepared role-play scenarios where attendees can choose to lead or participate in a simulated debrief following a critical incident. Within groups, attendees will reflect on the debriefing, use of the debrief format and evaluate ways to improve leadership skills. Attendees are encouraged to ask questions throughout the session as well as at the end as a large group. Resources, handouts and practical tips for implementing structured clinical debriefs in one’s institution will also be provided.

**Intended Outcomes:**  
- To foster understanding and comfort with debriefing  
- To develop debriefing skills with simulation and case-based learning  
- To increase uptake of clinical debriefing in acute care settings

**Level:** Introductory
#W22: Workshop 22

#W22  Let’s Play! Introducing Gamification into Medical Curricula (9555)

Date of Presentation: 29 August 2021
Time of Presentation: 22:00 to 23:30

PRESENTER(S):
Aakanksha Khanna, University at Buffalo, USA
Alysia Kwiatkowski, University at Buffalo, USA

ABSTRACT:
Background: Playing a game creates a dynamic educational environment that enhances retention of knowledge, encourages team building, and improves communication. It has been shown that incorporating opportunities for peer-group learning allows for the development of leadership skills, empathy and collaboration through real-life practice and application. This workshop will provide the basis for establishing a gamification curriculum for medical education as well as practical tips for modification to the virtual environment.

Who Should Attend: Educational leaders in undergraduate and graduate medical education who work in curricular development.

Structure of Workshop:
1. Mini-Jeopardy: Introduction to gamification theory with a brief review of relevant literature.
2. Exercise 1: Participants work in pairs to brainstorm educational adaptation of either a new or existing game. This will be shared with the larger group.
3. Didactic 1: Review existing gaming models (escape room, board game model, etc) and provide instructions specifically on educational escape rooms.
4. Exercise 2: Small groups tasked with designing an educational escape room flow diagram.
5. Didactic 2: Review strategies to create sessions that are of varied difficulty levels, applicable to different learner levels, and foster high engagement.
6. Didactic 3: Discussion of available platforms, required resources, and other practical concerns.
7. Exercise 3: Participants to identify an educational game of their choice, resources needed, targeted learned level, and plan for implantation at their institution. Volunteers to share.

Participants will be provided with written guides on the content above.

Intended Outcomes: After participating in the workshop, attendees will be able to:
1. Explain the concept of gamification and how its use can be beneficial in medical education.
2. Discuss ways to create and implement medically based games using card/board games, Jeopardy ©, Pictionary © and Escape Rooms as examples.
3. Tailor game creation to learner level and resource availability.
4. Summarize methods to transition gamification to the virtual setting.
5. Incorporate games into existing curricula at their home institutions.

Level: Intermediate/Advanced
#W23: Workshop 23

**#W23 Exploring possibilities: Can workplace-based assessments be done in a virtual environment? (8043)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 22:00 to 23:30

**PRESENTER(S):**  
Machelle Linsenmeyer, West Virginia School of Osteopathic Medicine, USA  
Maryellen Gusic, University of Virginia School of Medicine, USA

**ABSTRACT:**

**Background:** The COVID-19 pandemic has presented both practical and logistical barriers for the use of workplace-based assessments including assessments of Entrustable Professional Activities (EPAs). Educators have had to consider new ways to assess clinical performance in a virtual environment. However, there are pros and cons of assessing tasks virtually that typically involve hands-on patient care. In this interactive workshop, participants will engage with facilitators to co-create best practices for incorporating virtual assessments in decisions about learners readiness to perform clinical tasks with a specified level of supervision.

**Who Should Attend:** Educators and educational administrative leaders interested in EPAs, competency-based medical education and workplace-based assessment.

**Structure of Workshop:**
- Introductions- 5 min
- Facilitated discussion about participants’ experiences in implementing workplace-based assessments/ EPA assessments during virtual experiences- 15 min
- In large group brainstorming, the opportunities and limitations of assessments completed in virtual environment will be listed-10 min
- Thought provoking questions will be used to prime conversation in small groups about: 1) resources required to involve learners in virtual clinical experiences and how data collected from virtual assessments should be reported 2) risks related to decision making using data from assessments completed during virtual encounters and steps to mitigate risk 3) how and if information from virtual assessments should be used in ad hoc and summative entrustment decisions. Each small group will focus on one set of questions. -20 min Summaries will be reported to the larger group-10 min
- Participants will use the report out and their experiences to create a list of “best practices” for virtual assessments. 10 min
- Each participant will identify 1-3 steps they will take to apply a best practice at their home institution
- Questions/Wrap-Up- 15 min

**Intended Outcomes:** Participants will leave with:
1. Insights regarding the use of virtual assessments to measure clinical performance
2. An understanding of the importance of ensuring that assessments are “fit for purpose”
3. Strategies to incorporate EPA assessments within the workflow of virtual clinical encounters
4. Ideas about how preceptors can use virtual assessment data in ad hoc supervision decisions
5. Plans for the use of virtual assessments of clinical tasks at their institutions.

**Level:** Introductory
**#W24: Workshop 24**

**#W24  Enhancing and engaging supervisory relationships online (9743)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 22:00 to 23:30

**PRESENTER(S):**  
Linda Jones, CME University of Dundee, UK  
Leo Anthony Celi, Laboratory for Computational Physiology, Harvard-MIT Health Sciences and Technology, USA  
Abdulhadi Alagha, MSk Lab, Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, UK  
Thillainathan Sathaananthan, Centre for Medical Education, University of Dundee, UK

**ABSTRACT:**

**Background:** Drawing on literature combined with our own experiences in undergraduate, masters and PhD supervision/mentoring we aim in this session to encourage discussion and reflection upon pedagogic relationships, developed and sustained in online or blended learning environments. We want to encourage discourses, strategies and models for building successful relationships including trust-building, communication for optimising online learning environments. Arguably, the pandemic has sparked a rapid educational revolution requiring transfer of skills appropriate for virtual platforms. Now often the roles, responsibilities and techniques previously fairly well defined for face-to-face encounters may feel less relevant. We will suggest view that virtual supervision and mentoring can be highly successful and effective and need not be a poor cousin to, more familiar, face-to-face supervisory encounters. Distance-learning dates back to as early as the 18th century, yet many supervisors have had little opportunity to reflect how their face-to-face pedagogical skills can be transferred online or for faculty development strategies to adapt and include additional knowledge skills and attitudes for increasingly technologically defined supervisory spaces.

**Who Should Attend:** Those with experience of, or becoming involved in online supervision of postgraduate students (Master’s, PhD, MPhil or CPD programmes).

Anyone who fears they are less equipped for online supervision or believe it will necessarily be less effective or wants to share more positive experiences of remote supervision or mentoring.

**Structure of Workshop:** An undergraduate current medical, PhD and masters student and two experienced supervisor/mentors, extensively involved in online international education (from Dundee and MIT) will briefly share their evidence-based perspectives and experiences. The intention is to optimise discussion in small groups and then debrief. The later stages of the workshop will bring together the suggestions from presenters and keypoints from participants to identify principles and practices.

**Intended Outcomes:** by the end of the workshop participants will  
* become aware of some of the medical education discourses relevant for enhancing online supervisory relationships.  
* shared and reflected on their experiences and ideas for enhancing supervisory relationships online  
*participated in developing a preliminary set of principles/guidelines for developing and sustaining effective and efficient online supervision processes.

**Level:** all levels of expertise welcome
#S11: Symposium 11

#S11  Innovative faculty development in Bioethics teaching: A UNESCO Chair in Bioethics Methodology Symposium

Date of Presentation: 30 August 2021
Time of Presentation: 07:00 to 08:30

PRESENTER(S):
Russell D’Souza, Director Department of Education UNESCO Chair in Bioethics University of Haifa
Mary Mathew, UNESCO Chair in Bioethics University of Haifa, India
Daniella Keidar University of Haifa, Israel
Madalena Patricio, Lisbon School of Medicine, Universidade de Lisboa, Portugal

Summary: The UNESCO Chair in Bioethics was charged with introducing a modern curriculum and reformed evidence-based teaching methodology for Bioethics teaching in medical schools all over the world. The three domains of innovation included:

- Vertical integration of the bioethics principles in the various medical and health science areas
- Innovative interactive teaching methodology included the use of cinema, participatory theatre and visual methods, role-play, debates, tableaux, art, and case-based learning
- Outcome-based approach

The new curriculum includes a sixteen-week weekly interactive webinar course on how to teach bioethics followed by a three day face-to-face interactive program.

Who should participate? The symposium will be of interest to all stakeholders, namely under- and postgraduate teachers as well as administrators.
Background: UK students from Black and Minority Ethnic (BME) backgrounds have been reported to underperform academically compared with their white counterparts. This underperformance, known as the differential attainment gap, has been noted throughout Higher Education, including Medicine. Despite wide documentation of the differential attainment gap, the causes are unclear and complex. Morrison et al (2019) identified 3 main themes as barriers to performance for BME graduate-entry medical students. However, the findings of our initial study were based on a small sample in a single institution. This study aimed to explore UK graduate-entry medical students experiences of undergraduate training in the context of academic underperformance of medical students from BME backgrounds.

Summary of Work: A mixed methods approach was undertaken to gain an understanding of medical students experiences as well as their perceived barriers and facilitators to learning and performance. Data were gathered in an online survey and focus groups using a semi-structured interview schedule to capture a wide range of experiences. Thematic analysis was applied to the qualitative data.

Summary of Results: BME graduate-entry students reported a range of facilitators that improved their student experiences. However, they also reported facing numerous barriers that impeded their learning and performance. The relationships with staff and clinicians, though also identified as facilitators to learning, often hindered progress, as many students felt that a lack of representation and lack of understanding of the challenges they faced impacted their experience. BME students reported experiencing and witnessing various types of racism, including overt racism, racial discrimination and microaggressions.

Discussion and Conclusions: BME graduate-entry students can face a range of difficulties throughout their undergraduate medical training that may impede on learning and performance. Future interventions should focus on improving peer relationships and student-staff relationships; adequate training in anti-racism, culture and diversity for both students and staff; and institutional changes to diversify student and staff populations may help.

Take-home Messages: The causes of differential attainment gap is complex and multi-factorial. BME graduate-entry students experiences impact their academic learning and performance. Adequate university student support is paramount and should focus on gaining understanding on issues faced by the BME communities.
**SC24: SC - Diversity**

**SC24.2  Students’ Experiences of Racism in the Clinical and Educational Environment** (8852)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:15 to 07:30

**AUTHOR(S):**  
Mythiri Sutharson, Clinical School of Medicine, University of Cambridge, UK*  
Esmee Dohle, Clinical School of Medicine, University of Cambridge, UK  
Ana-Maria Lopez, Clinical School of Medicine, University of Cambridge, UK  
Michelle Arora, Consultant Paediatrician, Addenbrookes Hospital, UK

**ABSTRACT:**  
**Background:** The recent Black Lives Matter movement has increased awareness of racism experienced by students from Black, Asian and Minority Ethnic groups (BAME), leading to development of working groups and overhaul of curricula in many UK medical schools. However, attitudes towards BAME groups have changed over the decades and the racism experienced by medical students today has not been fully explored. Only a handful of mostly quantitative studies examine racism experienced by students but they are primarily international. We aimed to gain a deeper understanding of students experiences of racism in the clinical and educational setting.  
**Summary of Work:** We conducted an anonymous survey to gather qualitative data on students experiences and observations of racism towards themselves, patients and other students. The survey was distributed via social media platforms and a thematic analysis was performed on the responses.  
**Summary of Results:** We received 158 responses, of which 57.4% students self-identified as BAME. 28.5% students had witnessed racial bias towards patients and 58.2% had experienced or witnessed racism. Students described hostility from patients, including explicit unwillingness to speak to or be examined by BAME students, being subjected to racist views from patients and observing derogatory attitudes towards BAME clinicians. Students also witnessed racist behaviours from clinicians towards patients, racially insensitive humour and racism in the educational setting, such as lack of diversity in teaching materials. Continuous exposure to racism significantly impacted on students sense of belonging and mental health. Furthermore, many did not know how to respond in these situations and felt they could not report them.  
**Discussion and Conclusions:** Educational and clinical organisations need to understand the extent of racist behaviours students are subjected to. While some may be addressed through curriculum redevelopment and implicit bias training, these vulnerable students will continue to be exposed to racial hostility during placements. We need to consider how to equip students to respond to these situations and there needs to be clear guidance on reporting these encounters.  
**Take-home Messages:** Understanding students experiences of racism in all areas of student life can help educational and clinical organisations address this issue. Support is needed if we are to ensure BAME students can achieve their highest potential.
#SC24: SC - Diversity

#SC24.3 Fighting against discrimination as future doctors (9564)

Date of Presentation: 30 August 2021
Time of Presentation: 07:30 to 07:45

AUTHOR(S):
Natasha Lalenya Barbour-Murray, European Medical Students' Association (EMSA), UK*
Joanna Gromadzka, University of Warsaw, Poland
Irem Aktar, Istanbul University Istanbul Faculty of Medicine, Turkey
Philippa Lantwin, European Medical Students Association (EMSA), Germany

ABSTRACT:

Background: Underestimating the requirement for adequate teaching on discrimination overlooks indirect discrimination incidents against patients particularly those with protected characteristics such as sex, race, and ethnicity. This may result in misdiagnosis or delayed diagnosis. An example being, Dermatology textbooks, which underpin our clinical knowledge yet the unanimous focus on skin presentation for white people ignores the various presentations that truly occur.

Summary of Work: The European Medical Students Association (EMSA) highlights issues for vulnerable populations; mainly access to healthcare and analysis of discrimination faced while accessing healthcare services. Social media is utilised to deploy campaigns with the aim of high engagement. EMSA represents medical students views through Policy Papers, the purpose being to raise awareness on various matters. We believe that health and universal access to health is a human right often violated for vulnerable groups. Furthermore, EMSA has created media statements that address current political issues that directly relate to health, an example being the recent statement regarding the treatment of refugees in the Moira camp.

Summary of Results: Through our work, we have been able to reach numerous people; raising awareness among medical students on the problems faced while accessing healthcare services for vulnerable populations. We included many EMSA members in preparing social media campaigns such as IDAHOT, Policy Papers on Healthcare Access and built a task force.

Discussion and Conclusions: Regardless of the characteristics of a patient; equal treatment should always be provided, then delivered in a respectful and compassionate manner. Medical education should ensure that students are suitably equipped, on the multifaceted nature of patients and their care. This could be achieved through interdisciplinary teaching; which increases awareness of biases, and discrimination that affects the therapeutic process. Healthcare personnel should continuously be trained in inclusive provider-patient communication, both in a verbal and non-verbal way, highlighting the importance of creating a safe space and environment, in which patients will not fear judgment.

Take-home Messages: Certain groups of patients from vulnerable populations need an approach enabling medical practitioners to make a correct diagnosis. The medical curriculum should include interdisciplinary lessons on the multifaceted nature of patients in order to provide them with the best care possible.
#SC24: SC - Diversity

#SC24.4 Cultural diversity models reviewed: Theoretical assumptions and practical implications (8190)

Date of Presentation: 30 August 2021
Time of Presentation: 07:45 to 08:00

AUTHOR(S):
Albertine Zanting, Maastricht University, The Netherlands*
J. Frambach, Maastricht University, The Netherlands
A. Meershoek, Maastricht University, The Netherlands
A. Krumeich, Maastricht University, The Netherlands

ABSTRACT:
Background: Educating students how to interact with diverse patients is commonly based on models or frameworks of which the practical implementation seems challenging. These frameworks, such as cultural consciousness and intercultural communication, refer to culture, without explicitly explaining the concept. However, research showed that the used notion of culture matters greatly for people concerned, and that frameworks incorporating a dynamic notion of culture seem more appropriate than those using a static notion. Yet, these dynamic conceptualizations are not often operationalized. Our study therefore investigated what kind of cultural models are generally used in medical education, whether these are dynamic models, and how culture is operationalized in them. Finally, we explored practical implications of this operationalization, aimed at enhancing cultural diversity education.

Summary of Work: We performed a critical conceptual analysis of medical education literature. We selected articles from top seven high impact journals in health professions education describing cultural diversity models. Via open coding, we looked for references to differences and culture, to implementation practices, and to model objectives.

Summary of Results: Our preliminary findings show that both dynamic and static models are used in health professions education, mainly in (communication) skills training. In static models, culture is implicitly presented as others; specific groups who do not belong to the normal patient population, whose treatment requires specific cultural knowledge and skills. In dynamic models, patients’ background is described more broadly than merely culture or ethnicity, and models focus more on asking questions than learning facts.

Discussion and Conclusions: Our results suggest that static models risk stereotyping given their fixed nature of cultural characteristics. Dynamic models attempt to see diversity as a starting point without positioning patients into fixed categories, inviting health professionals to investigate the relevance of diversity for each individual patient. However, the extent to which these models, when operationalized, succeed to avoid stereotyping differs. The results urge us to reflect on possibilities to recognize relevant differences without othering, and to take these efforts beyond isolated skills training.

Take-home Messages: Cultural models used in health professions education increasingly employ dynamic notions, but need further development to avoid the negative impacts of othering in healthcare practice.
#SC24: SC - Diversity

#SC24.5 Queering the Medical Curriculum: How Medical Educators can create a safe space to challenge preconceptions and discuss health inequalities faced by LGBT individuals (9009)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 08:00 to 08:15

**AUTHOR(S):**  
Hamish Patel, The Hillingdon Hospitals NHS Foundation Trust, UK*  
Ealish Swift, Northwick Park Hospital, London North West University Healthcare NHS Trust, UK  
Samuel Gregson, 56 Dean Street, Chelsea and Westminster Hospital NHS Foundation Trust, UK  
Orry Swift, The University of Southampton, UK

**ABSTRACT:**

**Background:** Lesbian, Gay, Bisexual, and Transgender (LGBT) identities have been increasingly accepted in the last decade. However, LGBT people still face widespread, multi-sector discrimination. Health inequalities experienced by LGBT people include disproportionately higher incidences of mental health problems, sexually transmitted infections, and later presentations of cancer - in part due to clinicians lacking knowledge to adequately address this group's health needs. Moreover, LGBT individuals also face discrimination by healthcare staff. Subsequently, one in seven LGBT individuals avoid seeking healthcare.

**Summary of Work:** Despite this, medical schools universally neglect or limit LGBT education in the curriculum. We created a workshop aiming to enhance communication skills for medical students encountering LGBT patients and promote awareness of health inequality. Fifth Year medical students (7 in person, and 3 remotely via a secure video conferencing platform) from Imperial College London attended a pilot. This was facilitated by members of the LGBT community, including one expert patient and a General Practitioner, both of whom identify as Transgender Women. Primary Care consultations were modelled, opening discussions on sexuality, gender, and discrimination. Students were encouraged to ask questions and clarify preconceptions in a non-judgemental environment.

**Summary of Results:** Feedback was collected pre- and post-workshop using a questionnaire including Likert segments (scored 1-5, Strongly Disagree to Strongly Agree) and open questions for qualitative feedback. Verbal feedback was also taken at the end of the workshop. The Likert rating statements were modelled as parametric data and analysed using a Paired t-Test.

**Discussion and Conclusions:** Feedback was overwhelmingly positive. Having never had LGBT-specific teaching, most were unaware of the health inequalities faced by LGBT patients and had not previously considered how to conduct an LGBT-inclusive consultation. Self-rated confidence in clarifying unfamiliar terms (related to sexuality and gender) improved by an average of 2.1 on our 5-point Likert scale (p=0.0017), and confidence in taking an LGBT-inclusive social history improved by 1.7 (p=0.0077). There was unanimous recognition of the need to include LGBT training in future for themselves and their colleagues.

**Take-home Messages:** Our workshop fills an important gap in the curriculum. We aim to expand this workshop to apply to undergraduate and postgraduate education, encouraging the development of LGBT-inclusive clinicians.
#SC24: SC - Diversity

#SC24.6 Pride in Safe Learning: Exploring factors influencing educational safety in sexual and gender minority health learning (8205)

Date of Presentation: 30 August 2021
Time of Presentation: 08:15 to 08:30

AUTHOR(S):
Christina Grove, University of Otago, New Zealand*
Rebecca Grainger, University of Otago, New Zealand
Tim Wilkinson, University of Otago, New Zealand

ABSTRACT:
Background: The sexual and gender minority (SGM) population experiences inequitably poor health outcomes, partly resulting from negative health-care interactions. To competently care for diverse populations medical students must learn appropriate knowledge, attitudes, and skills. Students are more likely to undergo transformative learning if they feel safe to wholeheartedly engage with content and take interpersonal risks, a phenomenon captured in the concept of educational safety. The aim of this study was to develop an understanding of factors influencing educational safety as applied to students learning about SGM health.

Summary of Work: A social constructivist oriented case-study triangulated data from 88 online case reports and 11 semi-structured interviews of 4th-6th year medical students. Abductive thematic analysis was used to identify factors influencing educational safety during learning.

Summary of Results: Students described a range of learning experiences in SGM health occurring in different pedagogical contexts and stages of medical school. The factors identified as influencing educational safety were grouped into four key sources; the student, the facilitator, peers, and cultural context. Factors had a cumulative impact and the relative impact of a single factor differed between students, pedagogical contexts, and was changeable for a single student over time.

Discussion and Conclusions: Responses revealed variability in students baseline safety dependent on their background, beliefs, and context. Some students felt intrinsically unsafe when engaging with SGM health learning due to the personal relevance of content or concern around projection of an incompetent or intolerant image. Lack of educational safety could be mitigated, and frequently was, by the actions and attitude of the facilitator and by the students relationships and trust in their peers. Educational safety was also influenced in a broader sense by the cultural context of the learning experience including the institutional culture and the culture of medicine.

Take-home Messages: Our findings have identified modifiable factors related to facilitator and peer actions that do not require significant curriculum modification. Our pragmatic suggestions for practice improvements includes utilising small-group tutorials, signposting expected competence, and involving facilitators with lived experiences. Educational safety provides a useful lens for understanding factors influencing learning in potentially sensitive topic areas such as SGM health, and provides mechanisms for promoting student learning.
To See Is to Understand: Build Your Own Low-Cost Simulators and Medical Devices (9210)

Date of Session: 30 August 2021  
Time of Session: 07:00 to 08:30

AUTHOR(S):  
Malgorzata Kaminska, University of Northern British Columbia, Northern Medical Program, Canada*  
Richard Franke, FrankeTech, Canada

ABSTRACT:  
Background: Simulation in medical education has shown to increase both knowledge and skill levels of learners. Yet, many institutions and medical educators struggle with the high cost of funding simulation programs. Additionally, during the COVID-19 pandemic, many simulation centres were closed to learners, further limiting access to valuable hands-on experience.

Summary of Work: Over the years, we have produced a variety of low-cost but well-received simulators. Some are our own inventions, while others are based on publicly available simulators and medical devices originally developed by others in the medical community that we have improved upon or discovered tweaks that make the production of these items virtually foolproof.

Summary of Results: In this ePoster presentation, we will demonstrate step-by-step how to produce and assemble many different types of low-cost simulators that allow students to practice doing paps, inserting central lines under ultrasonography, removing toenails, palpating swollen joints using the proper technique, mastering common minor surgery techniques, as well as to visualize pathologies in knee and shoulder models, understand how eye movements are controlled by the various muscles, and how to 3D print your own stethoscope and otoscope, to name a few. The 3D printed stethoscopes were used in a Canadian rural hospital during the COVID-19 pandemic.

Discussion and Conclusions: These simulators and devices are easily available to medical teachers. They are built using pool foam noodles, pipe cleaners, tennis balls, sausages, and similarly low-cost, everyday items. A few of these devices require a 3D-printer which can usually be found in a colleagues home, at the university or a local business. The stumbling block for most seems to be the lack of detailed instructions needed to assemble these simulators. We remove this obstacle by featuring easy to follow videos and step-by-step pictures of the production and assembly process, pointing out common mistakes or tricks of the trade. All these devices are inexpensive enough that learners can easily take one home to practice or acquire new skills.

Take-home Messages: Everyone can build low-cost simulators and medical devices when step-by-step visual instructions are provided, and all the tricky parts have already been worked out!
#EP6: ePoster - Simulation

#EP6.2 Take-off for in-situ simulation: A unique collaboration of airline pilots and medical education in the Covid-19 pandemic (8997)

Date of Session: 30 August 2021
Time of Session: 07:00 to 08:30

AUTHOR(S):
Friederike Baldeweg, Whittington Hospital NHS Trust, UK*
Robert Lloyd, Whittington Hospital NHS Trust, UK
Alex Jolly, Wing Factors, UK
Dave Fielding, Wing Factors, UK
Mumtaz Mooncey, Whittington Hospital NHS Trust, UK
Dorothy Ip, Whittington Hospital NHS Trust, UK

ABSTRACT:
Background: Airline pilots observed in-situ simulation and provided Human Factors (HF) feedback in our hospital during the Covid-19 pandemic. The pilots were originally part of a successful initiative across several NHS trusts, supporting staff by providing First Class Lounges; a space for decompression from traumatic working environments. The potential for collaboration with the pilots for in-situ simulation was identified, as the aviation industry's emphasis on HF training is highly regarded in medical education and patient safety forums. (1) This was cultivated in our hospital through weekly multi-speciality in-situ simulations.

Summary of Work: Between July and October 2020, we ran 6 acute medicine in-situ simulations observed by furloughed airline pilots. For each scenario a written pre-brief was designed for faculty members outlining the key learning objectives and interventions expected in the scenario. The debrief was then split into human factors (airline pilots) and technical feedback (acute medical consultant or trainee). We obtained written feedback from participants which we collated.

Summary of Results: Scenarios covered common medical emergencies including cardiorespiratory arrest, severe Covid-19 pneumonia, and upper gastrointestinal bleed. The human factors and technical debriefs were delivered verbally immediately following the simulation, and in written format to be disseminated to participants afterwards. As a faculty, latent safety threats identified through these in-situ simulations were highlighted and communicated to the Patient Safety Lead for the hospital.

Discussion and Conclusions: Redeployment to acute specialties and clinical demand relating to Covid-19 has interrupted training for many doctors and allied healthcare professionals. We sought to provide in-situ simulation to incorporate the airline pilots highly specialised skillset and provide learning opportunities for trainees. 100% of participants agreed they would like more in-situ simulation with specific aviation-derived HF feedback.

Take-home Messages: This unique collaboration between furloughed airline pilots and multidisciplinary healthcare professionals created a positive and stimulating educational environment, with novel focus on HF feedback through pilot expertise. The success of this project has provided a foundation for expanding multi-speciality airline pilot in-situ simulation to other hospital trusts. Reference (1) Kapur N, Parand A, Soukup T, Reader T, Sevdalis N. Aviation and healthcare: a comparative review with implications for patient safety. Journal of the Royal Society of Medicine. 2016.
ABSTRACT:

Background: Due to COVID-19 pandemic, the delivery of medical education has transitioned mainly to virtual platforms. Simulation-based learning is useful in developing clinicians knowledge and skills with no risk of harm to patients. Simulation traditionally occurs face-to-face, but its principles can be adapted for remote learning. This study aimed to explore whether Simulation via Instant Messaging - Birmingham Advance (SIMBA) was an effective virtual medical education model during COVID-19.

Summary of Work: Nine SIMBA sessions were conducted during May-December 2020 on adrenal pathology, thyroid pathology, pituitary pathology, inflammatory bowel disease, acute medicine, diabetes and liver pathology. In each session, moderators (medical students and junior doctors) delivered simulated cases over WhatsApp, using standardised transcripts based on real-life anonymised clinical data. Participants assessed each patient and formulated diagnoses and management plans. Cases were discussed via interactive Zoom discussions with field experts. Self-reported confidence towards clinical scenarios was assessed using Likert scales pre- and post-sessions, and compared using Wilcoxon Signed Rank tests. Acceptance and relevance of the simulated cases by participants were analysed and described in frequencies and proportions.

Summary of Results: 305 participants completed pre- and post-SIMBA evaluation forms, where 36.4% (n=111) were outside the UK. Participants self-reported confidence to approach simulated cases significantly improved overall (p<0.001) and in all individual specialties (p<0.05). 93.4% strongly agreed/agreed topics were applicable to their clinical practice. 87.5% and 92.5% strongly agreed/agreed SIMBA sessions suited their learning style and the sessions were engaging, respectively. 93.8% and 92.1% strongly agreed/agreed content was impactful at personal and professional levels, respectively. Participants felt SIMBA improved competence in: patient care (55.1%), professionalism (31.8%), management (86.2%), systems-based practice (51.1%), practice-based learning (69.8%), communication skills (26.6%).

Discussion and Conclusions: SIMBA is an effective virtual teaching model improving clinicians confidence in managing various conditions. SIMBA is accessible internationally. Further work is warranted to explore whether increased confidence levels translated to better real-life performance and to compare with face-to-face simulation or other teaching styles.

Take-home Messages: SIMBA is an appropriate and inexpensive replacement for face-to-face teaching during COVID-19 pandemic. It shows promise as an internationally accessible adjunct, or alternative, to traditional face-to-face learning.
ABSTRACT:
Background: Bedside teaching is a highly effective approach to teach clinical and professional skills to medical students. The COVID-19 pandemic has at times prevented students from attending clinical areas, limiting vital learning opportunities for them. Using the cardiopulmonary simulator Harvey®, we ran a virtual bedside teaching session for medical students on their cardiology placement.

Summary of Work: To mimic traditional bedside teaching, seven students from the University of Bristol were presented first with a case to take a history from, and then shown two videos of alternative examinations demonstrating best practice and omissions respectively. The history and examination pertained to aortic stenosis, a murmur which Harvey® could reproduce and which was audible on the video recordings. During the session, students took the history of the case from a faculty member using an online meeting platform, and then were asked to critique the two videos. Feedback was gathered both informally at the end of the session and formally using feedback forms.

Summary of Results: Feedback for the session was overwhelmingly positive. Qualitative feedback demonstrated high enthusiasm for the use of the videos, with students saying that comparing between the examination with omissions and the model examination was extremely educational, and helped develop [their] critical skills. Another student said that this was as good if not better than a normal bedside session. Overall, the students scored the session 9.75/10. 100% felt the session was relevant to their course and 100% said they would recommend the session to their peers.

Discussion and Conclusions: We demonstrate an innovative approach to maintaining quality clinical education during the COVID-19 pandemic. Students engaged their skills in both history taking and examination during the session, and felt that the learning during it was highly relevant to their training. Whilst face-to-face teaching is desirable, our experience shows that virtual bedside teaching can be seen by students as highly relevant and educational. As such, we are repeating this session for each student group rotating to cardiology.

Take-home Messages: Virtual bedside teaching sessions provide a feasible and safe alternative to face to face bedside sessions. Students experience of virtual clinical teaching is overwhelmingly positive.
#EP6: ePoster - Simulation

#EP6.5 Hospital at Night. A low fidelity simulation of on-call ward cover (9026)

Date of Session: 30 August 2021
Time of Session: 07:00 to 08:30

AUTHOR(S):
Benjamin Varghese, Nottingham University Hospitals NHS Trust, UK*
Kaveetha Kandiah, Nottingham University Hospitals NHS Trust, UK

ABSTRACT:
Background: Hospital at Night (H@N) is a simulated on-call experience designed to prepare final year medical students for ward cover on-call duties. This session is a low fidelity simulation run to help confront final year medical students concerns that come with impending on-call as a newly qualified junior doctor. The session was designed to develop skills in task prioritisation, communication and clinical reasoning. The design considered the limitations imposed by COVID-19 regulations.

Summary of Work: The simulation ran weekly, October to December 2020, with 6 students split into two 40 minute circuits running in parallel with 3 facilitators. The students assess patients in the form of case notes and form management plans whilst receiving interruptions from bleeps. Students were required to escalate and deliver handover over the phone to senior colleagues as appropriate. Each circuit ended with a debrief linked to the three domains. Participants completed a short self-assessment of their confidence, measured with a Likert scale. The focus of this self-assessment examined three domains: task prioritisation, clinical reasoning, and communication. These self-assessments are done pre-session, mid-session, and post-session.

Summary of Results: The self-assessment responses are analysed in three domains as above. With each domain, there has been an increase in participant confidence. In task prioritisation, there was a 27.34% increase. In clinical reasoning, there was a 20.76% increase. In communication, there was a 21.1% increase. Participants gave free prose feedback at the end about learning outcomes which encompass elements of good communication, effective prioritisation and management plans. This feedback highlights meeting the major aims of the simulation.

Discussion and Conclusions: Across all domains, there was a percentage increase in confidence by participants from pre-session to post-session self-assessments. This was achieved using low fidelity simulation. We propose that a debrief after each circuit contributed to increased confidence. This simulation appears to be an effective method of training to develop skills required for ward cover on-call.

Take-home Messages: Given the new COVID restrictions new methods of training are needed that minimise close contact with patients or actors. The use of low fidelity simulation may be a useful and less resource intense way to train non-technical skills vital as a junior doctor.
AUTHOR(S):
Aaliya Uddin, Basildon and Thurrock University Hospital, Mid and South Essex NHS Foundation Trust, UK*
Andrew Fraser, Basildon and Thurrock University Hospital, Mid and South Essex NHS Foundation Trust, UK
Akshay Vinoo, Basildon and Thurrock University Hospital, Mid and South Essex NHS Foundation Trust, UK
Murad Khan, Basildon and Thurrock University Hospital, Mid and South Essex NHS Foundation Trust, UK
Joseph Ebubedike, Basildon and Thurrock University Hospital, Mid and South Essex NHS Foundation Trust, UK
Sarah-Jane Walton, Basildon and Thurrock University Hospital, Mid and South Essex NHS Foundation Trust, UK

ABSTRACT:
Background: Virtual reality (VR) is a novel, high-fidelity innovation integrated increasingly in medical education and simulation. We assessed junior doctors perceptions of VR and conventional simulation for learning technical and non-technical skills. We also investigated the influence of individual learning styles on the predilections for a particular learning methodology.

Summary of Work: Eighty-six junior doctors at a District General Hospital attended VR simulation sessions followed by conventional simulation sessions over a six month period. Analogous, standardised clinical scenarios simulating management of acutely unwell patients were employed in both sessions. Each doctor completed an electronic Visual, Auditory, Reading/Writing, Kinaesthetic (VARK) learning preferences questionnaire to identify their learning styles. Additionally, a questionnaire, drawing on aspects of technical and non-technical skills of simulation was completed. It comprised of seven questions using rating scales to compare the two methods of simulation.

Summary of Results: The doctors perceptions revealed an overall preference for conventional simulation over VR simulation. Individual learning styles did not influence this preference of simulation. Some remarks suggested conventional simulation provides a platform to learn and practice clinical skills in a hands-on manner and is more representational of real clinical scenarios.

Discussion and Conclusions: Conventional simulation facilitates authentic learning and hands-on practice in a realistic environment with opportunities for examinations, procedures and developing interpersonal skills. VR simulation allows the delivery of complicated clinical scenarios accurately, providing a standardised learning experience. The resources required to facilitate VR in a COVID-19 friendly environment are lesser than conventional simulation. VR is more attractive to students, it is indeed immersive, but it remains to be seen if it is more engaging. Although innovative technology is increasingly being used in medical education, a presumption of it being more effective than traditional methods should be avoided.

Take-home Messages: • Despite the growing integration of virtual reality simulations into medical education, there is a lack of research comparing its effectiveness to the conventional methods of simulation. • Traditional hands-on learning method of simulation is still valued and cannot be replaced by VR. Rather, VR should be used in conjunction, as part of a blended learning approach to enhance the medical curriculum.
# EP6: ePoster - Simulation

**EP6.7 Paracentesis - not such a drain after all: Using PDSA methodology to develop a Paracentesis Training Programme for Junior Doctors (8810)**

**Date of Session:** 30 August 2021  
**Time of Session:** 07:00 to 08:30

**AUTHOR(S):**  
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**ABSTRACT:**  
**Background:** Sandwell Hospital runs an elective paracentesis service for chronic liver disease patients. This service relies on junior doctors to perform the procedure, however they may have received little prior training. Ascitic taps and paracentesis are core procedural skills, yet studies have shown only 25% of trainees are confident in performing all aspects of this procedure(1). Use of Plan-Do-Study-Act (PDSA) methodology has been shown to be an effective way to strengthen education(2), particularly in simulated scenarios(3). We therefore used PDSA methodology to create a simulated paracentesis training programme for junior doctors, with the aim of improving procedural confidence.

**Summary of Work:** Junior doctors were invited to take part in a paracentesis training programme and asked to complete an online survey ranking their confidence in completing different aspects of the procedure prior to attendance. Attendees then received teaching using carefully designed interventions to improve confidence across ten different components of the procedure. Following each educational session, the participants completed the survey again and statistical analysis was performed to identify which interventions led to improved confidence. The programme was then altered to address any unmet needs to enhance the learning experience. Interventions include a face-to-face simulation using a paracentesis model, an equipment checklist, electronic proforma and PowerPoint Presentation.

**Summary of Results:** Three PDSA cycles have been completed, with 18 junior doctors of varying experience attending the teaching sessions. All three cycles have led to a significant improvement in confidence (p=0.0625, p=0.0020, p=0.00390). Results from cycle 2 showed less improvement in confidence of procedural documentation (p=0.0078). This led to a new intervention in the form of an electronic proforma. Following incorporation of this, cycle 3 results showed juniors felt maximally confident in this area (p=0.1250).

**Discussion and Conclusions:** Use of PDSA methodology enabled weaker areas of the training programme to be identified. Interventions designed to target weaker areas of training were shown to be effective in subsequent cycles.

**Take-home Messages:** PDSA methodology is an effective and systematic method of creating and improving a teaching programme, and should be used more widely in medical education.
ABSTRACT:
Background: Simulation-based medical education (SBME) has benefits for learners and patient safety. However, views differ between faculty and learners regarding transferability to clinical practice. Contributing factors include: anxiety, artificiality and differing opinions regarding the application of simulation. Briefing students on debriefing has previously been suggested as a method for reducing anxiety and encouraging curriculum integration. Our aim was to explore medical student perceptions of simulation, and how they might be influenced by learning about debriefing and non-technical skills (NTS).
Summary of Work: A case-study was performed for hypothesis generation. We consented students to participate in acute care simulations followed by semi-structured group discussions. Students then received teaching on NTS and debriefing, which presented a capability-set of skills and opportunities for reflection. They participated in another simulation session and group discussion. Thematic analysis of transcribed interviews was undertaken, using the BEME features of high-quality simulation as a prescriptive framework, with additional themes coded inductively. Themes were then organised into higher categories using a consensual process.
Summary of Results: 8 students participated in 4 discussions. 29 themes emerged, 9 matched the BEME features, 20 were considered additional. From these, 9 higher categories materialised: barriers to learning, developing skills, fidelity, how learning about SBME changed engagement with SBME, learner-focused education, learning methods, learning mindset, SBME in medical education and structured learning. All the BEME features that lead to high quality learning were important to our students, alongside multiple additional factors. Students reported barriers to effective SBME included performance anxiety and inexperience. Students reported a positive impact of learning about debriefing on understanding the purpose of SBME including how best to learn from observation and react to feedback. Students reported that their behaviour during SBME would not change, however their engagement and learning would improve.
Discussion and Conclusions: This is a potentially significant finding given the resource intensity of SBME in undergraduate medical education, and the relative simplicity with which pre-SBME training could be provided.
Take-home Messages: This qualitative exploration suggests teaching students about NTS and debriefing prior to engagement with SBME may improve perceptions of and engagement with SBME. This was a single case-study, more research is needed to confirm this effect.
ABSTRACT:
Background: A simulation-based teaching strategy guided by a Cognitive Load Theory (CTL)-Based Framework could inspire learning of medical personnel in Advanced Cardiac Life Support (ACLS) training. The CLT Framework focuses on how to design instruction by using working memory efficiently to improve learning, including intrinsic load (IL: the complexity of learning materials), extraneous load (EL: instructional design) and germane load (GL: the process of constructing and storing schemas in long-term memory). To optimize learning, the instructors should aim to: manage IL, minimize EL, and stimulate GL. The study purposes were to examine the effects of a simulation-based teaching strategy designed by CTL-Based Framework on medical personnel learning outcomes including learning attitudes, learning satisfaction, self-efficacy, cognitive load and flow experience.

Summary of Work: The study adopted one group pre- and post-test design to examine the effects of a simulation-based teaching strategy designed by CTL-Based Framework on medical personnel learning outcomes in the ACLS training. Convenience sampling was used to recruit the participants at a medical center in northern Taiwan. There were totally 100 physicians and nurses participating in ACLS training and completed learning outcome measurement by using questionnaires. We measured learning attitudes, satisfaction, self-efficacy, cognitive load and flow experience using validated 5-point Likert scales before and after ACLS training. Data were analyzed using generalized estimating equation (GEE) model.

Summary of Results: Results suggest that the simulation-based teaching strategy designed by CTL-Based Framework could significantly improve the participants learning attitudes (B=1.12, p=0.005), satisfaction (B=2.88, p< 0.001), self-efficacy (B=2.28, p < 0.001), cognitive load (B=-6.87, p< 0.001), and flow experience (B= 4.34, p< 0.001).

Discussion and Conclusions: The simulation-based ACLS training designed by CTL-Based Framework on medical personnel could significantly improve the participants learning attitudes, satisfaction, self-efficacy, cognitive load and flow experience. The study findings also support the hypothesis of CLT Framework. The decrease of cognitive load of the participants reduces the trainees IL. The increase learning satisfaction reduces the trainees EL. The increases of self-efficacy and flow experience enhance the trainees GL.

Take-home Messages: The simulation-based teaching designed by CTL-Based Framework could be applied to the ACLS Training to improve learning outcomes for physicians and nurses.
ABSTRACT:
**Background:** We all know that there are situations that we find difficult. The reasons for this are personal and varied, but the result can be a fear of being called. We believe that there is a gap in the literature which establishes whether personalised simulation sessions tailored to the needs of individual, can have a beneficial impact upon confidence, reduction of anxiety, and improved preparedness prior to their start as doctors. Clinical simulation improves medical student preparedness and confidence. Newly qualified doctors are often the first clinician to assess an unwell patient. They are significantly less likely, however, to give clear instructions to colleagues in emergency situations. Managing emergencies is a key skill that warrants early supported development. The Covid-19 pandemic has resulted in upheaval of medical education, particularly at an undergraduate level. In 2020, interruption of student assistantships was a significant factor in final year student confidence and preparation ahead of FY1 during COVID-19 pandemic. Now more than ever, there is a need for graduates who feel confident that they have had adequate preparation to step into the role of a doctor.

**Summary of Work:** We have surveyed a cohort of final year medical students, and collected responses on their personal idea of a nightmare clinical scenario. For each student we have created a personalised simulation scenario encompassing their nightmare to independently manage during a controlled simulation session. Students receive one-to-one support, feedback, and debrief from a clinical teaching fellow.

**Summary of Results:** This study is ongoing. It assesses anxiety, confidence, and preparedness in students before and after they each manage their personalised simulation. Preliminary results have shown a high response rate, and that students are very positively engaged with this as an educational opportunity. Full results will be available March 2021.

**Discussion and Conclusions:** We compare student anxiety, confidence, and preparedness scores taken before and after a personalised simulation scenario delivered to final year medical students. We aim to improve confidence and reduce anxiety in soon-to-be foundation year doctors.

**Take-home Messages:** Individualised simulation sessions could be a new approach to planning simulation for clinicians at all stages of their career, with the aim of improving patient outcomes.
ABSTRACT:

Background: Simulation-based medical education is rapidly evolving, with the development of new technologies designed to teach future physicians the necessary skills required for clinical practice. However, a paucity of research exploring the instrumental components underpinning their pedagogical efficacy and learner experience exists within medical education. Virtual reality (VR) simulation, one such technology, presents scenarios through a digital interface. Immersion is the degree to which the learner is encompassed within the virtual environment. This study assesses high immersion and low immersion VR simulation, using student simulation experience as the basis of their appraisal. The aim of this study is to determine the significance of immersion for the learning experience and establish the acceptability of these devices as teaching instruments.

Summary of Work: This crossover randomised control trial consists of thirty fifth-year medical students attending two consecutive teaching sessions. Scenarios were delivered through a VR headset, a high immersion virtual simulator, and laptop computer screen, a low immersion virtual simulator. All participants received instruction of software operation and experienced the same scenarios. Participants concluded the session on completion of questionnaires, consisting of Likert-scale and free-form questions, which explored user and observer experiences of both equipment formats.

Summary of Results: The value, usability and authenticity of the two modalities will be statistically assessed using both Likert-scale and thematic analysis of free-form responses. The finalised results will be available in March 2021.

Discussion and Conclusions: This study explores the role of immersion within VR simulation on the learner experience, a key factor in the efficacy of teaching practices and the feasibility of widespread uptake within educational institutions. Conclusions will be determined by the results.

Take-home Messages: This study acknowledges the learners core role when evaluating novel teaching methods acceptability and efficacy, and contributes to the sparse literature appraising the use of virtual simulators by medical educators.
#SC25: SC - Empathy

#SC25.1 Investigating the effect of empathy training using movies and scenario on the level of empathy of nursing students (8903)

Date of Presentation: 30 August 2021
Time of Presentation: 07:00 to 07:15

AUTHOR(S):
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ABSTRACT:
Background: Empathy has been suggested as one of the main skills in establishing effective nurse-patient communication. This study was conducted with the aim of comparing the effect of teaching empathy using movie clips and scenarios on the level of empathy of nursing students at Tehran University of Medical Sciences.

Summary of Work: This quasi-experimental study was conducted with pre-test and post-test design with the participation of 40 second and third-year nursing students. An empathy training course was designed for 6 hours using movie clips and in parallel another course with similar content using a scenario. Basic content was the same between the two intervention and comparison groups, and the purpose was to acquaint the participants with the general topics of the course. In the second part, advanced content was developed, including listening skills, skills to understand patient worries and concerns, skills to meet patient needs, involving the patient in the care which was based on the scenario in the first group and in the second group based on movie clips were presented. The students were randomly divided into two groups and the course was held for 10 days virtually through the asynchronous and synchronous systems during the pandemic. At the beginning and end of the course, the Jefferson Scale of Empathy was distributed electronically.

Summary of Results: The mean score pre-test and post-test of Jefferson Scale of Empathy in both movie clips (pretest=82.25±12.92, post-test=91.65±9.72) and scenario (pretest=81.05±12.24, post-test=88.4±9.98) group were significantly higher than, respectively p=0.003 and p=0.012. The scores of the empathy before the intervention and after the intervention were not significantly different in the two groups, respectively p=0.765 and p=0.292. By calculating the effect size, it was observed that the movie clips group had a greater effect size than the scenario group.

Discussion and Conclusions: The use of the movie clips in teaching communication skills can be useful in improving the empathy skills of nursing students.

Take-home Messages: The opportunity created by the Corona pandemic and the compulsion to e-learning can also open up more space for the use of these artistic and innovative methods for teaching empathy.
#SC25: SC - Empathy

#SC25.2 Love and breakup letter methodology in medical education (8977)

Date of Presentation: 30 August 2021  
Time of Presentation: 07:15 to 07:30

AUTHOR(S):  
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ABSTRACT:  
Background: Love and breakup letter methodology (LBM) is used in User Experience (UX), a research design discipline within the technology industry. We have recently adapted this method for use in medical education, having used it for a qualitative study of medical student views on empathy for patients.  
Summary of Work: In summary, the method works as follows... First, focus group participants write a love and/or breakup letter to the subject under study, in our case empathy for patients. Second, participant discuss the content of their letters in the focus group. Finally, the letters and the discussion are thematically analysed. This runs like a traditional focus group, with the exception that the letters form a creative and emotion-laden prompt for the discussion that follows.  
Summary of Results: We found the methodology had a number of merits. It allowed participants to focus on feelings, which are important in many areas of medical education. By personifying the subject under study and writing to it, participants were able to address issues more directly - issues which may otherwise seem more abstract. For example, participants in our study freely addressed the matter of faking empathy and how this made them feel. Creative writing invites richer language and this made both for rich data to analyse and for a springboard to discussion. The main limitation was that some participants may feel self-conscious about creative writing, though this was not a common problem.  
Discussion and Conclusions: Medical education can benefit from adapting methods from other disciplines and this method is particularly good at researching areas in which feelings may be important - obvious examples include empathy, communication, professional identity and feedback. LBM is a refreshing variation on traditional focus group methodology and in our experience the letter writing created the perfect ice breaker to energise the focus group discussion that follows. Love and breakup letters could have utility outside focus groups, for example to collect qualitative data in written surveys.  
Take-home Messages: LMB is an innovative methodology for exploring feelings and has rich potential for medical education. It provides rich qualitative data and is an enjoyable variation on the traditional focus group.
A Novel Elective in Pediatric Psycho-oncology and Narrative Medicine to Combat Empathy Drift in Medical Students (8992)

Date of Presentation: 30 August 2021
Time of Presentation: 07:30 to 07:45

AUTHOR(S):
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ABSTRACT:

Background: Over the course of medical school, students idealistic views of the profession are often replaced with cynicism that continues into clinical rotations, residency, and beyond. The aim of this qualitative study was to explore the impact of a novel elective in pediatric psycho-oncology with a component of narrative medicine to combat this empathy drift in medical students.

Summary of Work: Throughout the elective, students were relieved of their clinical duties and shadowed pediatric cancer patients and their families for 2 weeks, keeping a confidential narrative journal where they recorded their interactions, observations, and insights. The study sample included 120 journals written by 3rd and 4th year medical students who participated in the elective over a 12-year period (2008-2019). A trained team of medical students and faculty conducted an iterative thematic analysis of the journals, comparing recurring concepts within and across narratives to assess how the combination of experiential learning and reflection through narrative medicine impacted the attitudes and behaviors of students.

Summary of Results: By cutting ties with the provider point of view to focus on the patient, students were able to appreciate the therapeutic value of comprehending the social and personal experience with illness. Consistent themes emerged related to developing a rich understanding of patient and family experiences, a humanistic appreciation of the context of illness and crises, and the ability to meaningfully reflect on insights and reactions to critically ill children. Additionally, patients and families expressed their gratitude for the students active listening and attentiveness to their emotional needs.

Discussion and Conclusions: By the conclusion of the elective, most students discovered that they had reignited the intrinsic impulse that drives their empathic behaviors and were provided with unique training that may help prevent loss of empathy in future rotations. Experiences like this clinical rotation, although emotionally challenging, may be effective in counteracting empathy drift in medical school.

Take-home Messages: Experiential teaching methods, including those that are unconventional, may be a valuable tool to learn the intricacies of the patient perspective. For educators, similar curricular activities should be considered as an important next step toward restoring empathic behaviors throughout the entirety of medical school, not just the pre-clinical years.
#SC25: SC - Empathy

#SC25.4 Narrating dietitians’ empathic understanding and responding: An innovating training online (8618)

Date of Presentation: 30 August 2021
Time of Presentation: 07:45 to 08:00

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ABSTRACT:
Background: When delivering holistic healthcare, quality communication would effectively develop a beneficial therapeutic relationship and communication which dietitians could transfer the knowledge of nutrition and assist patients with their daily nutritional management. This study aimed to develop dietitians skills of expressing empathic understanding and responding through an innovating training course using an interactive interface mPath online which might develop therapeutic relationship skills and communication when dietitians performing nutrition consultations while social distancing.

Summary of Work: The quasi-experimental study was conducted to evaluate the effectiveness of the training course in simulated nutrition consultations online. Six dietitians, who worked at a Nutrition Department in a hospital in Taiwan, were enrolled purposively. After receiving the training, they reflected and annotated the third-person perspective on a simulating video online using mPath. Three evaluations measured with the Holistic Care Competence Inventory (HCCI): before(T1), after(T2) and six months after (T3) the training, were given. The paired t-test technique was performed.

Summary of Results: The training course with the use of mPath successfully influenced the participants learning in distance. The result of the paired t-test reported a significant difference over time [MD= 13.00, SE= 3.307, p=.011] before, after and six months after. An increasing training effect between T1 and T2 [MD= 10.67, SE= 4.055, p=.047] and the maintenance of the effect between T2 and T3 [MD= 2.33, SE= 2.667, p=.422] reflected in this study.

Discussion and Conclusions: The innovated training with the use of mPath technology remotely supported the initial growth of the communication skill development in dietitians consultation. This study provided an evidence-based report on the promising application of the innovating training method in dietitian education remotely, and also it purposed the integration of learning technology in the dietitian context which would enhance dietitians competence of delivering holistic care in Taiwan. Cross-disciplinary studies between the implementation of the innovating training method and dietitian education would be recommended in future.

Take-home Messages: The use of mPath technology supported the growth of the communication skill development in dietitians consultation.
ABSTRACT:

Background: The importance of empathy in Korean society have increased over recent decades, but its significance in human relationships, especially between doctors and patients, was rapidly recognised and adopted into medicine. Varied measurement tools or confounding variables may have contributed to wide-ranging study results, but the authors wish to suggest that the lack of a proper definition of physician empathy in Korea may be an important factor and obstacle in the education of empathy in medical students and physicians.

Summary of Work: Forty two attending physicians from 16 university hospitals and 70 residents participated in the Delphi survey from 20 different specialties. Extensive literature reviews and preliminary physician interviews created the first Delphi 48-item survey including: conceptual definition and essential components of physician empathy; self-assessment of empathy level; perceptions on physician empathy and patient outcomes; and individual characteristics related to physician empathy. The second-round survey consisted of 45-items.

Summary of Results: The conceptual definition of Korean physician empathy can be summarized as: understanding patients thoughts and feelings; understanding patients point of view; expressing physicians understanding on patients feelings and emotions verbally and non-verbally; showing an interest in the patient; reassuring and encouraging patients. External factors affecting physician empathy included: clinical practice environment; patient factors; and hospital culture. The internal and individual characteristics affecting doctors empathy level included: doctors physical and mental wellbeing; clinical competency and experience; and core human values.

Discussion and Conclusions: Mostly similar to western publications, the differences in the conceptual definition of empathy in Korean doctors were based on more fundamental values, ie, taking a human level interest on others and reassuring and encouraging the patient were believed to be essential traits for clinical practice and therefore the definition of empathy. Patient factors such as excessive service demand, negative preconceptions of hospitals and doctors, and ulterior motives of monetary gains from private health insurance claims were found to be specific Korean cultural factors reducing physician empathy. Doctors internal and personal factors affecting empathy did not differ to other cultures.

Take-home Messages: This is the first study to explore and establish a conceptual framework of physician empathy in Korea which may help its precise evaluation and education.
## SC26.1 A New Biomedical-Technological Training Program at Sapienza University of Rome (8542)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:00 to 07:15

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**ABSTRACT:**

**Background:** The complex interaction between clinical practice and the ever-changing biomedical and engineering technologies, calls for the creation of a novel educational profile, that will shape a new generation of medical doctors who have foundational engineering knowledge in addition to clinical expertise.

**Summary of Work:** At Sapienza University of Rome, in the current academic year 2020-2021, a new degree with a biomedical-technological program was activated. This 6-year program, designed in collaboration between the Faculties of Medicine and Engineering, aims to train a limited number of physicians also with technical and engineering skills. Subjects dealing with Translational and Precision Medicine, Genomics, Bioengineering, Bioinformatics, Bioelectronics, Network medicine, Big Data Analysis, Medical Robotics and Machine learning are integrated in the clinical core curriculum. By learning two languages this new generation of clinicians will be a bridge between the medical and the engineering field for the development of major technologies increasingly used in the daily practice of medicine.

**Summary of Results:** This programme is aimed to teach students clinical competence, core values of professionalism and technological engineering skills. The expected outcome is that this combination of skills will allow the future physician to interact with engineers in the design of new technologies applied to medicine and to be an expert user of complex technologies in the service of health care and prevention.

**Discussion and Conclusions:** Training activities, while ensuring the formation of an expert medical doctor, are widely diversified from those of existing courses to include practical and conceptual understanding of advanced instrumentation and software. This program will train clinicians that are expert users of modern technologies applied to various fields of clinical medicine and translational scientific-technological research and an active collaborator in the conception and design of new and advanced technologies in cooperation with masters graduates in the various fields of engineering.

**Take-home Messages:** Integrating the biomedical paradigm of treating the disease by taking care of the human being with the in-depth knowledge of new engineering technologies that are aimed at the process of care, is a very important step within the complex meta-paradigm of the medicine of the future.
#SC26: SC - Curriculum Themes

#SC26.2 Students’ perceptions and satisfaction with pharmacology teaching in a problem-based learning medical curriculum (8418)

Date of Presentation: 30 August 2021
Time of Presentation: 07:15 to 07:30

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ABSTRACT:

Background: Effective pharmacology learning can contribute to preparing medical students to become safe prescribers. The literature suggests that problem-based learning (PBL) is an effective mode of curriculum delivery in medical schools. However, there is a lack of studies that address the effectiveness of pharmacology teaching in PBL-based curricula and its impact on the development of effective and safe prescribing skills.

Summary of Work: A literature review was conducted to identify factors that may affect satisfaction and perceptions in pharmacology teaching in a PBL environment. Based on the elicited factors, a focus group guide and an interview guide were constructed. Year 1 and Year 2 students of the 4-year undergraduate medical programme delivered concurrently on two campuses (UK and Cyprus), following the same curriculum, were invited to participate in either a focus group (Cyprus) or personal interviews (UK). Qualitative analysis was performed by two independent assessors and major themes were identified.

Summary of Results: Three major themes arose from the analysis: 1) PBL as a Learning Environment; 2) PBL as a learning environment in Pharmacology; and 3) PBL as a learning environment and confidence in prescribing. Under theme one, students addressed issues pertaining to skill and knowledge acquisition, comparison to lectures and their preferences. Under theme two, issues pertaining to the depth of knowledge as well as correctness of material were identified. Under theme 3, students expressed variability in confidence in prescribing and related that to the depth of knowledge for each drug.

Discussion and Conclusions: Overall, students were satisfied with learning in a PBL environment. However, they believed that the depth of knowledge was variable and, in many cases, not satisfactory to provide confidence in prescribing. This is not surprising as the study was conducted with Year 1 and 2 students. Follow-up studies in more senior students are currently underway to investigate these findings further.

Take-home Messages: A PBL-based curriculum provides a positive learning environment for pharmacology teaching. Still, students perceived lack of depth may prevent confidence in prescribing.
#SC26: SC - Curriculum Themes

#SC26.3 The use of online assessment and text-based communication between medical students and patients in lifestyle modification (8031)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:30 to 07:45  

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** The pandemic has had a huge influence on the way patients access care. Most consultations in primary care currently take place remotely, with an increasing number conducted via text messaging or email services. Added to this, the NHS will face an increasing burden of long-term conditions exacerbated by poor lifestyle choices. Medical schools need to prepare students for this new reality and increase exposure to new methods of consultation and the principles of lifestyle medicine.

**Summary of Work:** In the second year at Leicester Medical School, students work as a group, communicating remotely with a patient via asynchronous text. After the patient completes an online assessment, the students identify suitable targets for lifestyle modification and then encourage the patient to make changes. Semi-structured interviews were conducted to evaluate the intervention.

**Summary of Results:** Online assessment of lifestyle was generally acceptable to patients and students and in some cases was a direct trigger to make lifestyle changes. Patients were more likely to make successful changes when student groups engaged well in the task, used a patient-centred approach and regularly checked on the patients progress. The asynchronous nature of the text-based communication was helpful in allowing patients and students time to consider their responses. Issues around relationship-building, empathy and digital exclusion will need to be addressed if this approach is to be more widely used. Engaging students in a real-life intervention in this way was found to be acceptable to patients and students. There were no patient-safety issues raised despite the programme taking part early in medical training.

**Discussion and Conclusions:** The programme provided an excellent opportunity for medical students to practice the assessment of lifestyle and to utilise lifestyle modification techniques in an authentic situation. Most patients found the online approach acceptable and many of them made positive changes because of the intervention. The use of asynchronous text-based communication was convenient for patients and students.

**Take-home Messages:** The programme used very little curricular time and gave students meaningful exposure to two of the major issues facing health services. The intervention was acceptable to patients and produced genuine benefits for some.
#SC26: SC - Curriculum Themes

#SC26.4 Students’ Approach Towards Transparency and Conflicts of Interest in Medical Education (9479)

Date of Presentation: 30 August 2021
Time of Presentation: 07:45 to 08:00

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ABSTRACT:
Background: Most physicians are unaware of how potential conflicts of interest can influence their decisions in a clinical context. Conflicts of interest in teaching are poorly researched and often not declared in formal educational settings, hindering transparency at many European universities. Medical students are likely to come across situations of intransparency and become unknowingly influenced by these during their independent decision-making processes. Furthermore, there is a lack of teaching on the subject during undergraduate medical education.

Summary of Work: The European Medical Students Association (EMSA) has worked on the topic of transparency and conflicts of interest in medical education through publishing a policy paper, initiating a working group on the topic and sharing EMSA’s view at a panel discussion with Mental Health Europe on prescription practices. In a recent project, EMSA aims to create a guideline on Conflicts of Interest to be shared across European medical schools and assess medical students perception of transparency in educational settings.

Summary of Results: EMSA’s work in advocating on Conflicts of Interest has reached a number of stakeholders. In creating a guideline on the topic, EMSA works toward raising awareness in educational settings and advocating for transparency.

Discussion and Conclusions: Interplay between the health industry and healthcare professionals can have a negative impact on prescription practices, research output, and the emergence of ethical issues. Increasing the awareness and the education level on this subject is an urgent matter to tackle starting from early years in medical faculties. It is necessary to implement courses based on the approach and management of the conflicts of interests in healthcare in universities as well as the adoption of policies regulating medical faculties dealing with their own conflict of interests. Further efforts to engage students more in the understanding of conflicts of interest potentially deeply affecting their education will need to be a priority in the years to come.

Take-home Messages: - Conflicts of interest are omnipresent in the medical field and should be addressed early on in medical school. - Medical students should be taught about the potential conflicts of interest they may face and how they should navigate their decision-making.
#SC26: SC - Curriculum Themes

#SC26.5 Threading Health Humanities into the Tapestry of Health Professions Education: A Curriculum and Evaluation Framework (9636)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 08:00 to 08:15

**AUTHOR(S):**  
Sandra Carr, The University of Western Australia, Australia*  
Brid Phillips, University of Western Australia, Australia  
Steve Reid, University of Cape Town, South Africa  
Claire Hooker, University of Sydney, Australia  
Anna Harris, Maastricht University, The Netherlands  
Pamela Brett-MacLean, University of Alberta, Canada

**ABSTRACT:**

**Background:** Health Humanities in the context of educating health professions is increasingly seen as a vehicle to provide a balance between the dichotomous teaching of the sciences, with the critical, reflexive and communication skills health professionals need. Engagement with creative practices are now being considered essential for future health professionals who need to think flexibly, be innovators, design creative solutions to institutional gridlocks and exercise sound judgment. How to describe learning processes and understand learning outcomes achieved from the introduction of the humanities into health curricula requires investigation. Collaborative, multi-centred research approaches are essential to substantiate the rationale for including the Humanities as core material in health professions curricula.

**Summary of Work:** Informed by a scoping review of the related literature and building on the work of Dennhardt et al, the recently formed Worldwide University Network: Health Humanities International Research Collaboration (HHIRC) sought to answer - What are the documented learning outcomes of Health Humanities curricula? What is the focus of Health Humanities learning? How are Health Humanities curricula being evaluated? Answers to these questions informed the development of a Curriculum and Evaluation framework.

**Summary of Results:** The focus of Health Humanities learning in pre-registration health professions programs is around six areas (for knowledge, to master skills of observation and reflection, for interactions, for behaviour formation and transformation, for wellbeing and self-care and for critical evaluation and evidence synthesis) and seek to achieve eleven Health Humanities Graduate Capabilities that have not previously been described. They are to Observe Astutely; Self-Reflect; Appreciate ambiguity; be a Collaborative Critic; Practise Evidence Synthesis; Engage in Dialogue; Interpret Perspectives; Value the Narrative; Value Person Centred Care, Appreciate Innovation and Act Relationally.

**Discussion and Conclusions:** This presentation shines a light on the learning processes, educational strategies and common core learning outcomes, being included as health humanities curricula within medical, nursing and allied health programs.

**Take-home Messages:** This Curriculum and Evaluation Framework aims to support educators in the field of Health Humanities and enable shared conversations around the success and influence of Heath Humanities across international contexts.
#SC26: SC - Curriculum Themes

#SC26.6 Evaluation of a National Pain Management and Substance Use Curriculum for Undergraduate Medical Education (9252)

Date of Presentation: 30 August 2021
Time of Presentation: 08:15 to 08:30

AUTHOR(S):
Jennifer Turnnidge, Queen's University, Canada*
Britney Lester, Queen's University, Canada
Amber Hastings-Truelove, Queen's University, Canada
Nancy Dalgarno, Queen's University, Canada
Fran Kirby, Association of Faculties of Medicine of Canada, Canada
Lisa Graves, Association of Faculties of Medicine of Canada, USA

ABSTRACT:

Background: In 2017 the Association of Faculties of Medicine of Canada (AFMC) began the process of creating an online national, comprehensive, and competency-based curriculum for undergraduate medical students in pain management and opioid use disorder as a response to the opioid crisis. These online modules provide a curriculum that can be easily accessed and integrated into existing undergraduate medical education. The purpose of this initiative is to close the educational gaps and empower the next generation of physicians with knowledge, skills, and resources needed to diagnose, treat, and manage pain and substance use.

Summary of Work: Medical students (n=187) from across Canada participated in the pilot program for this curriculum in either French or English. The pilot ran from September to November 2020. Participants were asked to complete online pre- and post-program surveys, and post-module surveys (10) to assess the value, usability, and feasibility of this curriculum.

Summary of Results: The majority of participants (>70%) agreed or strongly agreed that they were able to meet the learning objectives of the modules. The most identified strengths of the modules were that the material was clear, relevant, and useful for future clinical practice; identified weaknesses included the length, repetitiveness of the module content, and technological issues. Participants also expressed the need for a more refined French translation of the modules. Recommendations for improving the modules included making the modules more concise, reducing redundancy, and providing practical examples that include diverse population-specific and context-specific experiences of patients and healthcare providers.

Discussion and Conclusions: Participants agreed that an online pain and opioid use management curriculum enhanced learning in this area. Feedback from the pilot was used to further adapt the program to meet the needs of undergraduate medical students. A curriculum is presently being developed for postgraduate medical education and continuing professional development that scaffolds this work.

Take-home Messages: The online pain management and substance use curriculum addresses the teaching and learning gap on this topic in undergraduate medical education.
#SC27: SC - Clinical Teaching

#SC27.1 Making a GP longitudinal integrated clerkship in the UK at scale and sustainable - a Realist analysis (9211)

Date of Presentation: 30 August 2021  
Time of Presentation: 07:00 to 07:15

AUTHOR(S):  
Melvyn Jones, UCL, UK*  
Sophie Park, UCL, UK

ABSTRACT:  
Background: Longitudinal integrated clerkships (Hirsh 2007) have had only limited uptake in UK primary care settings and have often been for partial or select cohorts and have often not been sustained (McKeown 2017). The UCL Medicine in the Community programme in general practice has placed the full cohort 350 students in a year-long GP attachment during the first full clinical year to the same GPs & sustained this programme over 8 years.

Summary of Work: Using a Realist analysis (Wong 2016) we developed an initial programme theory and tested it using data from stakeholder interviews (students (n=8), patients (n=13), GP tutors & faculty (n=9)), student evaluations and correspondence to explore what works, for whom, in what circumstances, & how? in the context of a traditional block style curriculum to develop Context-mechanism outcome (CMO) configurations.

Summary of Results: CMOs were organised by stakeholder groups within the context of a block curriculum & the outcome of a sustained GP LIC. For students, mechanisms included continuity with tutors, & receiving high quality patient based teaching, responsive to their learning needs. A negative CMO was the pull of hospital teaching, travelling time & cost to attend practices. For GP tutors CMOs were receiving organisational support, faculty continuity, & adequate remuneration. Patients were not aware of a longitudinal presence of students but identified their role to help out with teaching. Patients wanted to know who students were, and students to interact with them. For faculty, CMOs included schemes to recruit & retain sufficient GP tutors to sustain the 50 GP tutors needed, needing a presence at the table of medical school committees, input to assessment and supportive leadership. The overwhelming negative CMO was the ongoing impact of timetabling clashes. Tutors that came through the system perceived the course as determining their GP career choice.

Discussion and Conclusions: Realist analysis enabled us to examine this programme as social systems and structures that are real (& have real effects) (Wong 2016).

Take-home Messages: Sustainable at scale LIC programmes require high level institutional support, strong faculty/GP tutor relationships, adequate resourcing and student engagement.
**#SC27: SC - Clinical Teaching**

**#SC27.2 Development of a framework for a structured clinical reasoning curriculum: Outcomes from a multiprofessional European project (8007)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:15 to 07:30

**AUTHOR(S):**  
Samuel Edelbring, Örebro universitet, Sweden *  
Maria Elvén, Mälardalen University, Sweden  
Desiree Wiegleb Edström, Örebro University, Sweden  
Jennifer Vrouvides, EDU Institution of Higher Education, Malta  
Sören Huwendiek, University of Bern, Switzerland  
DID-ACT Consortium, Erasmus+ project collaborative, Germany

**ABSTRACT:**  
**Background:** Despite clinical reasoning standing at the core of health professions practice, it is often taught implicitly and informally within the health professions and there is a lack of its structured education. Multiple professions can gain from a supportive framework with explicit learning objectives and expressed key educational aspects. Our aim was to develop such a framework to support development of a longitudinal and adaptive clinical reasoning curriculum for students and teachers in health professions education.

**Summary of Work:** Educators and researchers from several universities and learning institutions across Europe and the USA gathered to strengthen clinical reasoning education (DID-ACT consortium). As a part of a greater Kern-cycle of curriculum-development, participants worked in multiprofessional groups to identify resources, learning activities and assessments addressing target areas derived from a needs analysis.

**Summary of Results:** The DID-ACT framework is based on a learner-centered and active learning pedagogical approach using contextualized patient-scenarios as point of departure. Thirty-five learning objectives were formulated regarding clinical reasoning theories, cognitive biases, about gathering, interpreting and synthesizing patient information and participation, as well as collaborative aspects of clinical reasoning. Learning activities and assessment methods were constructively aligned using a competence-based approach. Progression was described at novice, intermediate and advanced student levels, and at a teaching level.

**Discussion and Conclusions:** Whereas competence-based learning objectives and curricular goals relating to clinical reasoning exist, DID-ACTs collaborative effort presents a novel contribution. It adds to previous work in its explicit focus on clinical reasoning and multiprofessional approach. The presented framework will be used to develop blended learning for students and educators within the consortium and can contribute to future standardized clinical reasoning curricula.

**Take-home Messages:** Clinical reasoning is often taught implicitly and informally within the health professions. A collaborative effort has developed a curricular framework to buttress students clinical reasoning and support educators. This framework highlights key curricular aspects and presents a range of resources, learning activities and assessments.
ABSTRACT:

**Background:** New teaching approaches have influenced traditional methodologies of medical education dramatically in recent decades. Although team-based learning (TBL) has drawn immense attention, utilization of blended-learning approaches presents opportunities and challenges both. This randomized, controlled study investigated the effects of TBL on pediatric bedside practice in medical students.

**Summary of Work:** Thirty medical students in clinical pediatrics practice were randomly divided into an experimental and a control group. Students in the experimental group practiced TBL ward rounds while students in the control group carried out traditional ward rounds. Teaching for the two groups was conducted once every two weeks, and the same clinical cases were selected for both groups with the same instructors. After six months of clinical practice, the differences of teaching effects between the two groups were compared through assessments by computer-based case simulations (CCS) and Mini-Clinical Evaluation Exercise (mini-CEX).

**Summary of Results:** The CCS scores in the experimental group were significantly higher than that in the control group (p<0.05). The mini-CEX results showed that clinical judgment and counseling skills of the experimental group were higher than those in the control group (p<0.01). Medical interviewing skills and overall clinical competence in the experimental group were better than those in the control group (p<0.05). In the questionnaire survey, students in the experimental group believed that ward rounds with TBL could promote active learning ability, improve counseling skills and strengthen teamwork.

**Discussion and Conclusions:** Application of TBL for bedside practice not only strengthened the clinical practice among medical students but also improved their critical thinking abilities and counseling skills.

**Take-home Messages:** This research provides a new bedside teaching model to promote innovative thinking in Chinese medical students. Bedside team-based learning improves the clinical ability of students via student-centered teaching.
#SC27: SC - Clinical Teaching

#SC27.4 Evaluating results of trial application of some clinical teaching-learning methods for medical students of Haiphong University of Medicine and Pharmacy (8314)

Date of Presentation: 30 August 2021
Time of Presentation: 07:45 to 08:00

AUTHOR(S):
Sang Nguyen Ngoc, Haiphong University of Medicine and Pharmacy, Vietnam*
Hanh Pham Thi, Haiphong University of Medicine and Pharmacy, Vietnam
Lam Vu Tung, Haiphong University of Medicine and Pharmacy, Vietnam
Truong Pham, BIDMC, USA

ABSTRACT:
Background: Communication with patients and history taking are critical skills for medical students to master in their training. In earlier assessments of students entering the clerkship years at our university, we found that the majority of students had not yet acquired 4 skills (communication with patients, taking medical history, taking past medical history, writing in the medical record). We piloted a focused intervention toward the beginning of the clerkship years to improve the teaching of these essential skills.

Summary of Work: The objective was to evaluate the effectiveness of a 9-week intervention to enhance learning of these skills. During the intervention, we taught students these skills according to the pre-designed model and used checklists to assess the students. The intervention was done with 4th year medical students at Haiphong University of Medicine and Pharmacy in 2014-2016 in the Pediatric and Surgery Departments. The study was designed with an intervention and control group. The intervention group was randomly selected in 2 classes with 93 students trained in the 4 skills according to the pre-designed model. The control group was randomly selected in 2 other classes with 94 students participated in the traditional curriculum without the additional skills training. Students were assessed for attainment of skills through observation using checklist. Students were assessed before intervention, after 9 weeks of intervention, and after 2 years of intervention.

Summary of Results: At baseline, the skills in both the intervention group and the control group were very low and there was no difference between the two groups. After the 9 weeks of the intervention, the mean score of the intervention groups skills was significantly higher than before the intervention (p<0.05) and in comparison with the control group. This difference was maintained when re-measured two years after the intervention.

Discussion and Conclusions: Communication and taking a medical history are important skills requiring focused instruction and practice. After a dedicated 9-week intervention, the 4 skills were significantly improved compared to a control group following the traditional curriculum. This improvement was maintained 2 years after the intervention.

Take-home Messages: To improve the quality of medical training, communication skills must be taught regularly and continuously at the medical universities.
#SC27: SC - Clinical Teaching

#SC27.5 Differences in clinical reasoning between female and male medical students in a virtual patient environment (9145)

Date of Presentation: 30 August 2021
Time of Presentation: 08:00 to 08:15

AUTHOR(S):
Inga Hege, University of Augsburg, Germany*
Meike Hiedl, LMU München, Germany
Karin Christine Huth, LMU München, Germany
Jan Kiesewetter, LMU München, Germany

ABSTRACT:
Background: Clinical reasoning (CR) is a complex set of abilities students have to learn during medical school and various teaching and assessment methods for clinical reasoning have been developed and been explored. Virtual patients (VP) provide a simulated and safe environment in which students can practice clinical reasoning and learn from errors without harming patients. A study by Groves et al. in 2003 showed that female students had higher scores in solving paper-based CR problems than their male peers, but this study did not investigate specific differences within the CR process.

Summary of Work: Therefore, our aim was to identify whether differences between female and male undergraduate medical students in the clinical reasoning process exist in a VP environment and if so which. For this purpose, we investigated whether time on task, diagnostic accuracy, number and quality of identified findings, differential diagnoses, tests, treatment options, and summary statements depending on the gender of medical students. During the summer term 2020, medical students in Bavaria had access to a course with 15 VPs in the CASUS system covering a wide range of symptoms and differential diagnoses documenting their reasoning process in a concept map.

Summary of Results: Overall, 192 learners accessed the course and 179 learners (93.2%) completed at least one VP; a total of 1791 VPs have been completed. On average, female learners completed slightly more VPs than male learners. Additionally, the detailed analysis of the CR process showed that female students entered significantly more findings, differential diagnoses, tests, and treatment options and overall performed better during the process than male students. However, they had a similar diagnostic accuracy and confidence with the final diagnosis and spent on average the same time on a VP.

Discussion and Conclusions: Accounting for all CR activities, female students performed better than their male peers, but interestingly they did not show a higher diagnostic accuracy. Identifying gender differences in the CR process can help to interpret future studies on CR and to determine whether a gender-specific teaching approach is necessary.

Take-home Messages: Female and male students showed significant differences in their clinical reasoning process. This finding might have implications on teaching and studying CR.
#SC28: SC - COVID 19 - Online Education

#SC28.1 Medical Finals Revision series, a proposed example of best practice in online teaching (9437)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:00 to 07:15

**AUTHOR(S):**  
Thomas Mayo, University of Bristol, UK*  
Dowan Kwon, University of Bristol, UK

**ABSTRACT:**  
**Background:** With medical education having been forced online during the Covid-19 pandemic, a consensus is yet to emerge regarding best practice for delivering education online. Large group teaching is especially problematic considering COVID, yet can prove the most challenging in maintaining student-engagement when online.  

**Summary of Work:** We created and ran an 8-session multiple choice question-based revision series for University of Bristol 5th year medical students before their finals examinations. Students could participate or ask questions via either the chat function or speaking via the microphone, and answered frequent multiple-choice questions via the poll function. Student perspectives of virtual learning in comparison to face-to-face learning were explored in two cross-sectional surveys before (n=26) and after the series (n=13).

**Summary of Results:** Before the series, 54% of students agreed they could learn as well online as face-to-face, with 11% disagreeing and 35% neutral. After our series, 85% agreed they had learned just as well online as they would have face-to-face, with 0% disagreeing and 15% neutral. Regarding learning tools, all students (100%) agreed that the poll and chat functions significantly enhanced learning and engagement. In contrast 8/13 students in free-text boxes remarked dislike for interacting via their microphone, as it was daunting and interrupting others. 12/13 students felt that the series-interactivity level was just right. Students also felt our series had improved their ability to learn virtually (6/13) and their approach to other virtual teaching (8/13) including being more confident [to be] involved.

**Discussion and Conclusions:** These results suggest that not only can virtual education be as well-received by students as face-to-face, but also that there is an optimal way to deliver virtual teaching, namely using polls and the chat. The literature describes successful examples of online teaching, but there is limited understanding of students preferences in how it should be implemented. We propose that the above methods can greatly enhance student-learning, and improve their perceptions of online teaching.

**Take-home Messages:** Regular teaching sessions incorporating frequent polls and chat interactions means that students feel they learn just as well virtually as face-to-face, and carry these online-learning skills to other sessions.
#SC28: SC - COVID 19 - Online Education

#SC28.2 Assessing the Utility of an Online Lecture Series to Teach Clinical Examinations and History Taking in the COVID-19 Era (8189)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:15 to 07:30

**AUTHOR(S):**  
Ben Sharp, Imperial College London, UK*  
Ioanna Zimianiti, Imperial College London, UK  
Yasamin Mahmudzade, Imperial College London, UK  
Benjamin Preston, Imperial College London, UK

**ABSTRACT:**

**Background:** The Medical Education (MedED) Society at Imperial College London supports Year 3 (first clinical year) medical students in Objective Structured Clinical Examination (OSCE) preparation. The society has been running an annual mentoring scheme whereby senior medical students tutor Year 3 students in clinical histories and examinations. In light of the COVID-19 pandemic and the associated restrictions on in-person teaching in the UK, a novel online OSCE lecture series was trialled. This was composed of five clinical examination and four history taking lectures.

**Summary of Work:** Attendees were invited to complete an online questionnaire at the end of the lecture series which was retrospectively analysed. The questionnaire consisted of Likert-type rating scale questions asking candidates to state the degree to which they agreed to different propositions.

**Summary of Results:** On average 30 students attended each lecture. 34 students completed feedback for the entire series. The vast majority of responders felt the lecture series was engaging and covered the necessary content. 50.0% strongly agreed and 29.4% agreed that lecturers conveyed practical demonstrations adequately. 82.4% strongly agreed or agreed that the lecturers were able to engage with the audience, with 97.1% strongly agreeing or agreeing that they felt more comfortable asking questions in an online setting. Overall, 97.1% felt that they were able to learn everything as if they attended in person. Of these, 79.4% strongly agreed or agreed that they preferred this learning experience to in-person OSCE tutoring.

**Discussion and Conclusions:** These survey results highlight that students attending this lecture series felt that they had gained sufficient knowledge in performing clinical examinations and histories, in an engaging and accessible way. Interestingly, the majority of students preferred online OSCE teaching to in-person teaching, which could partly be because students felt more comfortable asking questions in this setting. Further research could investigate additional factors driving students preference for online lectures and compare this cohorts and previous year groups OSCE results, in order to more accurately assess how this lecture series affects student performance.

**Take-home Messages:** An online lecture series can be an engaging and well received method of supporting medical students in their OSCE preparation.
A structured, synchronous-asynchronous, and comprehensive (SSAC) electronic case-based learning (e-CBL) model during COVID-19 pandemic: a case study

Date of Presentation: 30 August 2021
Time of Presentation: 07:30 to 07:45

AUTHOR(S):
Muhammad Imran, King Abdulaziz University, Saudi Arabia*

ABSTRACT:
Background: Electronic case-based learning (e-CBL) is a known learning strategy, and it is in use during the COVID-19 pandemic. Different approaches are being practiced by medical educationists, yet there is a need of developing more structured methods. The objective of this study was to introduce a practical yet composite and evidence-based e-CBL model, for an undergraduate course, based on social constructivist, cognitive, and inquiry-based perspectives.

Summary of Work: A structured, synchronous-asynchronous, and comprehensive (SSAC) model of e-CBL was introduced as a case study in the emergency module at the faculty of medicine in Rabigh, King Abdulaziz University, Jeddah. The model included faculty orientation, clear guidelines, and a well-structured online program. Blackboard, Zoom, and Google Classroom were utilized. A mixed-methods approach was used to analyze the impact. The comparison was done between the topics covered by the SSAC model and the topics learned by other online strategies. Results of the clinical reasoning questions (CRQ), in the final exam, were compared. Independent samples t-test was applied; a p-value \( \leq 0.05 \) was considered statistically significant. With two focus group discussions (FGD), students verbatim responses were recorded, analyzed and themes were generated.

Summary of Results: Thirty-five students were divided into 5 equal groups. The SSAC e-CBL model was implemented successfully. Students got better scores in the CRQ (final) for the topics learned by the SSAC model as compared to the topics learned by other strategies (p=0.002). Overall, the participants had positive feedback. Major themes were: the guidance is crucial; interesting and enjoyable experience; critical thinking and discussion; peer learning; uncertainty and more efforts.

Discussion and Conclusions: It is better if a structured e-CBL model is applied instead of using unfocused approaches. The SSAC model was implemented with better outcomes and acceptable students reactions. More studies with similar or other structured approaches are needed to analyze the efficacy, shortcomings, generalizability, and acceptability.

Take-home Messages: •A structured approach is better while using e-CBL as a learning tool, especially during COVID-19 pandemic or similar situations. •The SSAC model of e-CBL is introduced with promising results. •More efforts are needed to promote the importance of structured models for e-CBL.
#SC28: SC - COVID 19 - Online Education

#SC28.4 Distance Learning During COVID-19: Student Attitudes on First Applications of Pandemic-Era Distance Education (9401)

Date of Presentation: 30 August 2021
Time of Presentation: 07:45 to 08:00

AUTHOR(S):
İhsan Selçuk Yurttaş, Gazi University Faculty of Medicine, Turkey*
Irem Aktar, European Medical Students Association, Brussels
Stella Goeschl, European Medical Students Association, Belgium
Suleyman Yildiz, Dicle University Faculty of Medicine, Turkey

ABSTRACT:
Background: Starting from the mid-March of 2019, distance education and online learning have become the only way to continue education around the world. Since face-to-face education and e-learning differs in many aspects, implementation, usage and efficiency of distance learning should be evaluated.

Summary of Work: The European Medical Students Association (EMSA) has conducted a survey study on Attitudes of Medical Students to Distance Learning. We sent a 24-item online questionnaire to medical students in our Faculty Member Organizations (FMOs). We asked questions related to communication between students and school administrations, the current educational situation and attitudes about ongoing distance learning. Analysis of quantitative data was performed using statistical software R.

Summary of Results: 76 student representatives from 13 countries responded to the survey. Student involvement during decision-making processes has been voted on average 3 out of 5. Mobile device providing for students in need reported 64.9% No from respondents. 40.7 % of the faculty representatives declared that feedback mechanisms exist to evaluate online courses although the rest of the respondents declared no feedback mechanism/no knowledge. While overall satisfaction rate differs between countries, the overall satisfaction rate was voted 3 out-of 5 (%37.3).

Discussion and Conclusions: Despite the outcomes from many studies showing the efficacy of distance learning, sudden measurements had a decline in satisfaction from the students, according to our study. While capacity of distance learning infrastructure differs across countries and schools, inequity in opportunities could affect the access to education causing a negative impact on the quality of education. Continuous efforts to ensure feedback mechanisms involving both students and faculties crucial to evaluate online educational activities during the pandemic. As bedside education and other practical education is also halted in general, further investigations should be kept in account for the long-term effects.

Take-home Messages: While implementing distance education into curricula, all possible needs should be taken into consideration and self-evaluation for resources should be made. Settlement plans for academic adjustment for staff and departments should be prepared for long-term implementation. Policy-makers should be aware of advancements in technologies and needs of faculties in terms of funding, academic adjustments and infrastructural requirements to assure quality in education.
#SC28: SC - COVID 19 - Online Education

#SC28.5 Teaching professional practice to health students in an online environment (9012)

Date of Presentation: 30 August 2021
Time of Presentation: 08:00 to 08:15

AUTHOR(S):
Melanie Hayes, The University of Sydney, Australia*
Celine Diaz, The University of Sydney, Australia

ABSTRACT:
Background: Due to the impacts of the Covid-19 pandemic, many placement providers withdrew their offers to supervise first-year health student placements. Further, social distancing requirements necessitated online learning replace traditional face-to-face tutorials. These issues posed a significant challenge to educators teaching professional practice units for health professional students.

Summary of Work: In a first-year occupational therapy (OT) professional practice unit, we re-designed a unit of study centred around traditional classroom activities and fieldwork placement to an online unit of study which would engage students in learning activities aimed at developing professional skills and behaviour. Using a relational learning approach, activities included recorded lectures and live Q&A sessions with guest speakers who provided insights into diverse OT practice settings, opportunities to interview OTs and clients, near-peer mentoring from Masters students, and developing case-based scenarios for small group discussions, all using videoconferencing technology. These activities provided opportunities for students to demonstrate and reflect on expected competency development, in the areas of professionalism, learner behaviour, communication, teamwork and information gathering using the usual standardised assessment tool.

Summary of Results: Students reflected positively on the value of relational learning for their professional skill development, in particular their interpersonal skills and ability to give and receive feedback. Unit of study evaluations supported this, with students reporting that they had developed their communications skills and ability to work effectively with others (both means 4.31/5).

Discussion and Conclusions: There are flexible approaches to developing professional practice skills in first-year health students, that do not necessitate a clinical placement or face-to-face tutorials. These alternatives can still ensure students develop the necessary skills to progress through their programs, and still provide a positive student experience. The use of videoconferencing technology facilitated the relational learning approach, as it provided flexibility and accessibility for collaborative experiences with not only lecturer and fellow students, but also guest lecturers, OTs, mentors and clients.

Take-home Messages: Videoconferencing tools can be used to provide interactive and engaging activities that develop professional practice competencies in health students and can facilitate a relational learning approach, whereby students can engage with a diverse learning community in a collaborative environment.
ABSTRACT:
Background: Humanitas University’s curriculum comprehends a variety of teaching modalities. During COVID-19 pandemic, these teaching methods switch to an online medium. PBLs are present in the medical curriculum as an integration to frontal lectures in order to challenge students with real-life scenarios. During the pandemic, PBLs also shifted to digital format (DPBLs). The aim of the paper is to evaluate the effectiveness of DPBLs from both teachers and students’ perspectives.

Summary of Work: A total of 580 undergraduate medical students and 40 attending practitioners from Humanitas University were enrolled in this study. Before the start of DPBLs lectures, both students and teachers were instructed on their modalities. After the sessions, two different questionnaires were provided to both students and tutors on an online double blind survey platform. The questionnaires focus on the assessment of students and tutors perceptions of the effectiveness of DPBLs, in terms of both academic success and personal experience.

Summary of Results: Results from the evaluation questionnaires reported that both students and teachers considered DPBLs beneficial in improving self-directed learning, analytical and teamwork skills. Furthermore, they both believe that the course structure was overall satisfactory, in terms of design, organization, demonstration of appropriate knowledge of the subject area and relevance to real-world clinical situations. Both groups stated that DPBLs were a great tool in improving teamwork and in building a positive learning environment. Discordant results between students and teachers involved student impact on learning new material, interest in learning and confidence for future patient encounters. Differences among Italian and International students’ responses were also established. Such differences might account for the different methodologies by which students are accustomed to in learning, such as lecture-based approach or group activities. Both students and teachers believed that, although useful, this methodology is not fit for reproducibility in all medical subjects.

Discussion and Conclusions: The observations of the study suggest that the incorporation of DPBL into medical curricula could improve the quality and effectiveness of teaching and learning.

Take-home Messages: Although not in all medical subjects, DPBL has resulted to be a supportive tool in self-directed learning and in the facilitation of the student-tutor collaboration.
#W25: Workshop 25

**#W25  Supporting Students as Self-regulated Learners with Effective Learning Techniques: Durable learning, desirable difficulties and battling the illusion of fluency (8523)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:00 to 8:30

**PRESENTER(S):**  
Lisa Quinn, Leicester Medical School, UK  
Hannah Bonfield, Leicester Medical School, UK

**ABSTRACT:**

**Background:** Studying and practicing medicine requires an ability to self-regulate learning. Effective self-regulation involves making accurate judgements of learning and sound decisions on learning technique use when studying independently. While research has identified the most and least effective techniques for durable learning, their adoption by students is often suboptimal. Furthermore, as medical school admissions rise, there is an increasing proportion of students who struggle academically, seeking the help of study skill support services and/or experience exam failure. As such, there is an increasing need to support students develop effective learning techniques to better meet the demands and expectations of studying and practicing medicine; all those involved in medical education have a role to play.

**Who Should Attend:** Any educator:  
- involved in Undergraduate education.  
- who is keen to develop their understanding of evidence-informed learning techniques, their importance to self-regulated learning and to discuss some practical applications to their own role to further support students’ self-regulated learning skills.  
- who currently advises students to identify and study in accordance with their personal ‘learning style’.

**Structure of Workshop:** Facilitated discussion in small groups, drawing on personal and professional experiences (of attendees and the facilitators) as both learners and educators. Discussion will explore the following topics:

- What common learning techniques are adopted by students and why?  
- What are effective (evidence-informed) learning techniques identified in the research and their role in durable, self-regulated learning?  
- What challenges are there in supporting students’ adoption of more effective learning techniques?  
- Formulating potential solutions or actions we can take forward within our educator roles

**Intended Outcomes:** Following participation in the workshop, attendees will be able to:

1) Describe the term “self-regulated learning” and what factors determine effective self-regulated learning
2) Describe the common learning techniques used by students during independent study
3) Describe the techniques identified in research to be most effective for longer-term learning and what makes one learning technique more effective than another
4) Explain some of the barriers to students’ adoption of more effective learning techniques
5) Identify opportunities within their own role to support students develop more effective learning techniques.

**Level:** Introductory
#W26: Workshop 26

#W26  What is VR? A Practical Guide to Virtual Reality for Health Professions Education (8844)

Date of Presentation: 30 August 2021  
Time of Presentation: 07:00 to 08:30

PRESENTER(S):  
Daniel Salcedo, Taipei Medical University, Taiwan  
Raquel Correia, CRI - Université de Paris, France  
Alexandra Webb, The Australian National University, Australia  
Lorainne Tudor Car, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore  
Yerko Berrocal, University of Illinois College of Medicine Peoria, Health Sciences Education (Physiology) USA

ABSTRACT:

Background: The use of Virtual Reality (VR) for Health Professions Education (HPE) continues to grow and it is becoming a common sight in many hospitals and universities around the world. Yet for most educators, it is often challenging to get started and learn more about this technology. VR comes with a whole new range of terminology and concepts that can seem somewhat difficult to approach for the average educator. Like any new technology, it also raises many questions regarding its educational effectiveness and the frameworks that support it as a learning and assessment tool. The aim of this workshop is to provide an opportunity for educators to gain a better understanding of VR and its potential impact on HPE in an open, casual, non-technical environment. This is a place to discover VR and find answers to your questions in a fun, relaxed and entertaining space. Join us and lets explore and experience what the virtual world has to offer!

Who Should Attend: This workshop is for anyone who is curious about VR and its uses. You don’t need to be computer-savvy or a technological wizard, just come with an open mind and willing to experience something exciting and new.

Structure of Workshop: During this workshop you will participate in the following activities:
1) Some basic concepts of VR to get us started: No-frills guide to VR hardware and software  
2) Understanding VR as an educational tool: Looking at VR as an educational tool.  
3) A deep dive into VR: First-person perspective of different kinds of VR applications.  
4) Reflection and discussion: Exchange thoughts and ideas with facilitators and other participants  
5) Q&A: The only bad question is the one you don’t ask.

Intended Outcomes: The intended outcomes of this workshop are:
1) Develop a working understanding of VR as a technology with its pros, cons and future directions.  
2) Analyze VR as a learning tool and the educational frameworks that support it  
3) Experience first hand what VR can do and share your impressions with other educators  
4) Discuss future directions of VR for HPE

Level: Any level with a strong sense of curiosity and willingness to experience something new
#W27: Workshop 27

#W27  Don’t hate the player, hate the game: Exploring gaming-the-system behaviour in medical education (8268)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:00 to 08:30

**PRESENTER(S):**  
Marianne Mak-van der Vossen, Amsterdam UMC, Vrije Universiteit Amsterdam, The Netherlands  
Anne de la Croix, Amsterdam UMC, Vrije Universiteit, The Netherlands

**ABSTRACT:**

**Background:** Students sometimes display desired behaviours, aiming to meet the schools professionalism assessment criteria, while their educators doubt whether they have actually internalized or sincerely accepted professional norms and values. We called this gaming-the-system behaviour, which is the kind of conduct that people display to meet the requirements of existing policies or norms, without having adopted these, aiming to reach specific goals while behaving in a socially accepted way (1, 2). How do we understand this phenomenon, what can we do about it? Merely blaming the student is an easy, yet thoughtless and unhelpful reflex when it comes to educational dilemmas. In this workshop we aim to explore and understand gaming-the-system in students professional development in health professions education. Based on participants experiences and theoretical insights from sociocognitive psychology (3), we will reflect on what this behaviour can tell us about the educational culture and discuss ways forward.

**References:**  

**Who Should Attend:** Clinical and non-clinical educators, education developers, medical students

**Structure of Workshop:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Learning goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>plenary</td>
<td>Introduction of the topic</td>
</tr>
<tr>
<td>5-10</td>
<td>individual assignment</td>
<td>Exploring own experiences, opinions and ideas</td>
</tr>
<tr>
<td>10-25</td>
<td>small group assignment</td>
<td>Share experiences with other participants</td>
</tr>
<tr>
<td>25-45</td>
<td>plenary discussion</td>
<td>Bringing discussions together by introducing the literature and theory</td>
</tr>
<tr>
<td>45-60</td>
<td>small group assignment</td>
<td>“From the player to the game”: understanding contextual causal factors</td>
</tr>
<tr>
<td>60-80</td>
<td>plenary discussion</td>
<td>The way forward: defining possible actions</td>
</tr>
<tr>
<td>80-90</td>
<td>individual assignment</td>
<td>Plan individual follow up</td>
</tr>
</tbody>
</table>

**Intended Outcomes:** After finishing this workshop, participants will have learned to  
- recognize gaming-the-system behaviour in their students.  
- know what to do to prevent such behaviour.  
- foster authentic reflection on individual professional identity development in their students.  
- develop tools to create a new ‘game’.

**Level:** Intermediate/Advanced
#W28: Workshop 28

#W28  The Golden Thread: An inspiring way to integrate learning objectives (7816)

Date of Presentation: 30 August 2021
Time of Presentation: 07:00 to 08:30

PRESENTER(S):
Marloes Schmitz, Radboudumc, The Netherlands
Esther Tanck, Radboudumc, The Netherlands
Micha Holla, Radboudumc, The Netherlands

ABSTRACT:
Background: In our final bachelors medicine module Acute Complex Care at Radboudumc, the Netherlands, the learning objectives include a range of clinical topics including: the organization of acute healthcare, shock, fractures, thromboembolic events, and pain. These were taught separately, with the result that students would lose the overview of the relationships between topics and become demotivated. To address this, we developed a novel integrated solution: the Golden Thread. Our solution matches the key values of our curriculum: self-directive, activating, practice-oriented, and collaborative. In this way we were able to intrinsically motivate our students. In this workshop participants will learn about and experience this method.

Who Should Attend: Teachers and Course developers

Structure of Workshop:
10 minutes – introduction and aim
Introduction to the principles of using ‘the Golden Thread’: why, when and how.
15 minutes - Example of a Golden Thread case
We demonstrate a Golden Thread case, discussing the different steps, facilitators and barriers when developing such a case.
35 minutes – Make your own roadmap
In small groups, participants choose from three examples of sets of topics. Participants use our checklist, to create a Golden Thread case and practice our step by step approach. The focus is on how to integrate the learning objectives in an original and motivating way. We also address other questions like:
• Which teaching methods can be used?
• Which ICT infrastructure do you need?
• How can you engage colleagues to develop and use the Golden Thread case?
After each step, we include a short plenary feedback round. The product of this part of the workshop is a roadmap to creating a successful Golden Thread case.
15 minutes - Wrap up and evaluation
1. Exchange products between the groups.
2. Summarize what has been learned.
3. Short evaluation by the participants.

Intended Outcomes: Participants:
• Can use a structured roadmap to develop and implement a Golden Thread case
• Are familiar with possible barriers and facilitators to using the Golden Thread case.
• Can exchange new insights with moderators and each other.

Level: All levels
#W29: Workshop 29

**#W29** Widening our feedback conceptualisation: Recognising performance-relevant information to optimise workplace-based learning (8791)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 07:00 to 08:30

**PRESENTER(S):**  
Erik Driessen, Maastricht University, The Netherlands  
Carolin Sehlbach, Maastricht University, The Netherlands  
Miriam Wijbinga, Hogeschool van Amsterdam, The Netherlands  
Lianne Loosveld, Maastricht University, The Netherlands  
Susanne Schut, Maastricht University, The Netherlands  
Tiuri van Rossum, Maastricht University, The Netherlands

**ABSTRACT:**  
**Background:** Optimal workplace-based learning requires alignment between information that is relevant for improvement of clinical practice and formally organised feedback and assessment moments. Clinical workplace environments can offer many instances of rich and relevant information that (partly) reflects a team or an individual's performance. Learning opportunities are missed when this information, which is embedded in daily practice, is not also captured as potentially useful feedback.  
**Who Should Attend:** This workshop is aimed at healthcare professionals, trainees, and educators to recognize and use so-called performance-relevant information to support workplace-based learning. We expect students, residents, faculty and educationalists to benefit from insights in how performance-relevant information can create opportunities for learning in clinical practice.  
**Structure of Workshop:** The workshop will be highly interactive, even if it is offered online. After a brief plenary introduction, we will use a round robin design in which participants conduct small group discussions based on clinical scenarios. During several rounds of discussions, participants will build on each other's input. First, participants are asked to identify potential relevant information for learning in all scenarios. The following group will synthesize this input to identify common themes. With this information, participants will create meaningful learning opportunities. Moderated small group discussions will focus on strategies that help to recognize, prioritize and re-package relevant information in such a way that it becomes constructive and effective input for learning. To structure these conversations about potentially relevant information participants will be offered several broadly defined outcome domains. Finally, a plenary discussion will allow for transforming the lessons learned into the main take-home messages.  
**Intended Outcomes:** Participants will be able to:  
- broaden their perspective on what is relevant information from practice for workplace-based learning;  
- understand strategies to help recognize and utilise practice information in their own workplace context;  
- understand the role supervisors and trainees play in making performance-relevant information work for learning.  
**Level:** This workshop is suitable for all levels of experience and expertise
#S12: Symposium 12

WHO Europe & AMEE: Digital Education for Digital Health (9814)

Date of Presentation: 30 August 2021
Time of Presentation: 09:00 to 10:30

PRESENTERS:
Janusz Janczukowicz, Medical University of Lodz, Lodz, Poland
Natasha Azzopardi-Muscat, WHO Europe
Tomas Zapata Lopez, WHO Europe
Ken Masters, Sultan Qaboos University, Sultanate of Oman

Summary: Technology and digitalization are influencing the way the health workforce is taught and how health services are delivered. Digital health technologies are vital to establishing efficient, well-functioning health systems; empowering patients as part of a transition to people-centred care; and ensuring that health information is made available when and where it is most needed. They can improve access to health services, improve quality of care, and enhance the efficiency of health and care systems. They can empower and engage patients, making them co-designers of care. The COVID-19 pandemic has highlighted an urgent need for effective digital tools and an unprecedented acceleration in the implementation of eHealth services, including telemedicine consultation and digital contact tracing, in countries across the WHO European Region. It has also accelerated the trend towards digital education and training of health and care professionals. These trends are set to continue, and this session will examine how we can support effective digital education for digital health over the next decade.
#S13: Symposium 13

#S13  Under Pressure: Heard, valued and supported? (7529)

Date of Presentation: 30 August 2021
Time of Presentation: 09:00 to 10:30

PRESENTER(S):
Kim Walker, University of Aberdeen, UK
Lisi Gordon, University of Dundee, UK
Karen Mattick, Exeter University, UK
Daniele Carrieri, Exeter University, UK
Anita Laidlaw, University of St. Andrews, UK

Summary: As the world grappled with COVID-19 the additional stresses placed on healthcare workers and healthcare organisations shone a spotlight on wellbeing and resilience. Much has been made publicly in the media and social media of the impact these experiences have had on healthcare workers’ mental health. Whilst not a new concept, the lack of an evidence base in the academic literature for interventions that support the wellbeing and resilience of doctors and other healthcare workers has become apparent. This was brought into sharp focus as healthcare professionals and their organisations struggled to put appropriate mechanisms in place for support in a timely manner during the pandemic. Furthermore, moving beyond COVID-19, issues of health care worker wellbeing and resilience prevail as a key organisational and institutional concern in global healthcare. Risk of healthcare worker stress and burnout and the consequent impact on patient care is high across the world without adequate and evidenced based mechanisms of support.

What participants will gain: In this symposium, findings from two large scale UK-based projects, Care Under Pressure and the Scottish Doctors Wellbeing study will be presented, considered and discussed. These studies focused on doctors’, wellbeing and resilience across the career continuum and evidence for supportive interventions were explored using realist review and qualitative research methodologies, respectively. The symposium will use this work as a basis to consider and discuss key wellbeing and resilience issues for doctors as clinicians, trainees, trainers and clinical leaders including: uncertainty; safety; role; educational context; organisational support; connectedness; and workplace culture. Furthermore, the symposium will consider and discuss examples of how the medical workforce can be supported based on this evidence and how this can and should be disseminated widely to inform future policy and ultimately improve healthcare.

Who should participate: This symposium will attract international participants across the medical education career continuum who place wellbeing and resilience of health care workers at the heart of their work. Policy makers who are responsible for wellbeing of staff in organisations. Clinicians who are have roles as trainers and clinical leaders. Researchers who have an interest in new methodologies and large scale non quantitative studies.
#RP6: Research Paper - Examining fairness in assessment

#RP6.1 It’s just not fair: Learners’ and supervisors’ perspectives of the attributes of fair judgement in assessment (7730)

Date of Presentation: 30 August 2021
Time of Presentation: 09:00 to 09:20

AUTHOR(S):
Nyoli Valentine, Flinders University, Australia*
Michael Shanahan, Flinders University, Australia
Steven Durning, Uniformed Services University, USA
Lambert Schuwirth, Flinders University, Australia

ABSTRACT:
Introduction: Within health professions education, there is an increasing emphasis to better embrace subjective judgements in assessment. To do this, however, requires establishing what makes these judgements ‘fair’. Traditionally, objectivity has been favoured in ensuring fairness. But with changing assessment methods, this has been called into question. Whilst new paradigms for determining fairness of modern workplace-based assessment are needed, the task is not straightforward as fairness is an elusive, intuitive construct which is difficult to define. This study aimed to characterise learners and supervisors’ perspectives of what is fair judgement in assessment.

Methods: A constructivist grounded theory approach was used. A purposive sample of supervisors and post-graduate trainees were recruited from two universities and multiple post-graduate colleges in Australia. Twenty semi-structured interviews (12 supervisors, 8 trainees) using vignettes were undertaken. Collection, analysis and coding of the data occurred simultaneously in an iterative manner, each informing the other until saturation was reached. Themes were identified using a process of constant comparison.

Results: There is no one unanimous perspective of fairness. However, multiple themes were identified. Firstly, fairness is a multi-dimensional construct with components at an individual level, system level and environmental level. At an individual characteristics level, the study noted contextual, longitudinally-collected evidence from multiple data points - to allow for triangulation and identifying patterns of performance - was needed to support fair judgement. Furthermore, narratives which support learner reflection and learning, as well as alignment of learner and assessor perspectives are essential individual components of fair judgement. Fair judgement falls within ill-defined boundaries, which are constructed from what is relevant to competence, assessor self-reflection and from ensuring those making judgement decisions have a genuine aim of wanting learners to develop and, thereby, improve patient care. These three individual characteristics of fair judgement (narrative, evidence and boundaries) are supported by agility and expertise. For judgements to be fair, agility and clinical expertise are needed to interpret and interrogate the evidence obtained and help identify the fuzzy boundaries. Educational expertise is also needed to provide narrative feedback to ensure learners can reflect and improve.

Another finding highlighted the importance of system features in ensuring fair judgement. Factors such as multiple opportunities for learners to demonstrate both competence and improvement were considered essential for fair judgement. Multiple assessors were seen to allow for more data and perspectives to be collected, for member checking and triangulation, and to allow for a broader range of competencies to be assessed. Having multiple assessors also enables group support in judgement decision making, rather than this falling on one assessor. Validity evidence to support the investigative processes involved in making judgement decisions and ensuring judgement on a breadth of appropriate competencies is also important for fairness. These system features are supported through the concept of procedural fairness. Procedural fairness provides transparent expectations, allows for fit-for-purpose, individualised, proportional judgements, and supports dialogue and engagement with the learner.

Finally, the study highlighted the environment in which the assessment decisions are made needs to be considered for judgement fairness. Learners are future health professionals, and judgement decisions are only fair if they also consider patients. Also, a safe working and learning environment and culture were essential components for judgement fairness, as was considering the individual circumstances of the learner. A conceptual model to demonstrate these relationships was developed.
Discussion and Conclusions: In moving away from an objective paradigm to achieve fairness, a framework and narrative to ensure fairness of human judgements in assessment is needed. This study provided additional insights into a literature review previously undertaken and demonstrates that components of fair human judgement can be explicitly articulated whilst still embracing the complexity and contextual nature of health-professions assessment. Thus it provides a narrative to support dialogue between learner, supervisor and institutions about ensuring fair judgements in assessments.

Trust, power, and assessment for learning in workplace-based assessment

Date of Presentation: 30 August 2021
Time of Presentation: 09:20 to 09:40

AUTHOR(S):
- Damian Castanelli, Monash University, Australia*
- Jennifer Weller, University of Auckland, New Zealand
- Elizabeth Molloy, University of Melbourne, Australia
- Margaret Bearman, Deakin University, Australia

ABSTRACT:

Introduction: For trainees to participate meaningfully in workplace-based assessment (WBA) they must have trust in their assessor, or their participation can be tokenistic rather than focused on learning. However, such trust is complicated by the trainee’s dependent position. Understanding how power and trust influence WBAs may help us make them more effective as opportunities for learning.

Methods: We conducted semi-structured interviews with 17 postgraduate anesthesia trainees across Australia and New Zealand. Sensitised by notions of power, we used constructivist grounded theory methodology to examine trainees’ experiences with trusting their supervisors in WBAs.

Results: Trainees perceived supervisors held significant power to mediate access to learning opportunities and influence their progress in training. All observed learning encounters (including working alongside each other), not just formal WBAs, were seen to potentially generate an informal assessment with potential consequences. In response, trainees actively acquiesced to a subservient role, which provided access to desirable expertise and minimised the risk of reputational harm. When supervisors used their power for the trainee’s benefit, trainees were more trusting and open to learning. Trainees avoided WBAs with supervisors they perceived as less trustworthy.

We found the nature of the trust the trainee placed in the supervisor was largely a response to how the supervisor used the power inherent in their role. This power to grant trust is based on the trainee’s perception of both their supervisor’s enacted and predicted power over them. Trainees learn to expose their authentic practice in assessments to their supervisors as an expression of trust. If trainees feel unable to demonstrate their authentic practice, the opportunity to learn from WBAs is limited.

Discussion and Conclusions: The trainee-supervisor power dynamic must evolve if assessment for learning is to become more than an occasional exception. Supervisor behaviour that rewards trainee trust would invite assessment for learning. Modifying assessment system design to re-balance the power dynamic towards the trainee may also help. Modifications could include designated formative and summative assessments, or trainees being granted the power to select which assessments contribute to progression decisions. Understanding and attending to power and trust may be a step towards the aspirational goal of assessment for learning in the workplace.
#RP6: Research Paper - Examining fairness in assessment

#RP6.3 The Impact of Disability on Performance in the MRCS: A high-stakes postgraduate Surgical Examination (7428)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:40 to 10:00

**AUTHOR(S):**  
Ricky Ellis, Nottingham University Hospitals, UK*  
Peter Brennan, Intercollegiate Committee for Basic Surgical Examinations, UK  
Duncan Scrimgeour, Department of Colorectal Surgery, Aberdeen Royal Infirmary, UK  
Amanda Lee, Department of Medical Statistics, University of Aberdeen, UK  
Jennifer Cleland, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

**ABSTRACT:**

**Introduction:** Diversification has been high on the workforce agenda in recent years. Related to this, the number of medical students and doctors with disabilities seems to be increasing. Whilst students with disabilities often have access to support and reasonable adjustments within high school and medical school, there is evidence documenting less pastoral and learning support after graduation and within postgraduate training. This may be detrimental in respect to performance and career progression. However, there is a paucity of data on the performance of doctors with registered disabilities in the postgraduate environment and little understanding of whether attainment differences exist in postgraduate examinations. To address this gap in knowledge, we assessed the impact of disabilities on performance in the Intercollegiate Membership of the Royal College of Surgeons examination (MRCS), a high-stakes international-renowned postgraduate assessment.

**Methods:** All UK medical graduates who had attempted MRCS Part A (n=9,597) and Part B (n=4,562) between 2007-2017 with linked disability data in the UK Medical Education Database (https://www.ukmed.ac.uk) were included in the study. Univariate analysis identified associations with MRCS performance and logistic regression models were created to identify independent predictors of success. Given that prior academic attainment is known to be the strongest predictor of later success we also assessed the performance of candidates with and without disabilities in other written examinations taken earlier in their careers.

**Results:** Candidates with registered disabilities performed worse in A-Levels (examinations taken on exiting high-school) compared to their peers (mean score 30.1 [standard deviation (SD) 9.2] vs. 34.7 [SD 9.4] respectively) and the Educational Performance Measure (EPM: an assessment of performance at medical school) (42 [SD 3.3] vs. 43 [3.3]) (p<0.005). Similarly, candidates with registered disabilities had lower MRCS Part A (written examination) pass rates than their peers (46.3% vs 59.8% respectively (p<0.001)) but similar Part B (clinical examination) pass rates (68.2% vs 70.9% (p=0.339). They were nearly twice as likely to fail Part A when accounting for other socio-demographic predictors of success including gender, ethnicity and graduate status (odds ratio 0.55 [95% Confidence Interval 0.46-0.64]). When prior academic attainment was taken into account, there was no statistically significant difference in the likelihood of success at MRCS between candidates with and without disabilities (p>0.05). No significant difference was seen in pass rates between candidates with specific learning difficulties and those with other registered disabilities (p>0.05). Additionally, no significant difference was seen in pass rates between candidates who did and did not declare limitations to their daily activities caused by disability (p>0.05).

**Discussion and Conclusions:** This is the first study to assess the impact of disability status and disability type on performance at a postgraduate medical examination. It seems that candidates with registered disabilities perform less well in formal, written examinations generally. Our data indicate that the MRCS itself is fair for candidates with registered disabilities and that the current testing accommodations are sufficient to enable performance unrestricted by disability. However, further work is needed to investigate the causes of attainment differences in early career assessments, and to drive the appropriate distribution of support and resources to enable equity in career progression.
#RP6: Research Paper - Examining fairness in assessment

#RP6.4 Fair medical school admissions - a discourse analysis of focus groups with stakeholders (7631)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 10:00 to 10:20

**AUTHOR(S):**  
Anouk Wouters, Amsterdam UMC, Faculty of Medicine, Vrije Universiteit Amsterdam, The Netherlands*  
Anne de la Croix, Amsterdam UMC, Faculty of Medicine, Vrije Universiteit Amsterdam, The Netherlands  
Rosa van Santbrink, Vrije Universiteit Amsterdam, The Netherlands  
Kirsty Alexander, Research Department for Medical Education (RDME), UCL Medical School, University College London, UK  
Maureen Kelly, School of Medicine, National University of Ireland, Ireland  
Rashmi Kusurkar, Amsterdam UMC, Faculty of Medicine Vrije Universiteit Amsterdam, Research in Education, The Netherlands

**ABSTRACT:**

**Introduction:** Globally, medical school admissions are heavily debated and influenced by a variety of social environments and stakeholders. Stakeholders views and societal context are therefore crucial for determining the acceptability of admissions policies. Policy makers may be discouraged to implement particular evidence-based admissions practices because if these are not widely accepted, applicants are more likely to file complaints. To better understand the public and political acceptance (political validity) of practices, insight into various stakeholders perspectives, values and sentiments influencing support for admissions policies, is necessary. The research question was: which discourses of fairness in medical school admissions are used by stakeholders and what is the role of emotions?

**Methods:** We conducted a constructivist qualitative discourses analysis study. We held 8 homogeneous focus groups with 30 stakeholders; prospective students and parents, selected students, rejected candidates, doctors/teachers, selection committee members and general public. We used a realistic selection case, asking who should be admitted and how this can be achieved fairly, together with a topic list, to facilitate group discussion. Three researchers followed Willig’s six-stage approach, with ‘fairness’ as discursive object, to identify the discourses used, stakeholder positioning, and relationships between discourses, while considering emotional expressions. We viewed political validity through three types of justice (organizational justice theories): a) distributive justice - fair selection results; b) procedural justice - fair processes; c) interactional justice - fair treatment of stakeholders [1].

**Results:** The most prominent discourses around ‘fairness’ pertain to who should be admitted (distributive justice), while discourses appealing to procedural and interactional justice seem to serve to prevent violation of those. The hierarchy between discourses is strengthened and reflected by the emotions they evoke. The most dominant discourse claims the existence of ‘chosen ones’, those destined to be doctors, who definitely need to be admitted. It puts the responsibility on medical schools and the government to do justice to this group. Violation of the discourse, i.e. rejection of these ‘chosen ones’, elicits strong emotions and must be avoided at all times. The reality of limited places complicates the situation. A second discourse claims that ‘everyone can play the game’ of admissions. Medical schools and the government are responsible for designing fair merit-based procedures that ensure admission of the ‘chosen ones’. Providing transparency about the game rules enables other candidates –by working hard– to earn their place in medical school too. Advantages because of preparatory courses or candidates’ socio-economic backgrounds are accepted and considered ‘part of the game’. The pressure put on candidates elicits emotions, but emotions run higher when other candidates gain places at the expense of the ‘chosen ones’.

The discourse placed lowest in the hierarchy claims that ‘everyone can be a winner’, irrespective of background characteristics. Within this discourse, when inequity emerges, responsibility is put on disadvantaged candidates to overcome this by working harder. Medical schools’ responsibility to be...
transparent is reinforced, but also dismisses them from further action. Privileged positions of candidates are more readily accepted than levelling the playing field for disadvantaged candidates. The above discourses all position candidates as beneficiaries of admissions, while in a fourth discourse society should benefit. Fairness within this implies generating a demographically representative workforce and meeting future health care needs, but violation does not elicit emotions.

**Discussion and Conclusions:** The findings suggest that, across all stakeholders, there is political validity for meritocratic methods rather than methods that prevent or mitigate inequity. This is in line with previous observations in UK and Canadian settings. Our study provides insight into the role of emotions and perceptions of justice within this, and how and why these can overshadow the role of scientific evidence about inequity and future workforce needs. Strategies are warranted to increase political validity for equitable and societal need-driven admissions, which may include acknowledging the prevailing discourses when communicating about policy changes, such as (re)introduction of lottery-based admissions.

ABSTRACT:

Background: Bedside teaching (BST) is an essential part of medical education and studies have shown that it is an enjoyable and fruitful experience for all parties. Clinical teaching in many hospitals has been severely disrupted due to the COVID-19 pandemic in an effort to minimise patient risk and reduce hospital pressures. With infection prevention now being at the forefront of the public's mind, we aimed to look at the change in attitudes towards BST from a patient's perspective.

Summary of Work: As patient cooperation is fundamental to BST, we conducted a survey to analyse patients' willingness to participate in BST before and during the pandemic. In addition, they were asked to indicate their willingness to engage if students were not vaccinated.

Summary of Results: Data was collected over a 72-hour period from 50 patients across specialties in a university hospital. A Student T-Test analysis showed there was a reduction in willingness to participate in BST during the pandemic compared to prior retrospectively reported scores (P=0.01). There was also a significantly reduced eagerness to participate if the students were not vaccinated (P=0.01).

Discussion and Conclusions: With the on-going interruption to medical education due to the tortuous nature of the pandemic, it is self-evident that any further disruption will greatly affect the ability of current medical students to graduate. Although considerable learning is achieved by the patients bedside, there has to be a strict balance between education and patient risk. Our data suggests that patients are aware that exposure to students is a potential infection risk and are therefore more reticent to participate in BST. In the UK student vaccination is not mandatory. Our data indicates that knowledge of a student's vaccination status is a significant factor in whether a patient agrees to participate in BST. Despite this, students have a fundamental right to privacy and this therefore has to be carefully considered. Conclusion: Medical establishments need to acknowledge the increased patient anxiety associated with possible Covid-19 infection from medical students and adapt their teaching methods accordingly.

Take-home Messages: The risk of COVID-19 has resulted in patients being less willing to engage with bedside teaching, especially if the students are not vaccinated.
#EP7: ePoster - Clinical Teaching in COVID Era

#EP7.2 Anahuac University - Virtual Hospital. An opportunity for undergraduate medical students for training and assessment in response to COVID-19 (9779)

Date of Session: 30 August 2021
Time of Session: 09:00 to 10:30

AUTHOR(S):
Edgar Israel Herrera Bastida, Health Sciences Faculty-Anahuac University Mexico, Mexico*
Diana Jiménez González, Anahuac University - Health Sciences Faculty, Mexico
Monsterrat Urban, Anahuac University - Health Sciences Faculty, Mexico
Francisco Raúl Barroso Villafuerte, Anahuac University - Health Sciences Faculty, Mexico

ABSTRACT:
Background: The COVID 19 pandemic has been an unexpected event for medical schools worldwide; we had to implement solutions for med school students who cannot attend their clinical rotations and avoid a decrease in clinical teaching time and quality. We have created a virtual hospital platform through which professors and students can interact by emulating their clinical rotations, visiting hospital areas, and accessing information sources at all times.

Summary of Work: The Anahuac University, through its SimCenter, worked on the development of a free access internet-based platform that emulates the experience of work and interaction in a real clinical environment called Anahuac University-Virtual Hospital (AUVH) Participants can visit in real-time and pre-recorded the different areas of a real clinical environment, participate in live sessions, accompany doctors in a clinical setting, and participate in VR and 360 cameras places in some areas operating rooms during a procedure. The AUVH has made it possible for students to have had the opportunity to interact with their hospital professors in face-to-face situations, during rotations in real environments, and practice their communication and clinical skills while maintaining their safety.

Summary of Results: Since its inception in August 2020, the AUVH has received 11,480 visits. More than 250 interviews have been carried out with simulated patients. 25 face-to-face courses 2000 consultations to the hospitals virtual library. The assessment of communication skills with this modality compared to the face-to-face one has been measured. It is found that there is no statistically significant difference between the two. Satisfaction surveys reflect great optimism and thanks for this effort to continue practicing and learning using this tool.

Discussion and Conclusions: AUVH will not supply a real clinical setting due to the multiple variables that intervene in the participants perception of realism. However, it is necessary to look for alternatives to continue with the training in a safe environment, allowing the teaching and evaluation processes to be objectively measured because of this pandemic.

Take-home Messages: The COVID19 pandemic has allowed us to experiment, develop and perfect new teaching and evaluation methodologies. The results provide hope to get ahead even in the most adverse conditions for medical education.
#EP7: ePoster - Clinical Teaching in COVID Era

#EP7.3 COVID-19 impact and future of virtual clinical education and assessment in Iran: 
Expert recommendations (8824)

Date of Session: 30 August 2021
Time of Session: 09:00 to 10:30

AUTHOR(S):
Shima Tabatabai, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

ABSTRACT:
Background: The current pandemic impact on clinical education and assessment could be considerable. The safety issues have made medical education administrators in Iran, seeking emergent technologies to help them in transferring to virtual learning. Iran’s Virtual university of medical sciences (IVUMS) offers many benefits such as accessibility to educational content from anywhere at any time. This platform can facilitate high-quality clinical training moving forward with applying interactive simulation-based tools.

Summary of Work: The Iranian Academy of medical sciences convened groups of scholars, policy leaders, medical educators, and futuristic planners over a two-week period in July 2020, to address the fundamental questions: (1) What are the biggest challenges to keep clinical education on track? (2) What strategies are you recommending/discussing that may be best bets for transforming to virtual clinical education? (3) Do medical educators have the tools required?

Summary of Results: Based on panelists expert opinion, it is necessary to transform clinical medical education through the following suggested steps: 1. Determining clinical education priorities during the pandemic: Keeping learners safe, supported, engaged, and keeping education moving forward with high quality are the priorities. 2. Determining challenges and related solutions through available resources: unequal access, maintaining performance standards, and quality assurance are unprecedented challenges. In Iran, VUMS has provided authentic educational content to help high-quality medical education all around the country. 3. Applying Simulation-Based Management Solutions for Virtual Clinical Education and assessment.

Discussion and Conclusions: Simulation-based solutions for healthcare training environments ranging from clinical simulation management software and hardware to counselor education, case development, and virtual patient training has the unique ability to make learners believe they are in a different environment and to simulated clinical experiences as they would do in hospital-based real experiences. Simulation-based Virtual OSCE facilitates core learning for clinical decision making in distance learning platforms.

Take-home Messages: Since the perspective of medical education after the pandemic will transform, it is necessary to engage in futuristic plans to adapt to the impact of COVID-19. Considering the benefits of simulation-based healthcare environments, Medical school administrators should invest in virtual simulation-based educational management technologies to keep the clinical education and competency assessment on track throughout the COVID-19 pandemic.
ABSTRACT:

Background: Due to the corona pandemic the Charité Berlin shifted towards e-learning like many universities around the world did. It seemed especially challenging to teach communication courses online, which are based a lot on direct interpersonal contact, including interactions with standardized patients (SPs).

Summary of Work: In summer semester 2020 approximately 1300 undergraduate medical students (semesters 1, 2, 5, 6) had online communication courses including SP interactions. Our aim was to compare students and facilitators perception of SPs in the digital versus face-to-face setting and if there could even be opportunities that arise from the digital setting. A questionnaire was sent to students and facilitators including questions about how good of a learning opportunity SP interactions were offering and how realistic the depiction of the patients was perceived (scale: 1-5, much better online to much worse online). Furthermore we asked if conducting a virtual consultation could be learned via online SP interactions (scale: 1-5, very good to very bad).

Summary of Results: In total, 132 students and 35 facilitators answered the questionnaire. The learning opportunity of online SP interactions was rated as almost equally good as that of live interactions (m=3.23, sd=.76, n=122). Similarly, the patient depictions online were perceived as almost equally realistic as live depictions (m=3.17, sd=.04, n=120). The students pointed out technical problems and reduced nonverbal signals as reasons for decreased realism. On average, students and facilitators rated online SP training to be a good opportunity for practicing virtual consultations (m=1.93, sd=1.04, n=166).

Discussion and Conclusions: The evaluation results indicate that the learning opportunity provided by SP interactions and the realism of role portrayal didn't suffer much from the online format. Additionally online SP interactions have the benefit of being a good opportunity for practicing virtual consultations. It should be noted that only 10% of the students answered the questionnaire. For AMEE 2021 data from following semesters will be added.

Take-home Messages: Using SPs to train communication skills stays a valuable learning opportunity, whether interactions take place on-site or online. Due to reduced nonverbal communication and technical difficulties that can occur it is still preferable to use SPs in face-to-face settings.
#EP7: ePoster - Clinical Teaching in COVID Era

#EP7.5 Educational needs in the COVID-19 pandemic: A Delphi study among doctors and nurses in Wuhan, China (8683)

Date of Session: 30 August 2021  
Time of Session: 09:00 to 10:30

AUTHOR(S):  
Xun Hou, The First Affiliated Hospital, Sun Yat-sen University, China*  
Wenjie Hu, The First Affiliated Hospital, Sun Yat-sen University, China  
Lene Russell, Copenhagen Academy for Medical Education and Simulation (CAMES), Denmark  
Ming Kuang, The First Affiliated Hospital, Sun Yat-sen University, China  
Lars Konge, Copenhagen Academy for Medical Education and Simulation (CAMES), Denmark  
Leizl Joy Nayahangan, Copenhagen Academy for Medical Education and Simulation (CAMES), Denmark

ABSTRACT:

Background: During the initial outbreak of the novel coronavirus disease (COVID-19), many healthcare professionals were quickly trained and deployed to attend to thousands of patients. At current, the increasing wave of infection worldwide is pushing an urgent call for educators to reflect on key lessons learnt from the initial outbreak and develop a highly relevant training curriculum to adequately prepare healthcare workers for COVID-19. In this study, we aimed to identify knowledge and skills regarding treatment, prevention of spread and protection of staff to inform the development of a comprehensive training curriculum on COVID-19 management.

Summary of Work: This cross-sectional study included 134 deployed healthcare workers (74 doctors and 60 nurses) caring for COVID-19 patients in nine hospitals in Wuhan, China. A two-round modified Delphi process was employed. In round 1, participants identified knowledge, technical and non-technical skills needed to treat patients, prevent transmission, and protect themselves. In round 2, they rated each item according to its educational importance. Consensus for inclusion in the final list was set at 80%.

Summary of Results: In round 1, 1,398 items were suggested by the doctors and reduced to 67 items after content analysis (treatment of patients: n=47, infection prevention and control: n=20). The nurses suggested 1,193 items that were reduced to 70 items (treatment of patients: n=49, infection prevention and control: n=21). In round 2, 82% of doctors and 93% of nurses responded. The final lists included 58 items of knowledge, technical and behavioural skills for doctors and 58 items for nurses.

Discussion and Conclusions: This needs assessment process resulted in consensus lists of what to include in a training curriculum on COVID-19 management. We propose that educators use these lists as a guide when deciding what to teach, not only during this unprecedented COVID-19 crisis but also in preparation for possible future viral pandemic.

Take-home Messages: This study involved deployed doctors and nurses in Wuhan, China in an iterative survey to identify educational needs of frontline healthcare workers in fighting COVID-19. Consensus was achieved on important knowledge and skills focusing on treatment, prevention of spread and protection of staff.
#EP7: ePoster - Clinical Teaching in COVID Era

#EP7.6 Virtual Ward Round and pandemic based learning (7874)

**Date of Session:** 30 August 2021  
**Time of Session:** 09:00 to 10:30

**AUTHOR(S):**  
Richard Lloyd-Nash, NHS UHDB Foundation Trust, UK*  
Sarah Walker, NHS UHDB Foundation Trust, UK  
Ifeanyichukwu Okike, NHS UHDB Foundation Trust, UK

**ABSTRACT:**  
**Background:** Each year we have 100 4th year medical students for their paediatric placement. During the Covid-19 pandemic there was a reduction in patient contact time so we designed a blended model of learning for a ward round experience.  
**Summary of Work:** We created a Virtual Ward Round (VWR) which is an interactive platform using PowerPoint based on real patients. This included common and important paediatric conditions. They had access to the history and examination findings, clinical observations, the investigations and clinical guidelines. The VWR was based over 5 days where students made daily plans based on their clinical findings. A group session held at the end of the rotation worked through the VWR and answered any relevant queries. An anonymised online feedback was sent at the end of the rotation.  
**Summary of Results:** 14 out of 27 (52%) students completed the feedback. All the students reported that they found it useful with their responses categorised as very often or always useful (43%) or often useful (57%). Summarizing the free text showed that the students would like more of this type of blended learning. Comments included This was a really useful resource. It was good to see how a ward round works before being on one, as well as seeing what the ward based doctors have to do after the ward round is over.  
**Discussion and Conclusions:** This pilot group showed that this was found to be acceptable and to be useful amongst the students. The free text comments confirm that we were able to reflect reality with a virtual setting. This could be used as either preparation before, as an aid during or as revision after the ward rounds. This could be used in other settings such as outpatients. We are aiming to create more VWRs and increase the frequency that the students can access new content. This would be a useful resource in the event of interruption of clinical placement.  
**Take-home Messages:** Medical education needs to be adaptable due to ever-changing circumstances. Innovation therefore leads to a change in practice that can improve the learning experience for the student. To be proactive with teaching content rather than reactive.
#EP7: ePoster - Clinical Teaching in COVID Era

**#EP7.7   Meet you on the cloud: Another Key to Medical Education during COVID-19**

(8294) 

**Date of Session:** 30 August 2021  
**Time of Session:** 09:00 to 10:30  

**AUTHOR(S):**  
Te-Chuan Chen, Nephrology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan  
Chih-Hsiung Lee, Nephrology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan  
Meng-Chih Lin, Pulmonary, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan  
Shao-Ju Chien, Department of Pediatrics, Kaohsiung Chang Gung Memorial Hospital, Taiwan  
Chia-Te Kung, Department of Emergency, Kaohsiung Chang Gung Memorial Hospital, Taiwan

**ABSTRACT:**  

**Background:** Coronavirus Disease (COVID-19) causes a devastating global crisis and disaster with numerous deaths and financial loss. It affects all aspects of our life especially the daily practice and clinical medical education.  

**Summary of Work:** We applied the cloud meeting to continue clinical education and contain the virus by social distancing since the initial spreading of COVID-19 during early 2020. We conducted a cross-sectional study and developed a questionnaire to investigate the participants’ perceptions to explore the factors affecting the clinical education of cloud meeting by e-mail. The satisfactory agreement was graded by Likert 1-5 point from completely disagreement to completely agreement. Principle component analysis with Varimax rotation was performed to analyze the factors as measured by the questionnaire. Significance was set at p < 0.05.  

**Summary of Results:** 1,410 colleagues participated in the study during 2020. The response rate was 30% (1,410/4,700). Principle component analysis with Varimax rotation showed a Kaiser-Meyer-Olkin value of 0.956 with a significant Bartlett sphericity test (p < 0.001). Twenty items could be categorized into three groups as a three-component model with eigenvalues >1.0 (ranging from 1.053 to 11.536). The three-component model is as follows: Component 1) Effectiveness and flexibility of learning, Component 2) Attention deficits with unintentional interruption, and Component 3) Technical feasibility. The total accumulative explained variance is 80.748% (64.089%, 10.807% and 5.852%, respectively).  

**Discussion and Conclusions:** Our study demonstrated cloud meeting was an alternative way to keep continuing clinical medical education during the pandemic, especially in the teaching medical center. It could not substitute every domains of clinical medical education but could decrease unnecessary contact as possible during the pandemic. The concerns of cloud meetings were Attention deficits with unintentional interruption and Technical feasibility.  

**Take-home Messages:** Cloud meetings provide us an alternatively technology-assisted forum to continue clinical medical education during the pandemic. It can help us to overcome the barriers with more flexibility and to facilitate the teaching and learning during or after the infection control.
#EP7: ePoster - Clinical Teaching in COVID Era

#EP7.8  Teaching undergraduate virtual consultation skills at University Hospital Wishaw (UHW) (8661)

Date of Session: 30 August 2021  
Time of Session: 09:00 to 10:30

AUTHOR(S):  
Edie Booth, NHS Lanarkshire, UK*

ABSTRACT:

Background: The covid-19 pandemic has led to an increase in virtual clinics in both primary and secondary care. Consequently we believe this is an important communication skill to teach undergraduates. This research aimed to design and evaluate the short term benefit and transferability of a teaching programme on virtual consultation skills for medical students at University Hospital Wishaw (UHW).

Summary of Work: We designed and delivered a two-part teaching session on virtual consultation skills to 15 final year medical students (in groups of 5) on their Obstetrics and Gynaecology placement from September-November 2020. The initial session included a presentation on virtual consultation skills, individual practice consultations, group debrief and discussion including peer feedback. Students were given an OSCE-style scenario and had 10 minutes to conduct a consultation with a virtual patient actor over Microsoft Teams. Virtual consultations and group debrief were repeated in the second session two weeks later. Pre- and post-teaching confidence questionnaires (self-reported Likert scale from 1 - not confident to 5 - fully confident) assessed four areas of the consultation: opening, history taking, decision/management and closing. An online survey was sent out four weeks after the second session, following students General Practice (GP) placement to evaluate its usefulness for primary care.

Summary of Results: 15 students surveyed; 100% confidence questionnaire completion; 67% online survey response rate. Mean confidence scores pre- and post-teaching respectively for each area: opening=(2.67/4.64), history=(3.38/4.29), decision/management=(2.62/3.93), closing=(2.81/4.64). 100% of online survey respondents ranked the skills session as very useful and answered yes to whether they considered it worthwhile continuing. Opportunities to practice virtual consults on GP ranged from 0 to >9 per week, mostly via telephone. Main suggestion for improvement (40%) was to include telephone consultations.

Discussion and Conclusions: Initial results show a positive impact in short term confidence and longer term application to primary care where virtual consultations are an important part of student placements. This programme is ongoing and is being adapted accordingly following results to include telephone consultations.

Take-home Messages: Considering recent changes in medical practice, teaching medical students specific virtual communication skills has been shown to improve their confidence and is transferable to GP placements.
#EP7: ePoster - Clinical Teaching in COVID Era

#EP7.9 Pediatric Virtual Standardized Patient Encounter Offers Feasible Solution to Current Limitations on Experiential Learning During COVID-19 (9038)

**Date of Session:** 30 August 2021  
**Time of Session:** 09:00 to 10:30

**AUTHOR(S):**  
Elizabeth Chawla, Georgetown University School of Medicine, USA*

**ABSTRACT:**

**Background:** In the United States, pediatric mental health concerns are increasing at an alarming rate, with suicide as the second leading cause of death amongst youth aged 10-34 since 2018. Experiential learning with standardized patients has proven to be effective in our residency program at training pediatricians in mental health, but in 2020 all simulations were cancelled to comply with quarantine measures during the COVID-19 pandemic.

**Summary of Work:** To test feasibility of conducting experiential learning over a virtual format, we transitioned an existing standardized patient encounter to be conducted virtually. Senior residents participated in a telehealth visit with a standardized patient while being observed in real-time by a faculty member via video platform, followed by one-on-one formative feedback from the faculty member. Feedback centered around three main learning objectives: recognition of childhood anxiety, communication skills, and navigating telehealth for outpatient pediatrics. The simulation was also recorded via the video platform, giving residents the opportunity to watch themselves and reflect on their experience.

**Summary of Results:** Post simulation evaluation with both Likert scale questions and open responses showed the virtual exercise was feasible, and learner-rated quality of teaching was overall comparable to a previous in-person experience with 60% of residents completely satisfied and 10% mostly satisfied as compared to 20% and 70% respectively in a comparable in-person exercise. Learning objectives were met, as self-rated communication skills improved from an average of 3.7/5 to 4/5, confidence in performing telehealth visits improved slightly from 3.4/5 to 3.6/5, and confidence in addressing anxiety in pediatric patients improved from 2.9/5 to 3.5/5 following this learning experience. Perhaps most significantly, in both scored questions and open responses learners rated doing the simulated visit (60%) and receiving real-time feedback and teaching from a faculty member (90%) as an extremely valuable part of the learning exercise highlighting that experiential learning can still be fostered in a virtual format.

**Discussion and Conclusions:** Our virtual simulation with standardized patients proved comparable to a similar in-person learning experience for childhood anxiety, offering a feasible solution to current limitations on experiential learning during the COVID-19 pandemic for this and other topics.

**Take-home Messages:** Experiential learning is still feasible in a virtual format.
#SC29: SC - Students & the COVID-19 Pandemic 2

#SC29.1 How a new role prepared medical graduates for practice during Covid-19: A questionnaire study of Interim Foundation Year 1 (8565)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:00 to 09:15

**AUTHOR(S):**  
Bryan Burford, Newcastle University, UK*  
Gill Vance, Newcastle University, UK  
Tom Gale, Plymouth University, UK  
Karen Mattick, Exeter University, UK  
Anna Goulding, Newcastle University, UK  
Daniele Carrieri, Exeter University, UK

**ABSTRACT:**  
**Background:** In March 2020, in an effort to support a workforce under potential strain from the growing COVID-19 pandemic, UK authorities developed ways for final year medical students to graduate early and start work as qualified doctors. New posts, known as Interim Foundation Year 1 (FiY1), had some limitations, such as being restricted to daytime, weekday working, but had no regulatory restrictions. We were commissioned by the UK General Medical Council to conduct an evaluation of the intervention, aiming to understand the scope of work undertaken by FiY1s during their transition to Foundation Year 1 (F1) in August 2020, and the levels of preparedness for practice and wellbeing of these new doctors.  

**Summary of Work:** The project involved multiple methods between May and December 2020. This paper will primarily describe data from questionnaires completed by F1s, including those who had undertaken FiY1 and who had not, in August and again in October. This questionnaire contained questions relating to trainees overall preparedness for starting F1, and their preparedness for a number of a specific activities, among other measures. In both questionnaires they were asked how prepared they felt on starting F1 - the later questionnaire to see if their perception changed retrospectively after two months in an F1 role.  

**Summary of Results:** Mixed effects regression found that overall perceived preparedness was higher in August for those who had undertaken FiY1 than for those who had not, including those who had worked in other healthcare-related roles between April and July 2020. Patterns of preparedness varied for specific activities, but the trend was for FiY1 to enhance preparedness.  

**Discussion and Conclusions:** The importance of experience - of working in clinical practice - to improve the perceived preparedness of new doctors, has long been argued. Our data suggest that the details of the FiY1 role were sufficient to increase those graduates perceived preparedness, compared to that of those who had worked in other roles, as well as those who had not been working clinically.  

**Take-home Messages:** The interim Foundation Programme initiative enhanced the preparedness of new graduates starting work in summer 2020.
**ABSTRACT:**

**Background:** Sacrifice is the process of relinquishing something of value in anticipation of staying connected with something of higher importance. In medical education, there is controversy about the role of sacrifice. Some consider self-sacrifice as a value to be pursued and cultivated, while others fear that the idealization of sacrifice may harm students by imposing unrealistic expectations. The COVID-19 demanded an extreme sacrifice to the healthcare workforce, including medical students. In the present study, we aim to shed light on how medical students dealt with the call for sacrifice during the COVID-19 pandemic.

**Summary of Work:** This is a qualitative study with a constructivist paradigm. We analyzed audio diaries (5h38 min) and interviews (12h) from eighteen students who participate in the treatment of COVID patients. Data was collected and analyzed iteratively following a grounded theory protocol.

**Summary of Results:** After an initial reaction marked by fear, anxiety, and sadness, students reflected on five intertwined dimensions: Predisposition to Sacrifice, Sense of Competence, Sense of Belonging, Sense of Responsibility and Duty, and Moral Courage. These dimensions ranged in parallel from a lower to higher intensity revealing three patterns of engagement. Students on the higher range felt comfortable in the role of a doctor, strong sense of purpose, transforming the initial negative emotional reaction into pride and fulfillment. On the lower range, students felt extremely uncomfortable, found it meaningless to participate in the COVID effort, arguing that there were no personal/professional gains, only losses. This group felt angry, outraged, and pondered abandoning medical school. In the middle range, students showed an ambivalent attitude to sacrifice, with an internal conflict between feeling morally obligated to help and doubting whether they were ready for this sacrifice. This group felt frustrated and helpless.

**Discussion and Conclusions:** Internalizing self-sacrifice as a value is part of becoming a doctor and may bring a sense of purpose and pride. However, when students do not perceive the sacrifice as meaningful, they suffer, detach and develop identity dissonance.

**Take-home Messages:** Making sense of sacrifice under non-judgmental facilitators guidance may help students soften the burden and nurture their professional identity development.
#SC29: SC - Students & the COVID-19 Pandemic 2

#SC29.3 Holistic Recruitment and Selection in the Time of the COVID-19 Pandemic
(7954)

Date of Presentation: 30 August 2021
Time of Presentation: 09:30 to 09:45

AUTHOR(S):
Elizabeth Elliott, Baylor College of Medicine, USA*
Elissa Love, Baylor College of Medicine, USA
Kathleen Thompson, Baylor College of Medicine, USA

ABSTRACT:
Background: According to the Association of American Medical Colleges, the practice of holistic admissions for student selection has gained popularity, as it permits evaluation of a broader range of criteria important for student success and the selection of individuals with the background and skills needed to meet the demands of a changing health care environment. Having medical providers similar in important dimensions of identity (e.g. race, ethnicity, language, culture, religion) enables communication and improves provider-patient relationships. The practice of holistic admissions requires not only process change, but also specific training for individuals involved in the selection process. The pandemic has strained many usual methods of communication and training, forcing changes to selection processes for programs.

Summary of Work: A top-tier Physician Assistant program housed in a medical school instituted changes to their selection process to include implementing holistic review, which involved updating applicant screening and interview rubrics to include mission-aligned goals. The program also introduced training to systematically create a more objective review of applicant. Information sessions were also converted to an online platform. Recently, the program initiated implicit bias training for all evaluators in the admissions process. During the pandemic, the program created a virtual interview process to include interaction with current students and faculty. The interview process introduced panels that reflected the student body diversity and targeted mission-aligned priorities.

Summary of Results: Pre-holistic data showed the program lacked consistency reaching targeted populations such as those with significant leadership or military experience and those underrepresented in medicine. Aggregate post-holistic data indicated maintenance of high academic metrics, while increasing variety of mission-aligned experiences and attributes to their enrolled applicant pool. Qualitative data suggest virtual interview sessions yielded similar satisfaction with in-person admissions process.

Discussion and Conclusions: This program successfully adapted their selection process to target mission-aligned attributes of applicants. Through holistic review, standardized training, and virtual interviews during a pandemic, the program mirrored the successes of their previous in-person experience.

Take-home Messages:
• Current admissions processes can be leveraged to implement holistic review at any given institution.
• Standardized training of evaluators in the selection process is key.
• Given the pandemic, virtual interviews can be as effective as in-person experiences.
#SC29: SC - Students & the COVID-19 Pandemic 2

#SC29.4 Medical students’ perceptions and motivations in the time of the COVID-19 pandemic (9373)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:45 to 10:00

**AUTHOR(S):**  
*Milton Martins, Faculdade de Medicina da Universidade de Sao Paulo, Brazil*  
Fernanda Arantes-Costa, Faculdade de Medicina da Universidade de Sao Paulo, Brazil  
Maria Eduarda Freitas, Universidade de Pernambuco, Brazil  
Saulo Siqueira, Faculdade de Medicina da Universidade de Sao Paulo, Brazil  
Bianca Amaro, Universidade Federal de Roraima, Brazil  
Patricia Tempski, Faculdade de Medicina da Universidade de Sao Paulo, Brazil

**ABSTRACT:**

**Background:** It has been recommended that medical students work in COVID-19 pandemic as volunteers, however, motivation of students must be evaluated in order to make volunteering a more evidence-based initiative. The aim of our study was to evaluate motivation of medical students to be part of the health team to help in the COVID-19 pandemic.

**Summary of Work:** We developed a questionnaire to evaluate medical students perceptions about participating in care of patients with suspected infection of COVID-19. The questionnaire had twenty-eight statements responded on a 5-point Likert scale. The questionnaire was sent to student organizations of 257 medical schools in Brazil and answered by 10,433 students. We used multinomial logistic regression models to analyse the data.

**Summary of Results:** Statements with greater odds ratios for participation in COVID-19 pandemic were related to sense of purpose or duty (It is the duty of the medical student to put himself at the service of the population in the pandemic), altruism (I am willing to take risks by participating in practical in the context of pandemic), perception of good performance and professional identity (I will be a better health professional for having experienced the pandemic).

**Discussion and Conclusions:** Students with higher sense of duty and altruism were more prone to engage in health care activities during COVID-19. Self-perception of competence was the third factor influencing motivation and the fourth was the desire of learn. Allowing students to participate in pandemic efforts reinforces important values, such as altruism, service in times of crisis, and solidarity with the profession and disposition to serve society. It will probably influence the development of professional values and identity.

**Take-home Messages:** To work in COVID-19 pandemic, medical students are motivated by sense of purpose or duty, altruism, perception of good performance and values of professionalism more than their interest in learning. These results have implications in the developing of programs of volunteering and in the design of health force policies in the present pandemic and in future health emergencies.
#SC29: SC - Students & the COVID-19 Pandemic 2

#SC29.5 The impacts of medical staff involvement in fighting COVID-19 on medical students career commitment (8678)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 10:00 to 10:15

**AUTHOR(S):**  
*Dan Wang, Peking University, China*  
*Hongbin Wu, Peking University, China*

**ABSTRACT:**

**Background:** In late January 2020, due to the outbreak of the novel coronavirus disease 2019 (COVID-19), Hubei Province of China had suffered a shortage of medical resources. Tens of thousands of medical staff from all over China came to the provinces aid. This nationwide prosocial behavior received widespread praise and respect. The role model plays an important role in enhancing students intention to pursue medical careers. But there is limited research to explore the causal effect of the role models prosocial behavior with medical students career commitment.

**Summary of Work:** This paper studied the impact of prosocial modeling of joining the fight against COVID-19 on medical students career commitment. We examined the causal effect and how the effect differs among different medical students. This study used two years of national surveys of medical graduates in mainland China before (2019) and after (2020) the pandemic (N=17,485). The number of medical staff assisted by different provinces to Hubei was taken as the independent variable, and students self-reported commitment to become a doctor after graduation was collected to be the dependent variable. Demographic characteristics and academic performance were included as the control variables. We used the difference-in-difference estimation approach to explore the impact of prosocial behavior of the medical staff on medical students career commitment. To check the validity of our results, the method of randomizing the number of the medical staff was also applied.

**Summary of Results:** The result shows that the more medical staff join the fight, the more students regard doctors as their ideal profession (β=0.086, p<0.001), and the placebo test further demonstrated this. Besides, we found that the effect is significant both in male students and female students (Male: β=0.078, p<0.01; Female: β=0.091, p<0.05). And for students whose dream job in high school was not a doctor (about 35% from our two years survey), this effect was even stronger (β=0.133, p<0.001).

**Discussion and Conclusions:** Prosocial modeling of joining the fight against COVID-19 could increase medical students career commitment. And this effect was even stronger for students whose career planning was vague in early stages.

**Take-home Messages:** Prosocial modeling of joining the fight against COVID-19 could increase medical students career commitment.
#SC29: SC - Students & the COVID-19 Pandemic 2

#SC29.6 Innovative Virtual Challenge Replaces Face-to-face Freshers’ Induction (9377)

Date of Presentation: 30 August 2021
Time of Presentation: 10:15 to 10:30

AUTHOR(S):
Ethan Tamlyn, Leicester Medical School, UK*
Terese Bird, MedRIFT - Leicester Medical School, UK
Jakevir Shoker, MedRIFT - Leicester Medical School, UK
Ryan Jones, MedRIFT - Leicester Medical School, UK
Vanessa Rodwell, MedRIFT - Leicester Medical School, UK
Tiffany Shiao, MedRIFT - Leicester Medical School, UK

ABSTRACT:
Background: Leicester Medical Schools (LMS) pre-pandemic induction weeks included informal team-building activities designed to help introduce freshers to their assigned study groups, e.g. a treasure hunt around campus. With social distancing restrictions preventing this approach LMS asked MedRIFT to design an engaging virtual activity which would retain a team-building element. MedRIFT is a student-staff collaborative which works to integrate new technologies and innovations into the medical school curriculum.

Summary of Work: Using the Google Forms and Google Maps applications we created an online, interactive challenge which students would work together to complete within a given time. This included a virtual treasure hunt which encouraged students to explore the campus (something which had not been possible due to the pandemic). Students completed this activity within MS Teams meetings with their study group peers. These meetings were facilitated either by near-peers, or by the clinical teaching fellows (CTFs) that the students would be working with that year.

Summary of Results: A weighted average comparison of pre and post-workshop questionnaires (n=57), as well as jointly completed group reflections (n=19), revealed an 8% increase in student confidence working in an online environment, as well as a 12% increase in self-perception of group dynamics. Students perceptions of productivity, teamwork and friendship also increased. Students reported finding the workshop enjoyable, and a useful introduction to their group. Many groups mentioned making plans to study together online in the future.

Discussion and Conclusions: This near-peer led, interactive virtual session was well received, both by the students and the facilitators. There is clearly a demand for interactive, team-based virtual activities to stimulate student engagement. Looking back on the project it also represented a real collaborative effort between students and staff. Interaction between students, CTFs, and faculty leadership was open and cooperative.

Take-home Messages: With the immediate future of medical education being focused around virtual environments, this sort of activity could be used to safeguard students from the negative impacts of the pandemic, as well as improve group cohesion in a new socially-distanced learning space. Even following a return to face-to-face or blended learning, the success of this project suggests increased student-staff collaboration would be a welcome development.
#SC30: SC - Student Characteristics

#SC30.1 Medical students’ efficacy to respond to uncertainty: Developing a novel questionnaire (9053)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:00 to 09:15

**AUTHOR(S):**  
Ciara Lee, Department of General Practice and Rural Health, Dunedin School of Medicine, University of Otago, New Zealand*  
Katherine Hall, Department of General Practice and Rural Health, Dunedin School of Medicine, University of Otago, New Zealand  
Megan Anakin, Education Unit, Dunedin School of Medicine, University of Otago, New Zealand  
Ralph Pinnock, Education Unit, Dunedin School of Medicine, University of Otago, New Zealand

**ABSTRACT:**  
**Background:** Clinical uncertainty can be defined as the dynamic subjective perception of not knowing what to think, feel, or do. Maladaptive responses to uncertainty have been linked to negative patient outcomes and to stress, burnout, and anxiety for doctors and medical students. One way to explore responses to uncertainty is by examining self-efficacy beliefs. A component of Social Cognitive Theory, these are the beliefs an individual holds about their capabilities to achieve a goal with the skills that they currently possess within a specific domain of functioning. We aimed to develop a questionnaire to measure medical students efficacy to respond to situations of uncertainty in their learning environments.  

**Summary of Work:** A 29-item questionnaire was piloted with medical students in second, fourth, and sixth year at the University of Otago. For each self-efficacy item, participants were asked to rate their confidence in responding to a situation of uncertainty using a scale of 0 to 100. Data were analysed with descriptive and inferential statistics.  

**Summary of Results:** Four hundred ninety-five participants (69% response rate) completed the questionnaire, which was highly reliable (α = .93). Exploratory factor analysis showed that items formed a unidimensional scale. A multiple linear regression model predicted self-efficacy scores from year of study, age, mode of entry, gender, and ethnicity, F(11,470) = 4.252, p < .001 adj. R² = .069. Year of study did not add significantly to the prediction when second year students were compared with fourth (β=-.093, p = .059) and sixth year students (β = .079, p = .139).  

**Discussion and Conclusions:** The questionnaire, which is highly reliable, is the first self-efficacy scale designed to explore medical student responses to uncertainty. Our questionnaire can be used to build a picture of medical students capability to respond to clinical uncertainty and identify gaps in training or curricula. For example, at our university, the questionnaire showed that confidence to respond to uncertainty does not increase as students progress through their clinical training. In response, we are developing a teaching tool for educators to support learning about clinical uncertainty.  

**Take-home Messages:** We developed and validated a novel self-efficacy questionnaire to explore medical students capability to respond to uncertainty.
#SC30: SC - Student Characteristics

#SC30.2 Impostor Phenomenon in Medical Students: An Experience Precipitated and Perpetuated by the Educational Environment? (8437)

Date of Presentation: 30 August 2021
Time of Presentation: 09:15 to 09:30

AUTHOR(S):
Thomas Franchi, The Medical School, The University of Sheffield, UK*
Nigel Russell-Sewell, Department of Biomedical Science, The University of Sheffield, UK

ABSTRACT:

Background: The term impostor phenomenon was first coined by Clance and Imes in 1978 and is used to designate an internal experience of intellectual phonies. People who experience the phenomenon have intense thoughts of fraudulence regarding their intellect or professional activities. Despite having been researched in a plethora of professional and educational environments, there remains a lack of insight into the phenomenon within medical education.

Summary of Work: This research aimed to better understand the relationship between medical students and the impostor phenomenon. The study was undertaken at The University of Sheffield using a pragmatic approach, integrating quantitative and qualitative data via a questionnaire, focus groups and interviews. The key quantitative measure, the Clance Impostor Phenomenon Scale (CIPS), is a twenty-item scale assessing attributes associated with the phenomenon (scores between 20-100). Statistical analyses were undertaken, which are illustrated by student quotes.

Summary of Results: In total, 191 questionnaire responses were received, and 19 students attended a focus group or interview. The mean CIPS score was 65.81 ± 13.72, indicating the average student had frequent impostor experiences. Of note, 65.4% of students had clinically significant impostor experiences and females scored 9.15 points higher than males on average (p<0.0001). Examination rankings were frequently cited as a major contributing factor to students impostor feelings. Linear regression revealed an increase of 1.12 CIPS points per decile that a student drops down the examination rankings (p<0.05), and ranking in the bottom 10% of students led to a 6.08-point increase (p<0.05). Students quotes underpin the data presented and offer an authentic insight into their experiences.

Discussion and Conclusions: Eight specific recommendations for practice are presented, which are intended to provide medical schools with opportunities for pedagogical evolution and innovation. They relate both to the impostor phenomenon broadly within medical education, and specifically to the impact of examination rankings. This research provides significant advances in the understanding of the phenomenon amongst medical students and highlights critical areas for research.

Take-home Messages: Experiences of the impostor phenomenon are endemic amongst medical students. Identification of precipitating and perpetuating factors allows for the development of targeted mitigation interventions, which will improve educational experiences for medical students who experience the phenomenon.
#SC30: SC - Student Characteristics

**#SC30.3  Do they know that they know? Confidence vs. performance in preclinical Japanese medical students (9658)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:30 to 09:45

**AUTHOR(S):**  
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Vitalii Katsuyama, International University of Health and Welfare, Japan  
Tamerlan Babayev, International University of Health and Welfare, Japan

**ABSTRACT:**

**Background:** Survey-measured levels of confidence in medical students do not appear to correlate well with performance in clinical skills assessments. This study investigates whether self-rated confidence in undergraduate second-year students in a Japanese medical school correlates with subsequent examination performance in a symptoms-based medical English course focused on clinical reasoning and history-taking skills.

**Summary of Work:** Second-year medical students (n=133) completed short surveys measuring self-rated confidence in (a) history-taking skills (10-point scale), (b) medical knowledge (5-point scale), and (c) mastery of medical terminology (10-point scale) related to specific symptoms. MCQ tests were administered at three stages throughout the academic year as summative assessment. A paired samples t-test was used to determine whether self-rated confidence levels differed significantly pre- and post-four-hour series of classes. A Pearson correlation analysis was performed to investigate whether confidence correlated with test performance.

**Summary of Results:** The paired samples t-test revealed significant differences (p < .001) in student confidence before and after receiving lessons on specific symptoms. Average increase in confidence was +1.62 for history-taking skills, +2.03 for medical knowledge, and +2.31 for medical terminology. Positive weak correlations significant at the p < .02 level were identified between post-lesson confidence and test scores at the early (.224 to .358) and mid-term (.234 to .486) assessments. Positive moderate (.266 to .518) correlations significant at the p < .005 level were identified between post-lesson confidence and end-of-course assessment.

**Discussion and Conclusions:** We found that students can accurately assess their learning in certain contexts. Carefully designed surveys measuring confidence regarding specific course content reflect future assessment performance. Our current tool to drive learning and provide learners with feedback is formative assessment which can be resource-intensive. Short, focused and easy-to-execute confidence-based surveys present additional instruments for faculty to identify the struggling student. Moreover, they may act as sources of feedback for faculty to use in their professional development. In the future, we hope to determine if encouraging students to review their confidence-based scores in conjunction with formative assessments can help them identify their learning needs.

**Take-home Messages:** Short surveys designed to measure student confidence may help educators gauge the likelihood of students achieving their learning objectives.
Music as an active methodology to develop emotional intelligence in medical students (9071)

Date of Presentation: 30 August 2021
Time of Presentation: 09:45 to 10:00

AUTHOR(S): Marcelo Rivas, Rio de Janeiro State University (UERJ) - Campinas State University (UNICAMP), Brazil*  
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Debbie Jaarsma, Center for Educational Development and Research in the Health Professions UMCG Groningen Netherlands, The Netherlands  
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ABSTRACT:

Background: Emotional experiences are inherent to the medical practice and little attention is devoted to this topic in medical schools. Music is an educational resource with potential to build new meanings through the arousal of varied emotions. The purpose of this study was to investigate how music affects the identification of emotions by medical students in the context of a learning activity to foster Emotional Intelligence (EI).

Summary of Work: We invited 10 pre-clinical students to join a 2 hour workshop using music to approach the first dimension of EI: perceiving emotions. The activity had 4 steps: (1) before the workshop each student sent the name of one song they found emotional to the facilitator; (2) at the beginning of the workshop, the facilitator played the songs and invited each student to share with the group the emotions evoked by the songs; (3) the facilitator played songs to function as metaphors for the emotions evoked by the medical practice; (4) facilitator and students engaged in a discussion about how distinct emotional perceptions can be, and the role of emotions of doctors and patients in medical encounter. The workshop was audio and video taped and students recorded an individual audio answering the question: What was the impact of this activity in your personal and professional development?. The audios were transcribed, and a thematic analysis was performed by the researchers.

Summary of Results: The mean age of students was 22.6±2.1y with female predominance (70%). The music audition was effective in arousing emotions in the students and the metaphors were efficient in allowing a discussion about the role of emotions in the medical practice. The main codes identified on thematic analysis of the interviews were: emotional arousal, reflective attitude and interaction. Students understood the importance of emotions for the clinical communication.

Discussion and Conclusions: This music-based pedagogical activity enabled students to identify their own emotions and recognize other emotional reactions, central dimensions of EI. Further studies are needed to explore the role of music in other dimensions of EI.

Take-home Messages: The facilitator took advantage of students’ emotional experiences to anticipate the emotional challenges related to clinical practice.
#SC30: SC - Student Characteristics

##SC30.5  Medical students’ usage of effective learning techniques (8850)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 10:00 to 10:15

**AUTHOR(S):**  
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**ABSTRACT:**  
**Background:** Medical students have to acquire large amounts of knowledge during their study course and effective learning techniques may facilitate their learning process. Purpose of this study is to analyse the preferred learning techniques of junior and advanced medical students and how these learning techniques are related to perceived learning difficulties.  
**Summary of Work:** In 2020, we conducted an online-survey with medical students of the undergraduate, competency-based curriculum of medicine at the Charité - Universitätsmedizin Berlin. We chose 10 learning techniques of high, moderate and low utility introduced by Dunlosky et al. 2013 and asked medical students for their preferred usage of those techniques with a 5 Point Likert Scale. We then compared the utility of the learning techniques with preferences of our students. We analysed differences of usage between junior and advanced learners. Additionally we analysed how the learning techniques predict perceived difficulties of students.  
**Summary of Results:** A total of 605 medical students responded (18% response rate, 406 female, age M = 24 SD = 4). Students stated to use three learning techniques the most (75% agreement each): Highlighting (low utility), Self-explanation (moderate utility) and Practice Testing (high utility). The least used learning technique (24%) is Interleaved Practice (moderate utility). Only 45% of our medical students use the highly useful learning technique Distributed practice. Compared to junior students (year 1 to 3; M = 3.65, SD = .71) a t-test indicated that advanced students (year 4 to 6; M = 3.52, SD = .73) showed a significantly lower use of low utility learning techniques (t(603) = 2.15, p < .05). High scores of the use of moderate utility learning techniques significantly predicted lower difficulties during studies (β = -.13, t(599) = -3.21, p < .01).  
**Discussion and Conclusions:** Students use a wide range of learning techniques of low, moderate and high utility. They could benefit from knowing about and using highly useful learning techniques to facilitate their learning. Faculties should inform their students about effective learning.  
**Take-home Messages:** Faculties should support students learning by introducing them to useful learning techniques and create learning opportunities that utilize those techniques.
ABSTRACT:
Background: Self-Regulated Learning (SRL) is a core attribute of health professional development. Nursing students often do not automatically use or develop SRL strategies required for effectively navigating their learning journey in the dynamic and complex clinical environment. Reflection is essential component of SRL and lifelong learning. This study aims to investigate the effects of using guided Daily Reflective Journal (GDRJ) with weekly feedback in enhancing nursing students clinical SRL, comparing to group reflection, and explore how students develop SRL in clinical environment.

Summary of Work: A quasi-experimental exploratory pre and posttest study was implemented on 49 final-year nursing students posted to an acute hospital, randomly divided by cohort into two groups. Group 1 (n=24) received GDRJ with weekly feedback. Group 2 (n=25) undertook group reflection facilitated by clinical instructors (CIs). Students SRL at work, level of reflective journal, self-efficacy level, skill performance, and satisfaction were measured and analysed using SPSS Version 25. Students experience and perception were explored using questionnaire and analysed using thematic analysis.

Summary of Results: Comparing to group 2, group 1 participants reported a significantly higher improvement in SRL at work, reflective journal writing, self-efficacy, skill performance, and satisfaction rate end of posting. Four common themes were identified in both groups, three unique themes emerged only from group 1: enhanced SRL; importance of feedback and role of clinical tutor; changed in perception and acceptance of GDRJ.

Discussion and Conclusions: This study model targeted at clinical challenges encountered by students including nothing to reflect, combined GDRJ and weekly feedback to engage nursing students in the self-assessment and feedback process, built a contextualised SRL environment, which significantly enhanced nursing students reflective practice and clinical SRL. The scaffold by CIs using GDRJ and timely validated-focused feedback enhanced cognitive and metacognitive development as well as skill performance.

Take-home Messages: Students need and welcome strategically designed GDRJ with weekly feedback. Clinical educators need to develop strategies that based on learners characteristics and local context to teach students not only domain-specific knowledge and skills, but also develop their metacognitive and SRL skills (learn to learn) such as reflective practice, communication skills, use of multi-sourced feedbacks feedback in clinical environment to optimise clinical learning outcome.
ABSTRACT:

Background: Since the emergence of COVID-19, there has been a rise in video call conferences. However, often they do not feel as immersive. Conferences, where attendees interact as avatars in a virtual world (VW), are not widely used, and their effectiveness is under-researched. Academic conferences are essential settings for medical education because they allow sharing of research. Therefore, evaluating the experiences and effectiveness of avatar conferences is necessary to ascertain whether this is an effective method for hosting conferences.

Summary of Work: Aim: What are the experiences of individuals as avatars at a virtual medical conference? Objectives: What and why did individuals have a particular avatar experience at the conference? - Are VWs an effective vehicle to deliver conferences? This study will look at the Association for Medical Education in Europe (AMEE) 2020 International Conference. A mixed-method approach was used, and a sequential explanatory design was adopted. 604 survey participant responses underwent thematic analysis using NVivo to identify themes and tailor the interviews. The sample population underwent purposive sampling, where individual, semi-structured interviews took place. Eligibility criteria for both the survey and interview were those that attended the AMEE conference.

Summary of Results: Both conference attendees and speakers had a mix of positive and negative opinions and experiences at the AMEE conference. Of the survey responses, 30% rated the conference as okay, 37% as good and 14% as excellent. Interestingly, 31% of participants said it was challenging to interact with other delegates, which may be problematic, considering this is a crucial objective of conferences.

Discussion and Conclusions: Negative experiences at the conference were often due to technical issues, or difficulties navigating the avatar. Each participant had an interesting relationship with their avatar; some felt attached and treated their avatar like a real person (changing their clothes every morning). Some individuals complained about the lack of avatar diversity. As a whole, there was a mix of opinions regarding the effectiveness of using VWs as a platform for conferences.

Take-home Messages: The effectiveness of VWs as a vehicle for delivering academic conferences and the avatar experience of individuals is dependent on factors such as technology, representation and accessibility.
Date of Presentation: 30 August 2021
Time of Presentation: 09:15 to 09:30

AUTHOR(S):
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Gordon Tin-Chun Wong, The University of Hong Kong, Hong Kong S.A.R.
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ABSTRACT:
Background: University of Hong Kong Medical Faculty (HKUMed) aimed to modernise instructive methods, empower learners and provide new content for tomorrows practices. HKUMed adopted a blended learning approach in the pre-clinical curriculum by incorporating instructional videos with knowledge-check assessments and learning feedback. Students continually engage with content, peers and teachers through in-person active learning sessions and online forum discussions. We evaluated students experience and study process to assess the impact of these initiatives.

Summary of Work: This study compares students doing blended learning (Year 1) and traditional learning (Year 2) using a mixed-methods approach. Revised study process questionnaire (R-SPQ-2F) was used to assess students surface/deep learning at the start and end of the year. Learning experience (LE) questionnaire was administered (18 items) over the domains of learning engagement (6 items), outcomes of learning approach (5 items), and appropriateness of blended learning approach (7 items). Twelve in-depth interviews were performed to understand the context of Year 1 students responses.

Summary of Results: The R-SPQ-2F analysis indicated Year 1 students (N=65) maintained their deep approach to learning but Year 2 students (N=24) became neutral across the academic year. The LE questionnaire showed Year 1 students having deeper interest in their subject (p<0.005), increased autonomy in learning (p<0.02), a more positive perception to workload (p=0.005) and feedback to learning (p<0.005) compared to Year 2 students. No significant difference was observed for both cohorts perceived development and application of skills and knowledge. However, peer interactions from e-learning were significantly lacking. In-depth interview responses correlated with the quantitative data.

Discussion and Conclusions: Interview analysis revealed that students felt a sense of isolation through e-learning but online interactions in large groups were not well-accepted. Suggestions were made to improve ease of forum accessibility and create participation incentives. E-learning also enables self-directed, deep learning when empowered to learn at own pace and practice although students learning can be further facilitated with clearer instructional scaffolding and integrative hands-on training.

Take-home Messages: The blended learning initiatives enabled self-directed, deep learning. E-learning, however, poses a challenge for students to build a sense of community. HKUMed is further partnering with students to build a mutually supportive learning community to enhance online wellbeing.
#sc31: SC - Teaching & Learning Online Learning

#sc31.3 The Utility of Novel Set-ups for a Virtual Tutorial Series in the Early Years (9466)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:30 to 09:45

**AUTHOR(S):**  
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**ABSTRACT:**  
**Background:** The Medical Education Society (MedED) at Imperial College School of Medicine has previously focused its support solely on clinical year students. This year we launched a monthly virtual tutorial series for first year students aimed at a module newly introduced in the 2019/2020 academic year. Roughly 150-200 (out of 409) Year 1 medical students consistently attended each lecture, making it the best-attended student-led lecture series the society has held.

**Summary of Work:** The objective of this study was to determine retrospectively the effectiveness of remote teaching in comparison to in-person teaching, and its effect on student engagement. Although limited, literature shows the lack of engagement with in-person lectures. In response to this, each tutorial in our series featured an older year student dedicated to answering factual questions in the online chat. This was the first time MedED had trialled this. Online feedback forms were collected following each tutorial to date (3 out of 8). These included Likert-type rating scales, asking candidates to state how much they agreed to different propositions.

**Summary of Results:** 698 feedback forms were collected in total. 53.8% of students found attending remote lectures more useful than attending on-site, with 31.8% remaining neutral. The majority of attendees (57.6%) agreed that they felt more confident asking questions in a virtual environment, rather than in-person, while 27.5% remained neutral. The presence of an older student answering questions in chat was well-received, with a large majority of students agreeing (93.0%) that it was useful.

**Discussion and Conclusions:** From consistent attendance and feedback results, this novel method of online teaching increases student engagement. Students were more confident in asking questions, further facilitated by the presence of the older student in chat. The high volume of neutral responses can likely be traced back to participants who have not attended large-audience, in-person lectures because this year's first-year medical students course has been entirely remote due to the coronavirus pandemic. Therefore in future, data should be compared to when the medical school resumes in-person teaching.

**Take-home Messages:** Students found useful the presence of an older medical student dedicated to answering factual questions in chat. They also felt more confident asking questions online than in-person.
Using Podcasting to Deliver Living Cases in Gerontology Education: An Outcome Evaluation of the GeroCast Study (9082)

Date of Presentation: 30 August 2021
Time of Presentation: 09:45 to 10:00

AUTHOR(S):
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Klodiana Kolomitro, Queens University, Canada
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Mohammad Auais, Queens University, Canada

ABSTRACT:

Background: Healthcare students, including physiotherapy (PT) students, are less interested in working with seniors and may be under-prepared to deliver efficient services to this population. A novel way to improve students attitudes towards seniors is to present living case studies via podcasting. The GeroCast project created living case studies and delivered them using podcasting technology to support the learning experience of PT students in a professional Master gerontology course. Each podcast episode focused on one health-related topic and included a background, a senior sharing their relevant experience, and reflection questions that allowed students to apply their clinical skills and knowledge to the seniors challenging healthcare scenarios.

Summary of Work: We evaluated the GeroCast project to assess its usability, feasibility, and value. Sixteen case-based podcasts with different topics were created from interviews with seniors. A cohort of PT students was provided access to the podcasts and invited to complete an online questionnaire on their experience with podcasts.

Summary of Results: Participants included 67 PT students (69% female, mean age = 24.6 years). Among responders, 89% indicated that listening to the podcasts increased their recognition of the critical issues local seniors face; 86% indicated they preferred the podcast format over traditional case studies; and 91% found podcasting to be an effective learning tool to enhance their understanding of how to best care for seniors in clinical settings. Thematic analysis of the data indicated that students valued learning about the lived experience of seniors. Particularly, students felt it challenged their assumptions and facilitated reflection on experiences from different perspectives. Students reported that hearing a real-life case study was engaging and provided a sense of connection with the case.

Discussion and Conclusions: Overall, students enjoyed learning via podcasting compared to traditional learning approaches and found it a valuable way to better understand issues facing seniors. Thus, delivering living case studies using podcasting may be a feasible, inexpensive, and effective method to improve healthcare students attitudes towards the senior population.

Take-home Messages: A case-based podcast is a promising tool to deliver gerontology education to healthcare students.
Training Medical Students to Understand the Impact of Poverty Using A Virtual World Poverty Simulation (7915)

Date of Presentation: 30 August 2021
Time of Presentation: 10:00 to 10:15

AUTHOR(S):
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ABSTRACT:
Background: Medical students receive insufficient training to understand the impact of poverty on health. Live poverty simulations have been found to improve knowledge and perceptions. However, require multiple personnel, a large space, and significant time to complete. Virtual worlds can support problems found in conventional learning methods, such as time constraints, and require fewer resources. We developed a 60-minute VWPS to train first-year medical students (MS1) to understand the impact of poverty.

Summary of Work: The VWPS featured 5 families experiencing poverty and 6 agencies offering resources. MS1 played the role of a family member. Service agencies were staffed by a faculty facilitator. To develop the virtual world, we partnered with Virtway, a platform that provides virtual 3D experiences. 160 MS1s participated and voluntarily completed a pre-and post-survey assessing knowledge and attitudes about poverty.

Summary of Results: 283 pre- and post-surveys were completed and results were compared with t-tests. MS1 reported statistically significant improvements in knowledge of resources available for people experiencing poverty (t(281) = 3.1, p = 0.002), agreement that students should explore patients social needs (t(281) = 2.35, p = 0.02) and agreement that students should connect patients to resources ( t(281) = 2.21, p = 0.03). MS1 with no experience either working with patients in poverty or experiencing poverty personally reported the greatest sense of being there during the simulation (p<.001) and were more likely to report the simulation adds value to their training (p<.001).

Discussion and Conclusions: It was feasible to develop and implement a VWPS for MS1. Once developed, the resources needed to run were minimal compared to live simulations. Strengths include ease to incorporate into the curriculum and positive impact on knowledge and attitudes towards poverty. In times of COVID19 pandemic, it provides an engaging and safe environment to teach about poverty. Data is limited to self-reported changes in knowledge and attitudes.

Take-home Messages: It is important to include MS and community organizations during the development of experiences that teach about poverty. The acceptability and impact on learning using poverty simulation will vary depending on the students prior experiences and exposure to poverty. It is important to tailor the learning intervention to diverse learners.
#SC31: SC - Teaching & Learning Online Learning

#SC31.6 Harnessing the Brightspace virtual learning environment to promote the development of metacognitive skills in Veterinary undergraduates (9775)

Date of Presentation: 30 August 2021  
Time of Presentation: 10:15 to 10:30

AUTHOR(S):  
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Crystal Fulton, University College Dublin, Ireland  
James Matthews, University College Dublin, Ireland  
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ABSTRACT:  
Background: Metacognition refers to self-awareness of learning, encompassing ability to self-monitor, control and purposefully direct approaches. Metacognitive skills are fundamental for medical professionals with evidence linking metacognition with improved academic achievement and critical thinking. Education strategies that foster metacognitive development would offer significant impact. The virtual learning environment (VLE) provides a conduit to influence learning outside standard class time in a way achievable with realistic levels of staff intervention.

Summary of Work: Teaching Fellows from varied disciplines undertook a mixed methods study investigating leverage of the VLE to support student metacognition. Learning interventions were developed informed by work of the Education Endowment Foundation who developed recommendations for the translation of research on teaching metacognition into educational practice. The interventions were mapped to generate a generic Metacognition Design Framework using learning design sequences adapted from Oliver (1999). This framework was trialed in three case studies: in each a context-specific intervention was designed and delivered within Brightspace guided by a Metacognitive Design Sequence adapted from the overall framework. The Metacognitive Awareness Inventory and self-efficacy for learning sub-scale (Motivation for Learning Questionnaire) were administered pre- and post-intervention with qualitative data gained from reflections, open-ended questions and focus groups with students and key stakeholders.

Summary of Results: This Veterinary case study delivered a blended module to 118 students; 53 enrolled on the study: 40 completing Pre- and Post-Questionnaires, 17 attended focus groups. There were significant increases in students metacognitive skills, both metacognitive knowledge (0.43: Cohens-d) and metacognitive regulation (0.61), and self-efficacy for learning (0.46). Qualitative data revealed that students perceived a positive impact on their learning, commenting on increased strategy use and regulation of their learning. Stakeholders referred to a transformative and lasting impact on students learning experience and recognised the value of the Metacognition Design Framework for wider application of the approaches.

Discussion and Conclusions: It is possible to have tangible impact on student learning and the development of metacognitive skills using learning strategies orchestrated within the VLE using learning design sequences.

Take-home Messages: Metacognition is a key professional competency for effective lifelong learning. This study offers insight into the potential for VLE-based interventions to aid metacognitive development using a targeted framework.
#SC32: SC - Student Stress and Response to COVID-19

#SC32.1   Dealing with the COVID-19 pandemic as medical students: Ongoing stress symptoms and experiences in first lockdown (8690)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:00 to 09:15

**AUTHOR(S):**  
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Manimaran Jayamurthy, University of Bristol, UK

**ABSTRACT:**

**Background:** The coronavirus pandemic is a highly stressful event that has affected students throughout the world. Medical students are likely to be especially at risk of severe stress as they have been subject to both standard stresses such as the interruption of education and unique healthcare-related stressors.

**Summary of Work:** We conducted a cross-sectional survey of University of Bristol clinical students assessing their experiences during the first UK lockdown (University of Bristol Ethics Committee Approval Ref. 112002). The survey consisted of a mixture of Likert scales and free text. We also assessed their current levels of stress with regards to the pandemic using the Impact of Event Scale-6 (IES-6) a validated questionnaire used to assess PTSD and stress symptoms which has been used to assess response to Covid.

**Summary of Results:** (preliminary results): 80 students completed the questionnaire. Most students returned home (78.6%). The majority (82.9%) of students found receiving their education online more difficult, and their learning environment less suitable for work (54.6%). Although a significant minority of those returning home (25%) found their work environment better. Most students (84.3%) regarded Covid as a stressful life event, with a large amount (67.1%) experiencing significant post-traumatic stress symptoms. A significant minority (27.1%) reported that in the previous week they had been extremely bothered by the pandemic affecting their concentration.

**Discussion and Conclusions:** These results suggest that the pandemic is having a severe and ongoing impact on medical students’ stress levels. Our result is in the same region as results from China which suggested around 50% of students suffered from significant stress symptoms. These symptoms are reported to be causing ongoing and significant disruption to work. One source of stress is the change to education which is widely reported as being more difficult. Being vigilant for the emergence of mental health disorders now and when the pandemic finishes is key.

**Take-home Messages:** The Covid-19 pandemic is an ongoing highly stressful event causing clinically important stress symptoms. We should be vigilant in our efforts to support student mental health.
#SC32: SC: Student Stress and Response to COVID-19

#SC32.2 How consistent are students in their performance levels throughout their studies? Performance clusters help with counselling and targeted performance feedback (9321)

Date of Presentation: 30 August 2021  
Time of Presentation: 09:15 to 09:30

AUTHOR(S):  
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ABSTRACT:  
Background: Do students stay in a performance cluster over several semesters or even over the entire duration of study? Are there students that are placed in different performance clusters regarding their summative and formative performance? Such data can be used to identify if and when counselling interventions make sense.  
Summary of Work: Performance data since 2003 is available for the Model degree program of medicine in Aachen. The data was sorted longitudinally according to summative and formative performance data. Clusters were identified and lead to a division of of students who have remained constant in their performance levels and students whose performance changed significantly over time.  
Summary of Results: We were able to identify clusters of students whose performances were constant and those that changed. The constant clusters can only be identified from the second year onwards. Among the constant clusters we were able to define three subgroups, while in the variable clusters we were able to define two subgroups. With the help of the Progress Test Medicine data, we were able to identify prediction patterns that inspired us to create groups with special counselling needs.  
Discussion and Conclusions: After isolated targeted counselling of students in different performance clusters some students improved, some not. The effectiveness of guidance based on such clusters has yet to be exhaustively measured. The improvement of guidance through clustering is mostly speculative at this stage although very promising.  
Take-home Messages: An analysis of performance data can help to pool resources in student counselling by focusing advising/feedback efforts on specific students.
# Sc32: SC - Student Stress and Response to COVID-19

## Sc32.3 Impact of Anxiety on Students' Performance in Computer-Based Formative Assessments (8781)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 09:30 to 09:45

**AUTHOR(S):**  
Abida Shaheen, Shifa College of Medicine, Shifa Tameer-e-Millat University, Pakistan*  
Fahad Azam, Shifa College of Medicine, Pakistan

**ABSTRACT:**

**Background:** The presence of stress may affect the medical students negatively thereby compromising their learning experiences and outcomes. Assessments may add extra pressure on students and lead to lack of concentration, reduced cognitive function, psychological and physical symptoms affecting their performance in assessments. The present study aimed to determine the impact of Computer Based Test (CBT) anxiety on the performance of medical students in the formative modular assessments.

**Summary of Work:** A cross-sectional study was conducted during April-May 2020 in Year 3 medical students at Shifa College of Medicine, Islamabad Pakistan. Three consecutive online formative assessments were conducted in the Neurosciences-Psychiatry module. Anxiety was measured using a validated (Nist and Diehl) questionnaire before, during and after the formative assessments. Mean score of 10-19 indicated no anxiety, 20-35 showed presence of healthy anxiety while 36-50 depicted severe anxiety. Students t-test, ANOVA, repeated measure-ANOVA, Pearsons correlation, linear-regression and Chi-square tests were applied for comparison between different groups.

**Summary of Results:** Percentage of female students was 57% compared to male students (43%). Anxiety scores were significantly higher before assessment compared to scores during and after assessments (p<0.001). Anxiety scores in females were significantly higher compared to male students just before assessments (31.87±7.91 vs 26.15±6.10, p=0.002) and immediately after assessments (27.57±7.83 vs 23.56±7.27, p=0.033). Females with low anxiety scored better in comparison to females with high anxiety (p=0.03). Anxiety assessed during assessment in female students has a significant negative correlation with performance in assessments (R=-.279, β -.327, Adjusted r2=0.57, p=0.05).

**Discussion and Conclusions:** We conclude that high levels of anxiety affect the performance of female students more in comparison to male students which should be further investigated. Frequent formative assessments, counselling and better communication with students may reduce anxiety and help improve their performance. An insight into the factors leading to increased anxiety ultimately affecting the performance of students can help improve educational outcomes and can create possibilities for developing individualized methodologies for assessments.

**Take-home Messages:** Future studies are needed to evaluate the effect of different technologies and gadgets on test anxiety and performance. Studies should be conducted in students in all academic years of medical school in different settings.
#SC32: SC - Student Stress and Response to COVID-19

#SC32.4   Self-efficacy and its relationship with anxiety and depression in medical students (9106)

Date of Presentation: 30 August 2021
Time of Presentation: 09:45 to 10:00

AUTHOR(S):
Mariana Siqueira Campos de Deus, Federal University of Goiás, Faculty of Medicine, Brazil*
Vânia Meira e Siqueira Campos, Federal University of Goiás, Faculty of Medicine, Brazil
Maria Amélia Dias Pereira, Federal University of Goiás, Faculty of Medicine, Brazil
Alessandra Vitorino Naghettini, Federal University of Goiás, Faculty of Medicine, Brazil

ABSTRACT:
Background: Medical students face stressful challenges throughout the course, like heavy workloads, meeting high standards and dealing with success and failure as synonyms of life and death. A high prevalence of mental disorders has been described in this population. It’s possible that personality aspects influence on coping strategies with such challenges. Therefore, this study aimed to evaluate the association between self-efficacy beliefs and anxiety and/or depression in medical students.

Summary of Work: A cross-sectional study was conducted among 315 medical students of a public university in Brazil. Responses were collected by an online self-administered survey, demanding social-demographic informations and containing questions from the General Self-Efficacy Scale (GSE), Generalized Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9). Fishers exact test was used to evaluate the association between the variables.

Summary of Results: The mean age of respondents was 23.35±3.78 years old and 55.2% were male. The great part of the students belonged to clinical years (3 - 6 year) (58.7%), whereas 41.3% belong to basic years (1 - 2 year). The prevalence of anxiety, of depression and of low self-efficacy were, respectively, 38.4%, 47.3% and 44.1%. Anxiety and depression rates were higher in the low self-efficacy group, respectively, 57.9% and 59.7%. Therefore, low self-efficacy was positively associated with anxiety (p < 0.001) and depression (p < 0.001).

Discussion and Conclusions: We found a high prevalence of low self-efficacy beliefs, which was associated with anxiety and depression in medical students. As self-efficacy influences in how one deals with stressful situations, in one’s perception of achievements and in one’s motivation, it is possible that low self-efficacy beliefs influence on the development of anxiety and depression in that population. Therefore, self-efficacy should be accessed in the management of students with mental disorders.

Take-home Messages: There is a high prevalence of anxiety and depression associated with low self-efficacy in medical students. Therapeutic approaches could encourage high self-efficacy and should be implemented in the medical course.
#SC32: SC - Student Stress and Response to COVID-19

#SC32.5 Predicting medical students’ achievement and analyzing related attributes with artificial neural networks and Naïve Bayes (8361)

Date of Presentation: 30 August 2021
Time of Presentation: 10:00 to 10:15

AUTHOR(S):
Melchor Sanchez-Mendiola, National Autonomous University of Mexico (UNAM) Faculty of Medicine, Mexico*
Diego Monteverde- Suárez, McMaster University, Canada
Patricia González-Flores, UNAM, Mexico
Roberto Santos-Solórzano, UNAM, Mexico
Iurma Zavala-Sierra, UNAM, Mexico
Manuel García-Minjares, UNAM, Mexico

ABSTRACT:
Background: Dropout and slow academic progress are persistent problems in medical education in Mexico, and they have greater incidence during the first year of medical school. Identifying at-risk students early and analyzing their attributes is necessary to implement interventions throughout the program and increase its efficiency. Prior academic achievement, psychological factors and school where students completed pre-medical studies are variables related to academic performance. Although educational data mining (EDM) has been used successfully to predict students performance in other disciplines, there is a need to explore its use in medical education.

Summary of Work: Our study compared two different EDM methods, artificial neural networks (ANN) and Naïve Bayes (NB), to predict students academic success at the end of the first year in an undergraduate medical school program, and identified their attributes relevant to prediction. Data from 7,976 students in the 2011-2017 cohorts of the National Autonomous University of Mexico (UNAM) Faculty of Medicine program were collected and analyzed.

Summary of Results: ANN and Naïve Bayes showed similar predictive results (greater than 70% precision, sensitivity and specificity). Although ANN performed slightly better, NB made it possible to analyze the predictive value of individual variables and confirmed students prior knowledge as the most important attribute for prediction. Variables related with the school where students completed pre-medical studies had greater influence in predicting irregularity (students who failed one or more of required courses), while those regarding previous knowledge in mathematics, physics and Spanish, in predicting regularity (students who completed all the required courses). Full description of the variables: https://predacademicachv.wixsite.com/results.

Discussion and Conclusions: ANN and NB are useful for predicting students academic achievement in medical education; Naïve Bayes can also identify related factors. Further research is needed to study if the curriculum of their pre-medical school, teacher expectations of students success (Pygmalion effect), or bias in the model could explain the differential performance of irregular students.

Take-home Messages: The relevance of medical students prior knowledge as predictor of academic success showcases the need for early identification and interventions. EDM is useful to predict medical students academic performance and can inform the design of early identification strategies and educational interventions.
#W30: Workshop 30

#W30  How to effectively teach medical students when the patient is remote (8051)

Date of Presentation: 30 August 2021  
Time of Presentation: 9:00 to 10:30

PRESENTER(S):  
Roaa Al-bedaery, St George’s University Hospital, UK  
Umar Chaudhry, St Georges University Hospital, UK  
Judith Ibison, St Georges University Hospital, UK  
Laura Valle-Ogunro, St Georges University Hospital, UK  
Angela Kubacki, St Georges University Hospital, UK

ABSTRACT:  
Background: The rapid and significant increase in the number of medical consultations being conducted remotely (including video and phone) has affected how clinical medical students are taught, potentially reducing learning experiences. As a response, we reviewed the evidence base for effective remote clinical teaching and delivered faculty training for clinicians during the Covid-19 pandemic. In this workshop we will provide a framework for teaching when the patient and/or student is remote, and offer activities for clinicians to reflect on how teaching in their own specialty is affected. This enables appreciation of all the learning potential in remote consultations for medical undergraduates.  
Who Should Attend: The session will be beneficial for clinicians and all medical educators who are using remote consultations for teaching and learning purposes.  
Structure of Workshop:  
1. Introduction to concepts (interactive lecture) 10 min  
2. Remote video and telephone consultations: differential learning and structuring the teaching session (lecture) 10 min  
3. Interactive activity: participants can choose to plan a bespoke session or a model session based on undergraduate clinical learning outcomes (group work) 15 min  
4. Choosing deliverable curriculum learning outcomes for remote consultations: more than you may imagine? (lecture) 10 min  
5. Teaching models: history-taking skills and feedback (lecture) 10 min  
6. Demonstration with a modelling exercise including a doctor, a patient and a medical student managing a clinical scenario. The modelling exercise aims to demonstrate the practicalities and teaching opportunities offered during remote consultations, with explanatory teaching de-briefs (modelling exercise, video recording, interactive pauses for group feedback) 15 min  
7. Shared frontline experiences of teaching and learning (discussion) 10 min  
8. Outline of useful e-resources/references  5 min  
9. General discussion and questions 5 min

Intended Outcomes:  
• To outline and model evidence-based and effective teaching methods for remote consultations  
• To describe and demonstrate the strengths and limitations of teaching medical undergraduates remotely, and approaches to mitigate inherent challenges  
• To facilitate attendees in structuring remote teaching sessions personal to their educational practice.  
Level: Introductory
#W31: Workshop 31

#W31 Educational scholarship: Advocating for recognition for healthcare professions educators. A joint AMEE / ANZAHPE workshop (9815)

Date of Presentation: 30 August 2021  
Time of Presentation: 9:00 to 10:30

PRESENTER(S):  
Jennifer Cleland, Lee Kong Chian School of Medicine, Singapore  
Chinthaka Balasooriya, University of New South Wales, Australia  
Trevor Gibbs, AMEE, UK  
Tim Wilkinson, University of Otago, New Zealand

ABSTRACT:  
Background: Until very recently, there has been no clear and accessible definition of scholarship in health professions education. This has posed many challenges to the incorporation and recognition of scholarship within the career progression pathways of health professions educators. The significant role of educational scholarship in enhancing student learning and in lifting institutional educational quality, has also often been undervalued. Within this context, institutions continue to struggle to set fair and reasonable expectations and guidance for promotions and tenure for those whose focus is education. Drawing on AMEE Guide number 142 “Redefining Scholarship for Health Professions Education” (Education management series), in this workshop we will:  
• Reflect on the issues of being recognised as an educator,  
• Consider the breadth of scholarship activities including scope of contribution and influence,  
• Discuss effective ways of engaging with scholarship.  
• Discuss what might be considered as evidence to be recognised as a HPE scholar

Who Should Attend:  
Structure of Workshop: This workshop will follow a flipped classroom model. Colleagues who register for the workshop are asked to read the AMEE Guide 142 in advance: https://doi.org/10.1080/0142159X.2021.1900555. We will use vignettes and examples as the basis for small group discussions.  
The workshop will be presented by Jennifer Cleland (Singapore), Tim Wilkinson (New Zealand), Trevor Gibbs (UK) and Chinthaka Balasooriya (Australia).

Intended Outcomes: At the end of this workshop, participants will be able to:  
• Describe the differences between scholarly teaching, scholarship of teaching and learning, and scholarship.  
• Recognize that scholarship, and evidence of scholarship, is about much more than academic publications, grant success and student ratings.  
• Articulate how they engage with, and document, scholarship in health professions education.

Level:
#W32: Workshop 32

#W32  Going digital! Using smartphones to collect audio diaries in health professions education research (8070)

Date of Presentation: 30 August 2021
Time of Presentation: 9:00 to 10:30

PRESENTER(S):
Wieke van der Goot, Martini Hospital & University of Groningen, University Medical Center Groningen, The Netherlands
Miriam Wijbenga, Amsterdam University of Applied Sciences & Maastricht University, The Netherlands
Anique Atherley, Maastricht University & University of Western Sidney, The Netherlands & Australia
Robbert Duivivier, Parnassia Psych. Institute, The Hague & University of Groningen, University Medical Center Groningen, The Netherlands
Diana Dolmans, Maastricht University, The Netherlands
Debbie Jaarsma, University of Groningen, University Medical Center Groningen, The Netherlands

ABSTRACT:
Background: Using audio-diaries as a research method in qualitative research offers educational researchers an effective way to capture individual experiences and reflective thoughts of participants in the workplace. There are challenges with using audio-diaries especially if using smartphones to capture these participant submissions. Challenges largely surround data management and ensuring participants privacy (Atherley et al., 2020). Using audio-diaries through smartphones to collect qualitative data is even more relevant due to the global Covid-19 pandemic and the subsequent turn to virtual data collection. On the flipside, digital methods means less opportunities for researchers to physically engage with participants. Therefore, this workshop will focus on opportunities and challenges of applying audio diaries as a research method as we explore what researchers can do to ensure optimal research processes. Through sharing their practical and scientific experience with this topic, the workshop moderators and participants will co-produce lessons learnt for effective use of audio diaries in health professions education research (HPE).

Who Should Attend: This workshop is aimed at anyone involved in qualitative research within HPE, with an interest in capturing workplace-based experiences of individual participants through audio diaries.

Structure of Workshop: In this workshop, we will build on the participants’ experiences with and knowledge of audio diaries as a qualitative research method. After a plenary introduction the participants will engage in three different topics in small groups following a round robin design. Regarding collecting audio diaries using smartphones, small groups will discuss 1) the use of smartphones in HPE, 2) examples of participant instructions, and 3) data collection and privacy issues. A final group discussion will allow for synthesisation of outcomes and conclusion of key findings.

Intended Outcomes: After this workshop, participants will be able to:
- identify and understand advantages and challenges of using smartphones to collect audio diaries
- undertake steps to protect participants’ privacy
- make informed decisions whether and when audio diaries are a suitable research method

Level: introductory/intermediate
#W33: Workshop 33

#W33  Best practice use of digital selection methods: What’s new and what have we learned? (8233)

Date of Presentation: 30 August 2021
Time of Presentation: 9:00 to 10:30

PRESENTER(S):
Jordan Buxton, Work Psychology Group, UK
Fiona Patterson, Work Psychology Group, UK

ABSTRACT:
Background: The COVID-19 crisis has resulted in disruption to recruitment and selection practices across the globe because of prohibitions around face-to-face contact. Selection processes have rapidly moved to digital methods (e.g. remotely-proctored admissions tests and online interviews). Technology has revolutionised the interviewing process; face-to-face interaction may no longer be necessary at all stages of the selection process (Levashina et al, 2014). For example, video conferencing technology enables virtual live interviews to take place, whilst asynchronous interviewing enables candidates to record their answers to a predetermined set of questions at their convenience, with responses scored by an assessor at a later date (Brenner, et al 2016). Whilst applicants have been understanding of the changes that have taken place due to the pandemic, there are likely unintended consequences as the validity of such high stakes online selection procedures remains relatively unknown. We will review considerations of the accuracy, fairness, stakeholder acceptance, efficiency and scalability of digital selection methods when designing future selection schemes.

Who Should Attend: Those interested in selection for healthcare professions and anyone with a particular interest in digital selection.

Structure of Workshop: Delegates will be provided with the key principles of digital selection method development based on the latest research, and gain an understanding around how to effectively use these results when making selection decisions. Emerging research evidence will be provided in relation to the use of technology, and considerations for a future research agenda. Practical exercises will focus on discussions of technology-use within selection methods (e.g. on-line interviews) and opportunities to review interview content originally developed for in-person delivery and using the principles provided in the workshop, considering adaptations required to ensure valid online delivery.

Intended Outcomes:
• To review and discuss the benefits, challenges and practical implications associated with technology use as part of selection methods in a healthcare selection context.
• Understand best-research evidence regarding digital, virtual selection methods within healthcare education.
• Discuss a future research agenda to explore the strengths and limitations of digital selection and longer-term consequences.
• Understand how technology can be utilized to support selection method delivery and important practical and policy considerations for future developments.

Level: Introductory
#P4: Plenary 4

#P4  It takes two to tango: A mentoring journey through the lens of mentor and mentee

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 11:00 to 12:00

Subha Ramani, Associate Professor of Medicine, Harvard Medical School, Boston, USA  
Evangelos Papageorgiou, York Teaching Hospital NHS Foundation Trust, UK

**Summary:** The delicate balance of mentoring someone is not creating them in your own image, but giving them the opportunity to create themselves” - Steven Spielberg. Contemporary mentoring models have moved beyond unidirectional dyadic relationships to include peer mentoring, mentoring networks, one-time focussed interactions and reverse mentoring. Regardless of format, mentoring should be anchored by relationships, foster a climate psychological safety and mutual growth. We will review the mentoring journey from the perspective of a mentor and mentee. We will conclude with the argument that supporting mentees without challenging them could lead to stasis rather than growth.

**Biographies:**

Dr Subha Ramani, a general internist and educationalist, is Associate Professor of Medicine at Harvard Medical School. She completed a Masters in Medical Education at University of Dundee and PhD in Health Professions Education at Maastricht University. Dr. Ramani holds educational leadership roles at the Brigham and Women’s Hospital and Harvard Macy Institute. She is a member of the AMEE Executive committee, chairs the Fellowship Committee and directs the ESME-CT course. She has several peer reviewed publications in medical education journals and scholarly interests include: mentoring, feedback, clinical teaching, mindset, emotional intelligence and application of theory to educational practice.

Dr Evangelos Papageorgiou is a medical doctor from Greece, currently working as a junior doctor in the United Kingdom. He is an AMEE Associate Fellow and a member of the Executive Committee for 3 years, first as a student member representing the European Medical Students' Association (EMSA) and now as a junior doctor member representing the European Junior Doctors Association (EJD). His interests involve undergraduate education, interprofessional education, student involvement and advocacy, mentoring and diversity in medical education.

**Subha and Evangelos will give Meet the Expert sessions at the following times:**  
Monday 30 August: 1230-1300  
Monday 30 August: 2000-2030
#S14: Symposium 14

#S14  A conversation among readers, editors and authors about the health sciences education literature (7417)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 12:30 to 14:00

**PRESENTER(S):**  
Gail Sullivan, Editor-in-Chief, Journal of Graduate Medical Education, University of Connecticut School of Medicine, USA  
Peter de Jong, Editor-in-Chief, Medical Science Educator, Leiden University Medical Center, The Netherlands  
Erik Driessen, Editor-in-Chief, Perspectives on Medical Education, Maastricht University, The Netherlands  
Colin West, Deputy Editor, Academic Medicine, Mayo Clinic, USA  
Nikki Woods, Editor, Advances in Health Sciences Education, The Wilson Center, Canada  
Richard Hays, Editor-in-Chief, MedEdPublish, James Cook University, Australia  
Sue Kilminster, Deputy Editor, Medical Education and Lead, Health Professional Education Research, Faculty of Medicine, UK  
Ronald Harden, Editor-in-Chief, Medical Teacher, AMEE, UK

**Summary:** Health sciences educators and researchers have a responsibility to the field to disseminate their scholarship beyond their own working group or institution. However, it can be difficult to determine which venue is appropriate for their work. The proliferation of health sciences education journals challenges educators in choosing among various journals for keeping up to date as well as for disseminating work to the most appropriate forum. Each journal has a specific scope and categories for submissions. Determining a strategy for success is sometimes a slow, painful journey for those engaged in education scholarship. This session will allow educators and researchers - consumers and producers of scholarship - to learn about the differences among dissemination outlets and gain insights into editors' decisions in prioritizing health sciences education submissions. Editors from several medical education journals will explain their journal's scope and current priorities, as well as which papers are best suited to their journal. Editors will shine a bright light on their current processes and decisions in 2021.

This session will include comparisons of several journals. As the number of presenters is limited to four, presenters may discuss more than one journal. Two additional journals are not listed in the author/presenter list and may be included: MedEdPortal; Grace Huang, MD, Editor-in-Chief, Harvard Medical School, ghuang@bidmc.harvard.edu and Anna Cianciolo, PhD, Editor-in-Chief, Teaching and Learning in Medicine, Southern Illinois University, acianciolo@siu.edu. The listed co-authors and presenters have committed to contributing to this session.

**What participants will gain:** 1. Understand the different scope and priorities of several health sciences education journals  
2. Develop personal plans for future submissions of educational scholarship and/or for targeting personal reading to keep up to date in the health sciences education literature  
3. Identify editorial considerations, specific to each journal, which are critical for successful submissions

**Who should participate:** Educators and researchers who wish to enhance their reading and work dissemination efforts; those just beginning scholarship and dissemination efforts as well as those with experience (ie, novice to advanced)
#S15: Symposium 15

#S15 Pearls from the Surgery Track sessions

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 12:30 to 14:00

**PRESENTER(S):**  
Ajit Sachdeva, American College of Surgeons, USA (Moderator)  
James Garden, University of Edinburgh, UK  
Monica Ghidinelli, AO Foundation, Switzerland  
Paul Lai, Hong Kong Academy of Medicine, Hong Kong  
Bonnie Miller, Vanderbilt University School of Medicine, USA  
Julian Smith, Monash University, Australia

**Summary:** The AMEE 2021 programme incorporates a Surgery Track containing a range of sessions with presentations from surgery educators. Sessions include a Symposium on Revalidation and a Workshop on Microcredentialling. In addition there is a wealth of short communications and eposter presentations, both in the live programme and in the AMEE Resource Centre (ARC) for on-demand viewing. Members of the Surgery Track group present what for them have been the highlights from the Track.

**Who should participate:** The session is relevant to all educators, and much of the work presented may have applications across a range of specialties and professions.
Burnout and engagement among PhD students in medicine: The BEeP study (7647)

Date of Presentation: 30 August 2021
Time of Presentation: 12:30 to 12:50

AUTHOR(S):
Rashmi Kusurkar, Amsterdam UMC, Research in Education, Faculty of Medicine Vrije University Amsterdam, The Netherlands
Stéphanie van der Burgt, Center for evidence based education, location AMC, The Netherlands
Ulviye Isik, Amsterdam UMC, Research in Education, Faculty of Medicine, Vrije Universiteit, The Netherlands
Marianne Mak-van der Vossen, Amsterdam UMC, Research in Education, Faculty of Medicine, Vrije Universiteit, The Netherlands
Janneke Wilschut, Dutch Institute of Clinical Auditing, The Netherlands
Anouk Wouters, Amsterdam UMC, Research in Education, Faculty of Medicine, Vrije Universiteit, The Netherlands
Andries Koster, Department of Pharmaceutical Sciences, Utrecht University, The Netherlands

ABSTRACT:
Introduction: Although burnout has been identified as a global problem among medical students, residents and physicians, the group 'PhD students in medicine' has been neglected in burnout research. There are several studies on satisfaction, stress and depression, and well-being of PhD students in general, but not on burnout. Also the findings of PhD students in medicine have not been reported separately. What makes PhD students in medicine essentially different from other PhD students is that this group works in a hospital/clinical setting, may be supervised by physicians with PhDs and may experience elements of medical culture and hierarchy in ways that may contribute to burnout. PhD students also working as doctors, are also likely to experience higher workload and conflict in balancing work responsibilities. In the current study we investigated not only burnout, but also engagement among PhD students in medicine, and their association with motivation, work-life balance, and satisfaction or frustration of their basic psychological needs. We used the Self-determination Theory (SDT) framework to investigate this phenomenon because it provides a basis for investigating burnout and engagement through frustration and satisfaction of basic psychological needs respectively.

Methods: This cross-sectional study was conducted among PhD students at a Dutch university medical center (n=990) through an electronic survey on: a) background characteristics, b) questions on feeling part of a team, conflict between work responsibilities, and sleep quality, and c) validated questionnaires measuring burnout, engagement, motivation and satisfaction and frustration of basic psychological needs. Cluster analysis was performed on the burnout subscale scores of exhaustion, cynicism and perceived negative efficacy. Using cluster membership as the independent variable, we performed multiple ANOVAs to explore their associations with the dependent variables. Structural equation modelling was conducted on a hypothesized model of frustration of basic psychological needs and burnout. We used fit indices for estimating goodness of fit of the model. The effect size for differences between individual means was computed using Cohen’s d.

Results: The response rate was 47% (n=464). We identified that a 3-cluster solution was stable (Cohen’s kappa=0.95) and fit the data best. Cluster 1 (n=199, 47%) had low scores on burnout, but was associated with low engagement scores. Cluster 2 (n=168, 40%) had moderate burnout scores, and was associated with even lower engagement scores. Cluster 3 (n=55, 13%), with the highest burnout scores, was associated with the lowest motivational, engagement, need satisfaction, feeling part of a team, quality of sleep and work-life balance scores. We found a good fit for the “basic psychological needs frustration associated with burnout” model, with Root Mean Square Error of Approximation=0.044 (<0.06), Comparison of Fit Index=0.986 (>0.95), Tucker Lewis Index=0.976 (>0.95), Standardized Root Mean Square Residual=0.041 (<0.05).
Discussion and Conclusions: The most important variables for burnout among PhD students in medicine were lack of sleep and frustration of all basic psychological needs. These add to the factors found in the literature. We recommend training for cluster 1 on how to become more engaged in their PhD work. For cluster 2, we recommend that the supervision team engages in discussion with their students about how to maintain autonomy in work, about reducing the conflict in work responsibilities, and perpetuating team spirit, while the student gets help with organizing his/her schedule, work-life balance and sleep. We recommend the research institutes and Human Resources department (at a more systemic/organizational level) to provide training to cluster 3 on structuring their work, personal and leisure activities, and resolution of problems related to poor supervision and basic psychological needs frustration. Further research questions to enrich the existing literature are - Can our results be replicated in other countries in similar contexts? How do PhD students in medicine identify and describe the stressors and energizers in PhD work?

#RP7: Research Paper - Engagement in learning

#RP7.2 Engaged or disengaged? Using Video-Stimulated Recall to gain insight into medical student behavior during small-group learning activities (7719)

Date of Presentation: 30 August 2021  
Time of Presentation: 12:50 to 13:10

AUTHOR(S):  
Jan Willem Grijpma, VUmc, The Netherlands*  
Marianne Mak-van der Vossen, VUmc, The Netherlands  
Rashmi Kusurkar, VUmc, The Netherlands  
Martijn Meeter, Vrije Universiteit, The Netherlands  
Anne de la Croix, VUmc, The Netherlands

ABSTRACT:  
Introduction: Small-group learning activities rely on students’ engagement with teachers, study materials, and/or peers to construct knowledge. Teachers often equate engagement with verbal participation: talking students are engaged and silent students are disengaged. In fact, silence can be a reason for students to receive low participation grades and even fail professional behavior assessments. However, silence can be a sign of engagement, for example when a student is thinking, analyzing, or carefully listening. Therefore, we need to broaden our understanding of engagement. To improve the experience of small-group learning activities, teachers also need to adequately differentiate between engagement and disengagement, and learn how to intervene when students are disengaged. To guide our investigation, we used a framework which describes engagement as a multidimensional construct, comprising of cognitive, behavioral, and emotional components. These components are presumably dynamically interrelated and malleable.  
Methods: We conducted a Video-Stimulated Recall study to explore medical students’ engagement during study group meetings. We recorded two meetings, of two different study groups, and selected critical moments of apparent (dis)engagement. These critical moments served as prompts for individual semi-structured interviews with the students, to explore their recollections, thoughts, emotions, and viewpoints. We adopted a social constructivist epistemological stance and analyzed the interview data using Thematic Analysis. The framework of engagement served as a sensitizing concept.  
Results: The analysis confirmed the multidimensional framework of student engagement and demonstrates its applicability to medical education. Medical students can engage or disengage behaviorally, cognitively, and emotionally from learning activities. The analysis also showed how engagement is a dynamic process and students engage and disengage multiple times during a single lesson. Furthermore, the three components are independent processes, meaning that students can be engaged on one component and disengaged on another. For example, students can speak up in class (verbal participation) with the intent of ending the class quickly instead of providing an answer to a question (cognitive disengagement). Students expect their teachers to stimulate them in their engagement, and would likely be most engaged if they felt stimulated on all three components of the framework. Students also expect their teachers to intervene when they disengage (on any of the three components). Differentiating between engagement and disengagement proved difficult, as it occurred multiple times during the study that a critical moment was selected for the interview, and the apparent behavior of the student did not match the perception of the student about their engagement.  
Discussion and Conclusions: This study shows that student engagement in learning encompasses more than only the verbal participation of students. This study also shows that silence in the classroom is not the absence of engagement, nor is speaking up necessarily a sign of engagement. It would be more valuable to consider the full spectrum of engagement including its behavioral, cognitive, and emotional components. Students feel it is the responsibility of teachers to stimulate their engagement and to intervene when they disengage. Differentiating between engagement and disengagement proved difficult. The implications of this are that teachers need to be cautious in their evaluation of students engagement, especially when engagement is part of an assessment.
#RP7: Research Paper - Engagement in learning

#RP7.3  Sleepiness, neural activation and clinical reasoning: Even a little sleepiness influences clinical reasoning ability in novices (7606)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 13:10 to 13:30

**AUTHOR(S):**  
Jennifer Cleland, Lee Kong Chian School of Medicine, Singapore*  
Steven Durning, Uniformed Services University of the United States, USA  
Laura Gates, University of Aberdeen, UK  
Gordon Waiter, University of Aberdeen, UK  
Lambert Schuwirth, Flinders University, Australia

**ABSTRACT:**  
**Introduction:** Dual-processing theory suggests that how challenging a task is to an individual, the nature of cortical activation and how much cognitive processing is affected by factors such as sleepiness may depend on individuals' level of experience with a given condition (1). However, little is known about how sleepiness affects novice clinical decision making. Our aim, therefore, was to examine the association between clinical reasoning, neuroanatomical activation and sleepiness in senior medical students, and compare this to an earlier study examining the same issue in experienced physicians (2). Drawing on previous studies, we hypothesized that the prefrontal and parietal cortices would show changes with sleepiness, but that the precise patterns of activation would differ in our more novice group who may need to use more cognitive effort (Systems 2 thinking) to reach the same outcome.

**Methods:** Our methodology closely followed that of Durning et al. (2014). Participants were invited to answer and reflect on validated multiple choice questions (MCQs) during an fMRI scan. Each MCQ was projected in three phases: reading, answering and reflection (modified think aloud) phases. Echo-planar imaging (EPI) scans gave a time series that reflected BOLD (Blood Oxygenation Level Dependent) signal in each location (voxel) within the brain. Sleep data were collected on self-reported (Epworth Sleepiness Scale) and we also added an objective measure of sleep, via actigraphy. These data were correlated with answer accuracy using Pearson correlation.

**Results:** Eighteen final year UK medical students participated. Covariate analysis revealed an increased BOLD signal in the right dorsomedial prefrontal cortex (dmPFC) (FWE correction, p < .05) during reflection (Phase 3) associated with increased self-reported sleepiness (ESS) immediately before scanning. Covariate analysis also revealed that increased BOLD signal in the right supramarginal gyrus (FWE correction, p <.05) when reflecting (Phase 3) was associated with increased correct answer response time. Both patterns indicate effortful analytic reasoning, indicating that novices and experts "think differently".

**Discussion and Conclusions:** Our findings that novices use System 2 thinking for clinical reasoning and even a little (perceived) sleepiness influences clinical reasoning ability in novices, are important. This suggests that the parameters for safe working may be different for novices (e.g., junior doctors) and experienced physicians. Yet in many healthcare systems, it is the less experienced doctors - the very people for whom clinical errors may be more likely when fatigued - who are working long shifts and nights. Is there a way to design systems that can reduce cognitive demands in order to not exceed the capacities of novices? Further study is required.

**References:**  
#RP7: Research Paper - Engagement in learning

**#RP7.4 Exploring the relationship between emotion and cognitive load types during patient handovers (7615)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 13:30 to 13:50

**AUTHOR(S):**  
*John Young, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, USA*  
Justin Sewell, UCSF School of Medicine, USA  
Karen Friedman, Zucker School of Medicine, USA  
Jeroen van Merrienboer, Maastricht University, The Netherlands  
Krima Thakker, Northwell Health, USA  
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**ABSTRACT:**

**Introduction:** Patient handovers remain a significant patient safety challenge. Researchers have used Cognitive Load Theory (CLT) to unpack the complexity of health professions workplace learning tasks including handovers. When the cognitive load of a handover exceeds the working memory capacity of the trainee, learning and performance suffers. CLT focuses on the development of instructional strategies that match intrinsic load (IL) to the developmental stage of the learner, decrease extraneous load (EL), and optimize germane load (GL).

CLT strategies have traditionally focused on modifying the complexity of the task, the knowledge of the learner, and/or the design of the instruction. CLT researchers have given little attention to how the learner's emotions influence cognitive load. Yet, we know that emotion modulates learning through numerous cognitive processes including motivation, attention, working memory, and long-term memory. This study addresses this gap by exploring how emotion influenced the IL, EL and GL experienced by trainees performing patient handovers.

**Methods:** During January to March, 2019, we administered a cross-sectional survey to 1,807 residents and fellows from a large 24-hospital health system in the United States. Participants completed the survey after completing a handover. The survey included questions about features of the learner, task, and instructional environment. Intrinsic, extraneous and germane load were measured with the 16-item Cognitive Load Inventory for Handoffs. Emotions were assessed with an eight-item scale based on the circumplex model of affect. The authors used factor analysis to identify the core dimensions of emotion and then explored the relationship between emotion and cognitive load with three types of analyses. First, bivariate correlational analyses examined the relationship between the emotion factors and learner, task, and instructional environment features known to predict cognitive load. Second, we conducted univariate regression analyses to investigate whether emotion factor scores predicted IL, EL and GL. Third, multivariate regression determined whether the addition of the emotion factors to models including these previously established predictors of cognitive load types increased the variance explained ($\Delta R^2$).

**Results:** 693 (38.7%) of 1807 residents and fellows completed a survey. Exploratory and confirmatory factor analysis identified two dimensions of emotion representing invigoration and tranquility. The correlational analyses revealed that higher invigoration was associated with higher levels of training and use of a standardized verbal protocol while lower levels of invigoration were associated with interruptions, difficulty obtaining essential information, and fatigue. Higher tranquility was associated with higher levels of training and lower levels of tranquility with interruptions, difficulty obtaining information, fatigue, longer handoffs, and greater number of patients. In bivariable analyses, invigoration and tranquility showed a statistically significant interaction; therefore, subsequent analyses included only the interaction term. The interaction of invigoration and tranquility was negatively associated with cognitive load, i.e., higher invigoration/tranquility predicted lower IL, EL, and GL. In the multivariate models of predictors for each type of cognitive load, the addition of the emotion term increased the amount of variance explained by 40% for IL, 53% for EL, and 27% for GL.

**Discussion and Conclusions:** This study makes several important contributions to understanding emotion and cognitive load experienced by trainees performing in-vivo handovers. First, the study models how
emotion and cognitive load can be measured during a workplace learning activity. Like studies in the simulation context, the structure of emotion during patient handoffs consisted of two factors. Second, the findings suggest that emotions have an important influence on the cognitive load experienced by trainees while performing patient handoffs. Traditionally, CLT researchers assumed that emotion primarily effected EL. Our results suggest a much broader impact of emotion. Finally, these results suggest that enhancing invigoration and tranquility will reduce cognitive load and improve learning and performance. This highlights the importance of developing instructional strategies that help trainees regulate their emotions.

#EP8: ePoster - Patient Safety

#EP8.1 Lifting the veil of confusion: Teaching medical students to assess the confused elderly patient on-call (8156)

Date of Session: 30 August 2021  
Time of Session: 12:30 to 14:00

AUTHOR(S):  
Aodhan Byrne, Salford Royal Foundation Trust, UK*  
Zoë Arnott, University of St. Andrews, UK  
Rajkumar Parikh, The Royal Oldham Hospital, Penine Acute Foundation Trust, UK  
Mark Boyle, The Royal Oldham Hospital, Penine Acute Foundation Trust, UK

ABSTRACT:  
**Background:** Delirium is a common complaint in the older patient, present in up to 30% of patients over 65 years in the Emergency Department (ED) and 42% of hospital inpatients. It is associated with a subsequent diagnosis of dementia and inpatient morbidity and mortality. Doctors must be confident in taking a history from, examining and treating the underlying cause of delirium.  

**Summary of Work:** A prospective study of 24 final year medical students was conducted, examining their ability to recognise and manage unwell elderly patients with delirium. Data was gathered using qualitative self-assessment forms of the students pre- and post-intervention. The intervention included an observed short scenario of an acutely confused elderly patient from a care home who was brought into the ED by their carer. A history was taken from both the patient and carer. This was followed by an interactive near-peer teaching session based on the students observations of the contents of the consultation. The scenario was designed to replicate a common clinical problem new doctors will encounter.  

**Summary of Results:** Difficulties identified in assessing delirious patients pre-intervention included getting adequate info, knowing when to give up and identifying a cause. Following the intervention, 94% of the students reported greater confidence with history taking, 71% felt more confident examining confused patients and in their knowledge of the investigations needed. Additionally, their confidence differentiating delirium from dementia improved. 85% felt the intervention addressed their concerns regarding the approach to the confused patient.  

**Discussion and Conclusions:** Pre-intervention students recognised the importance of delirium and gaps in their knowledge. This authentic scenario provided a means to address concerns about identification and management. Confidence increased and pleasingly students felt better able to differentiate between delirium and dementia which is clinically important. A short intervention using a realistic scenario can be used to meet the clinical needs of patients and learning needs of students. Further work should be done to assess if learning is carried over into practice.  

**Take-home Messages:** Using a short, authentic and near-peer intervention can address learning needs with regards to assessing cognition. Such interactive teaching sessions, based on a patient case, challenge learners to think like a doctor! Try it!
ABSTRACT:

Background: Historically, the results of the Havard Medical Practice Study, conducted in 1991, and the publication To Err is Human of the Institute of Medicine (IOM) in 1999, are highlighted as major milestones from which concern with the emergence of patient safety.

Summary of Work: Methodological study that aimed to validate a safety protocol in an intensive care unit - ICU. The most common risks observed in a systematic review sample were unscheduled device traction and medication-related events, followed by pressure injuries, healthcare-associated infections, VAP-ventilated pneumonia, falls, delays, or non-testing, and phlebitis. A secure ICU Protocol was created, which was validated using the Delphi Technique in 3 steps. The first round attended by a panel of 15 experts from 5 professional categories, conducted through a quantitative approach, the the second stage comprised the judgment of 5 experts, making up the qualitative approach and finally, the third stage consisted of 46 participants who answered a final questionnaire to obtain consensus that was analyzed quantitatively.

Summary of Results: After analyzing the second panel of experts, the Beta version of the protocol was submitted to the judgment of 46 health professionals with experience in intensive care, who judged its content in relation to the relevance to patient safety, the practical applicability of its items and the their contribution to the safety of critical patients. a general consensus average of 95.9% was obtained among the participants, demonstrating the relevance of building the protocol for the promotion of patient safety in the ICU and its practical applicability.

Discussion and Conclusions: There was a consensus of professionals above 91% in all items, the general average consensus among specialists was 95.9% after the last validation stage, demonstrating the relevance of building the protocol for the promotion of patient safety in the Therapy Unit Intensive and continuous improvement of healthcare team care practices.

Take-home Messages: Safe ICU protocol can be an instrument of quality and safety for critical patients. There must be uninterrupted discussions of risk factors for unwanted incidents. It is important to continually strengthen the safety culture. There is a need to increase educational practices in ICUs.
#EP8: ePoster - Patient Safety

#EP8.3 Effects of an In Situ Simulation Training Program on Managing Patients with Faint during Blood Draws for Medical Laboratory Scientists (8846)

Date of Session: 30 August 2021
Time of Session: 12:30 to 14:00

AUTHOR(S):
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Pin-Ching Pan, Division of Clinical Pathology, Tri-Service General Hospital, National Defense Medical Center, Taiwan
Sheng-Hui Tang, Division of Clinical Pathology, Tri-Service General Hospital, National Defense Medical Center, Taiwan

ABSTRACT:
Background: Most education for medical laboratory scientists focuses on knowledge and skills of medical laboratory science. However, it is common in clinical situation that patients appear faint during blood draws. The laboratory scientists must learn how to manage the emergency and maintain stable vital signs and patient safety. Therefore, it is essential to develop an in situ simulation training program for the medical laboratory scientists to integrate the competence in manage the emergency into the knowledge and skills of medical laboratory science. The study aims to evaluate the effects of an in situ simulation training program on medical laboratory scientists competence of emergency management and learning outcomes (mental load, mental efforts, and flow experience) for treating patients with faint during blood draws.

Summary of Work: The in situ simulation training program included a video of standard procedures for treating patients with faint during blood draws, and the in situ training designed with standard patients (SP). First, the trainees were required to watch the video, and receive the first-time questionnaires to measure the learning outcomes. Then taught the trainees how to manage the emergency by using SP. Then assess the trainees competence by using the behavioral checklist, and administer the second-time questionnaires to measure the learning outcomes. There were total 15 medical laboratory scientists to participate in the study. Data were analyzed by using paired t-test to compare the changes of the scores of learning outcomes.

Summary of Results: Results suggest that in situ simulation training program on medical laboratory scientists could significantly improve the flow experience ($t = -2.534, p = 0.017$). About 100% of the trainees could complete and pass the behavioural checklist. The course satisfaction for the trainees achieved 81.3%.

Discussion and Conclusions: The in situ simulation training program designed with SP on medical laboratory scientists could significantly improve the flow experience and the trainees competence in emergency management. Most trainees were satisfied with the in situ simulation training program.

Take-home Messages: The in situ simulation training program can provide more diversified and practical learning, and enhance the medical laboratory scientists competence in treating patients with faint during blood draws.
#EP8: ePoster - Patient Safety

#EP8.4 How do we educate medical students interprofessionally about patient safety? (9290)

Date of Session: 30 August 2021
Time of Session: 12:30 to 14:00

AUTHOR(S):
Sarah Howarth, University of Leeds, UK*
Shelley Fielden, University of Leeds, UK
Jane O’Hara, University of Leeds, UK

ABSTRACT:
Background: Improving patient safety is an international imperative. Medical education has an important role in developing knowledge, behaviours and a culture that supports this. Yet, despite research demonstrating that teamwork skills and collaboration are linked with safe and effective health care, the silo-model of teaching patient safety is still commonly used. We, therefore, conducted a scoping review to examine the design and impact of interprofessional education interventions involving medical students that focus on patient safety.

Summary of Work: We systematically searched PubMed, EMBASE, PsycINFO and CINAHL between January 2000 and November 2019. Studies were eligible if they included medical students and at least one other profession, interactive learning, a strong emphasis on patient safety in the learning objectives, and an empirical method of evaluation. Qualitative and quantitative studies were included.

Summary of Results: Forty-three studies were eligible for the review, and there was a diverse range of approaches to intervention design and method of evaluation. They were undertaken with different types of students, with different patient safety foci, in a variety of settings, and using a range of teaching methods. When evaluating the interventions, most studies measured attitudes, perceptions and self-reported knowledge and skill gain. The majority of studies reported positive results but many of the papers were rated low when assessed on quality.

Discussion and Conclusions: We found that interprofessional patient safety education interventions are generally well received by students and often lead to knowledge and skill acquisition; several also reported changes in student behaviour around safe care practices. However, the lack of empirically driven study designs, combined with the lack of rigour when reporting, makes it difficult to draw clear comparisons between studies.

Take-home Messages: 1. Interprofessional patient safety education interventions are incredibly diverse which reflects the complexity and recent growth of the patient safety discipline. 2. When patient safety is taught interprofessionally, a range of outcomes can be measured from student satisfaction to behavioural and organisational change. 3. Most interprofessional education interventions are poorly reported (e.g. how and why the intervention has been designed to be delivered interprofessionally). Future research should address this.
#EP8.5 Nasogastric tube training - we need to do more! (8464)

**Date of Session:** 30 August 2021  
**Time of Session:** 12:30 to 14:00

**AUTHOR(S):**  
*James Blair, Shrewsbury and Telford Hospitals NHS Trust, UK*  
*Megan Bevis, Shrewsbury and Telford Hospitals NHS Trust, UK*

**ABSTRACT:**  
**Background:** Nasogastric tube (NGT) teaching at medical school is often centred around the practical aspects of insertion, with little training on confirming safe placement. As a foundation year one (FY1) doctor, confirming NGT placement on a chest x-ray (CXR) is a common and important task, as misinterpretation of an NGT can lead to significant harm and even death. The level of competence for medical students for NGT placement and confirmation is up to simulation only.  

**Summary of Work:** Two successive cohorts of FY1 doctors attended a near-peer NGT training session in October 2019 and July 2020. The teaching incorporated a recap of theory; training on confirming NGT position and a series of practice clinical scenarios. The FY1 doctors undertook pre- and post-teaching questionnaires, which assessed self-reported confidence in checking NGT placement (Likert scales 1-10) and knowledge of the four-point check criteria used in CXR interpretation. Unpaired T-tests analysed assessed mean score changes.  

**Summary of Results:** A total of 71 FY1s attended the two teaching sessions. All found the session useful. Only 42% had received previous formal training on how to confirm NGT placement on a CXR. Prior to the teaching, students reported they felt unconfident with confirming correct NGT placement (Mean = 4.37, Likert 1-10) and struggled to recall the four-point check criteria (Mean = 1.21). A significant overall increase in mean scores was found post-teaching delivery (p<0.0001), in confidence (+4.04) and four-point criteria recall (+2.52).  

**Discussion and Conclusions:** This near-peer teaching demonstrated an effective method for improving FY1 doctors confidence and knowledge in confirming NGT placement. However, it is still concerning that FY1s have had little previous training within medical school. This raises questions about how prepared they are for life as a junior doctor and whether the GMC standard of competence up to simulation only is enough?  

**Take-home Messages:** It is crucial that FY1 doctors receive formal NGT training at both undergraduate and postgraduate level to reduce errors and subsequently avoidable deaths from the use of misplaced NGTs.
#EP8: ePoster - Patient Safety

#EP8.6   To what extent can interprofessional Simulation Training improve competences of student health professionals in emergency care? (9243)

**Date of Session:** 30 August 2021  
**Time of Session:** 12:30 to 14:00

**AUTHOR(S):**  
Maike Buchmann, Charité - Universitätsmedizin Berlin, Germany*  
Dorothea Penders, Charité - Universitätsmedizin Berlin, Germany  
Mareen Machner, Charité - Universitätsmedizin Berlin, Germany

**ABSTRACT:**  
**Background:** In emergency care, paramedics, emergency nurses and physicians work together in interprofessional teams after they have been trained in separate schools. The great challenge for patient safety lies in the necessity to make time-critical decisions facing uncertain situations. Actions and competences of individual team members depend on the actions of others (Kolbe et al. 2014). The WHO calls for the dissemination of interprofessional training in order to improve patient safety (WHO 2018). The aim of the project In-Pro-Sim® is to strengthen interprofessional competences of student health professionals (Eisenmann et al. 2017) und to understand to what extent these competences can improve through training.

**Summary of Work:** The project In-Pro-Sim® offers a longitudinal training format consisting of several one-day simulation training modules for interprofessional teams (medical students, advanced trainees of emergency nursing and student paramedics). After an exchange of individual concepts of professional roles, several simulations of emergency situations are conducted. Both the training presented and the project as a whole were evaluated using a mixed-method approach (including observation guidelines and questionnaires) according to predefined indicators and criteria constructed according to the KODEÂ® method. Participants self-rated competences were assessed before and after each training module.

**Summary of Results:** In one training module, 44 student health professionals took part (emergency nurses n=17, paramedics n=17, medical students n=10). Of these, 28 were men and 16 women. The average age was 27.3 years. Participants competences concerning communication, teamwork, taking responsibility, delegating and decision making improved significantly. The participants explained the effects mainly by: - Transparency in cross-professional workflows - Time for exchange fostering a mutual understanding of roles - Practicing emergency situations together

**Discussion and Conclusions:** First results show that competences can significantly increase trough interprofessional simulation training. Exchanging perspectives on roles is perceived as critical factor for the development of competences. The longitudinal training format allows further analyses of long-term effects that will be presented.

**Take-home Messages:** Interprofessional simulation training significantly improves competences necessary for team-based emergency care. There is a need for evidence-based tools that foster deep learning and thus a long-term change of mental models in professional practice in order to increase patient safety.
#SC33: SC - Junior Doctor as Teacher

#SC33.1 Junior doctors as clinical teachers on the acute take: A qualitative study of experiences (8011)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:00 to 12:15

**AUTHOR(S):**  
Charlotte Hayden, South Bristol Academy, University Hospitals Bristol and Weston NHS Trust, UK*  
Abhishek Oswal, South Bristol Academy, University Hospitals NHS Foundation Trust, UK  
Jedd Raidan, University of Bristol Medical School, UK  
Jonathan Rees, South Bristol Academy, University Hospitals NHS Foundation Trust, UK

**ABSTRACT:**  
**Background:** Newly qualified doctors are unprepared to deal with medical emergencies due to limited exposure to unwell patients during training. Experiential learning proponents recommend supported workplace participation for undergraduates to prepare them for clinical work. For junior doctors, managing acute admissions alongside supporting student participation can be challenging. Our aim was to explore junior doctors experiences of teaching in the acute admissions setting.  

**Summary of Work:** Three semi-structured focus groups were carried out with a total of fourteen junior doctors interested in medical education (4-6 participants per group) in one teaching hospital in the South West. Each was audio-recorded and transcribed before being thematically analysed.  

**Summary of Results:** Participants described aspects of teaching, demonstrating, coaching and supervising. The acute take was perceived as a valuable learning opportunity, though highly variable and unpredictable; as a result tensions arose between clinical and educational roles. Internal influences to these tensions included junior doctors hierarchical placement of clinical work over educational responsibilities and anxieties over their abilities as supervisors and clinicians. External influences were noted from students, senior colleagues and organisations. Participants poorly understood students learning needs and felt pressure to meet their expectations. Seniors reinforced pressures to provide clinical care and shaped the educational culture for better or worse. Organisations were not seen to value education due to lack of time and resource allocation. Junior doctors managed tensions by compartmentalising teaching from clinical work and demoting students to passive observer roles.  

**Discussion and Conclusions:** Active workplace participation is vital to prepare students for clinical work; this study recognises the value of educational opportunities on the acute take but highlights significant challenges faced when supporting education around unwell patients. Junior doctors need additional, targeted support to facilitate undergraduate learning in this environment to improve student experiences and preparedness.  

**Take-home Messages:** 1. There is a need to support junior doctors to develop an integrated clinical and educational identity and develop better understanding of student needs. 2. Organisations should facilitate an active role for students on the acute take and ensure appropriate support for junior doctors responsible for supervising students.
#SC33: SC - Junior Doctor as Teacher

#SC33.2  To teach is to learn twice revisited - proposal of 4T model (9631)

Date of Presentation: 29 August 2021
Time of Presentation: 12:15 to 12:30

AUTHOR(S):
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Hiroshi Nishigori, Center for Postgraduate Clinical Training and Career Development, Nagoya University Hospital, Japan

ABSTRACT:
Background: Residents have a significant impact as educators when educating students and young residents. In addition, the teaching role of residents promotes their growth as physicians. There are several studies seeking mechanisms how near-peer teachers learn through their teaching role, although their studies are tied to classrooms. Why and how to teach is to learn twice occurs in a clinical environment is important when developing a well-qualified workplace-based learning environment. Therefore, our research questions are how residents teach within the clinical setting, and how teaching affects their development as a physician.

Summary of Work: The study was conducted with the methodology based on the Grounded Theory from social constructivism point of view. The subjects were second-year residents in multiple hospitals in Japan. We choose a second year of residency, since it is the first year to have a formal teaching role in clinical environments in our country. The interviewees were selected with maximum variation strategy. The interviews were recorded and converted to text and then analyzed by the first author. Interviews were repeated until the theme saturated.

Summary of Results: A total of six interviews were conducted with five second-year residents. From the above interviews, we propose a 4T (To teach is to learn twice) model. In addition to transferring of knowledge and skills as described in the previous study, residents were responsible for observing learners, and presenting role models. As the residents learned through these teaching activities they improved their knowledge and attitudes as they tried to play a role as teachers and senior doctors. It is noteworthy that these changes occurred even before the resident met the subject. In addition, they reflect on their attitude and knowledge when they observe the learners.

Discussion and Conclusions: This study picked up the new factors important for learning from teaching, such as the role of observer, and the playing role models as senior doctors. In addition, we also depicted how these factors work together in clinical practice and compiled them into one figure.

Take-home Messages: The residents learn from their teaching role. They learn through playing a role as teachers and senior doctors, teaching activities, and reflection when observing learners behavior.
#SC33: SC - Junior Doctor as Teacher

#SC33.3 Development of a Resident-as-Teacher MOOC (Massive Open Online Course) (8487)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:30 to 12:45

**AUTHOR(S):**  
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Jessica Hernández-Carrillo, UNAM Faculty of Medicine, Mexico  
Carlos Gutiérrez-Cirlos, UNAM Faculty of Medicine, Mexico  
Luis Kieffer-Escobar, UNAM Faculty of Medicine, Mexico  
Marco Tapia-Maltos, UNAM Faculty of Medicine, Mexico  
Jesus Naveja-Romero, UNAM Faculty of Medicine, Mexico

**ABSTRACT:**

**Background:** Residents have a pivotal role in teaching other residents and medical students. Educational interventions to improve their teaching abilities have been developed in several countries, but much less so in developing countries (http://www.biomedcentral.com/1472-6920/10/17). We designed a face-to-face resident-as-teacher workshop, but it has limited outreach because of lack of residents time, faculty resources and large distances among residency sites. The objective of this study was to develop a resident-as-teacher course in Spanish using MOOC (Massive Open Online Course) methodology.

**Summary of Work:** The National Autonomous University of Mexico (UNAM) Faculty of Medicine in Mexico City is a large medical school, with more than 11,000 residents in a hundred clinical sites. We used Kerns curriculum development model, adapted to MOOC format (https://www.ncbi.nlm.nih.gov/pubmed/30681454), as well as Pickerings 12 tips for MOOC development, for implementation in the Coursera platform. A team of clinicians and educators developed five modules: residents teaching role; teaching in the clinics; how to teach psychomotor skills; how to give a conference; leadership and conflict resolution. Modules are short, practice-oriented activities, with videos, discussion forums, and formative assessment activities. If the participant desires a formal UNAM-Coursera certificate, he has to pass the MOOCs summative activities.

**Summary of Results:** The MOOC was completed in October 2020, as a 20-hour self-paced course in the Coursera platform (https://es.coursera.org/learn/residente) in Spanish. It was presented in the forum International Open Access Week (http://www.openaccessweek.org/events/el-rol-de-docente-m-dico-residente-presentaci-n-del-mooc) and made available worldwide. Currently the MOOC has more than 400 residents involved from several Mexican medical schools and other countries in Latin America, as well as Spanish-speaking residents from other places. The Coursera platform provides a large amount of quantitative and qualitative data about the course, which we are in the process of analyzing.

**Discussion and Conclusions:** The MOOC online modality is feasible for developing residents educational material, it provides self-paced educational interventions that can be made available to large populations of residents in different geographical locations. Residents need educational material in their own language to improve their teaching skills.

**Take-home Messages:** MOOCs are an online learning modality that needs to be explored in residency training, since it has several advantages compared to face-to-face training.
#SC33: SC - Junior Doctor as Teacher

#SC33.4 Virtual Promiscuous Pair Programming for Surgical Registrars: An efficient, effective and engaging method to teach histopathology (7961)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 12:45 to 13:00

**AUTHOR(S):**  
Amanda Charlton, Auckland City Hospital and University of Auckland, New Zealand*  
Diane Kenwright, University of Otago, New Zealand

**ABSTRACT:**

**Background:** We co-teach an annual classroom-based Ophthalmic Pathology pre-exam course, where Surgical registrars learn to make diagnoses from digital histopathology slides. We noticed students frequently had adverse reactions to learning histopathology and to peer learning. To engage students, we use promiscuous pair programming [PPP], a method initially developed to teach and learn computer programming that we adapted to teach histopathology. Students work in pairs and share one screen which displays the digital histopathology slide. Like a motorsport rally, one is the navigator, and the other is the driver. The navigator has the map, in this situation the textbook or online resource; the driver operates the keyboard and mouse and drives the digital slide by zooming and panning. Both partners think aloud to solve the problem collaboratively to reach a diagnosis. Partners swap for the next case; this is the promiscuous part. Following each case, the teacher models think aloud to explain diagnostic reasoning while navigating the slide.

**Summary of Work:** In 2020, we converted classroom PPP to virtual PPP using Zoom. The student pairs were randomly assigned using breakout rooms. The driver screen shared with the navigator, and both shared thinking aloud. Then, in the main zoom room, one teacher modeled the slide navigation while thinking aloud while the second teacher moderated live Q&A.

**Summary of Results:** 1. Efficient. Virtual PPP is time efficient for the teacher and learner, the breakout room sessions are 6 mins, and the model answers are recorded. 2. Effective. All students passed an external ophthalmic pathology exam. 3. Engaging. Student survey responses commented that virtual PPP to be the most fun, engaging, and valuable part of the course. Over the course, attitudes to peer learning shifted from somewhat comfortable with peer learning to very comfortable.

**Discussion and Conclusions:** Our PPP learning design incorporates inter-related elements of active, student-centered, social collaborative, problem-solving, growth mindset, and contextualized learning. These elements are informed by the inter-related educational theories of Constructivism (Dewey), Social learning (Bandura, Vygotsky, Wenger), Experiential Learning (Kolb) and Connectivism (Siemens), and motivational theories of Flow (Csikszentmihalyi) and Self Determination (Ryan&Deci).

**Take-home Messages:** Virtual PPP enables rich social and collaborative learning despite physical isolation.
# SC33: SC - Junior Doctor as Teacher

# SC33.5 Results Of Near-Peer Teaching Program - Pilot in Internal Medicine Clerkships at Thai Binh University of Medicine and Pharmacy, Vietnam (8282)

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 13:00 to 13:15

**AUTHOR(S):**  
Vu Binh, Thai Binh University of Medicine and Pharmacy, Vietnam*  
Le Tuan, Thai Binh University of Medicine and Pharmacy, Vietnam  
Le Hieu, Thai Binh University of Medicine and Pharmacy, Vietnam  
Le Toan, Thai Binh University of Medicine and Pharmacy, Vietnam  
David Duong, Harvard Medical School, USA

**ABSTRACT:**

**Background:** Near-peer teaching has been implemented in many medical schools in Vietnam as a strategy to address dire shortages in clinical faculty. From 2019-2020, we piloted a near-peer teaching program in the internal medicine department at our university to evaluate its effectiveness as compared to traditional models of clinical teaching.

**Summary of Work:** Four first-year Internal Medicine residents were trained on basic teaching skills through a 3-day course. Each resident was assigned to support a group of 10 third year medical (Y3) students rotating through their IM clerkship. Each resident conducted at minimum three bedside teaching sessions on basic physical exam skills. The Y3 students clinical scores were compared to the control group (Y3 students taught by the faculty). The effectiveness of the program was also assessed through the teaching observation checklists, self-assessment form of Y3 students and residents.

**Summary of Results:** There was no statistically significant difference in the clinical scores of Y3 students compared to that of students in the control group. The observation checklist showed that residents successfully completed an average of 8.5 steps /10 steps of a bedside session. This result is equivalent to the results of new faculty. 100% of resident felt confident with the clinical content, but only 25% felt adequately prepared to teach the clinical content. Confidence in both expertise and teaching skills increased over time and after the third session, 100% of the residents felt confident teaching. Many students cited being more comfortable and a closer relationship with their resident-teacher as compared to with faculty.

**Discussion and Conclusions:** Near-peer teaching is a key strategy to overcome the shortage of teaching faculty in resource-limited settings. It is necessary to provide more teaching skills for residents, direct observation and giving feedback to residents after first sessions. Assigning a resident and groups of students working together over time was also an important factor to ensure the effectiveness.

**Take-home Messages:** Near-peer teaching is a key strategy to overcome the shortage of teaching faculty in resource-limited settings.
#SC33: SC - Junior Doctor as Teacher

**#SC33.6 Near-to-peer education in social media: A new era (8530)**

**Date of Presentation:** 29 August 2021  
**Time of Presentation:** 13:15 to 13:30

**AUTHOR(S):**  
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Mikhail Kondratiuk, Sechenov University, Russia  
Esma Avakyan, Russian AMEE Centre, Sechenov University, Russia

**ABSTRACT:**  
**Background:** In the modern world, traditional views about lectures and seminars in their ordinary understanding are being transformed. The COVID-19 pandemic has pushed the world to advance various online medical and educational resources. This is also caused by the rapid development of medicine and increasing requirements for medical education quality. It is known that peer-peer and near-peer learning play an important role in the student environment.

**Summary of Work:** During the pandemic and the widespread transition to online education, we, being internal medicine residents at Sechenov University, created an online platform for medical students and junior doctors based on the social network Instagram. We have created medical content in three main formats. Firstly, we have published posts on medical topics and recorded Stories in a generally accepted form. We have also taken short videos for an average of 7-15 minutes on the most difficult medical themes. Finally, we have done one-hour individual consultations on the requested topics in the videoconference format. When creating all content, we use modern evidence-based sources and clinical guidelines and consult with professors and experts on the most controversial issues.

**Summary of Results:** Based on the audience feedback, our content helps students understand topics better that are difficult for them. Moreover, creating educational content and interaction with learners allows us to understand the material in more detail, improve our teaching skills, and increase our interest in medical education as a career focus.

**Discussion and Conclusions:** Micro-blogs and content broadcasting allow us to draw the audiences attention to the project through our personal brand and improve their learning outcomes. Moreover, as part of near-to-peer education, we understand the audiences pain points and needs better and foster mutual trust.

**Take-home Messages:** The development of online education is a common goal. The transfer of the educational process to the online space erases boundaries and makes modern medical knowledge more available. Near-to-peer online education promotes better assimilation and accommodation of knowledge in a convenient and responsive format.
ABSTRACT:

**Background:** In July 2019, Canadian Obstetrics and Gynaecology (OBGYN) postgraduate programs transitioned to a Competence by Design (CBD) training model. As part of an institutional systems-based initiative, Queens University's OBGYN program transitioned two years earlier, in July 2017. A program evaluation of its Competency-Based Medical Education (CBME) implementation was conducted to understand the fidelity of implementation, early outcomes, and provide recommendations for program adaptation.

**Summary of Work:** The CBME Core Components Framework guided the use of qualitative rapid evaluation methodology to examine Queens OBGYN programs implementation of CBME. Trainees, faculty, and program leaders (n=25) participated in focus groups and interviews eliciting their perspectives of, and experiences with, CBME, including intended versus enacted transition plans. Data were analyzed thematically to compare planned with enacted implementation and generate potential responsive adaptation.

**Summary of Results:** Stakeholders appreciated the theory behind CBME, praising it for increasing residents awareness of their progress and level of skills development, bringing clarity to outcomes, and increasing attention to formative feedback. However, challenges at the clinical level included unfamiliarity with CBME terminology and difficulties maintaining fidelity with the assessment processes proposed in theory. Stakeholders agreed that further development opportunities for faculty and residents would enhance shared understandings about and expectations of CBME and address these challenges.

**Discussion and Conclusions:** This study enhanced our understanding of the benefits and challenges of implementing CBME in postgraduate OBGYN programs. Notably, participants articulated that CBME assessment processes challenged what was feasible in clinical settings. Challenges included the time-intensive nature of assessment processes, tensions between patient care and resident observation, and inconsistencies in the interpretation and application of the entrustment scale. Evaluation results will inform evidence-based adaptation plans to address identified issues and guide Queens OBGYN programs growth. This evaluation also presents an opportunity for discussion and learning amongst institutions as CBD becomes the standard medical education model in Canada.

**Take-home Messages:** Evaluating Queens OBGYN programs implementation of CBME highlighted its benefits, while informing areas for adaptation. Addressing these challenges will facilitate the continued implementation and refinement of the CBD model in similar contexts.
#SC34: SC - Competency Based/Outcome Based Education

#SC34.2 Key enablers of CBME implementation: Intersecting contextual features necessary to support fidelity of implementation (8920)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 12:45 to 13:00

**AUTHOR(S):**  
Kimberly Lomis, American Medical Association, USA*  
Larry Gruppen, University of Michigan School of Medicine, USA  
Martin Pusic, Boston Childrens Hospital, USA  
Maya Hammoud, University of Michigan School of Medicine, USA  
Bill Cutrer, Vanderbilt School of Medicine, USA

**ABSTRACT:**

**Background:** In articulating a Core Components Framework for Evaluating Implementation of Competency-Based Medical Education Programs, Van Melle and colleagues consider the challenge of fidelity of implementation, identifying key elements that must be maintained in implementation of CBME programming while adapting practice to local context. Member institutions of the American Medical Association Accelerating Change in Medical Education consortium (ACE) have implemented CBME programs with unique local approaches to shared core objectives.

**Summary of Work:** ACE institutions with robust CBME programs have collaborated throughout their experience of implementation since 2013. A unique feature of the consortium is transparency in sharing challenges as well as successes. Members invested in CBME have reflected on collective progress via a review of grant progress reports and themes in consortium discussions and collaborative efforts. The authors noted that the most successful implementations valued the critical intersection of CBME, the Master Adaptive Learner model, coaching and the learning environment to support fidelity in implementation.

**Summary of Results:** Systems-level enablers of CBME implementation include: the need for explicit training of students to become active participants in the process (Master Adaptive Learner model), a structured process for such participation (portfolios and coaching), investment in informatics platforms to inform the process (data analytics & visualization), and an institutional learning environment oriented toward improvement.

**Discussion and Conclusions:** ACE members agree upon the critical role of the local environment and iterative cycles of implementation in pursuit of a continuous developmental trajectory toward fidelity in CBME. A systems approach to culture change was required to push CBME to its true transformative potential. As implementation of CBME advances, ACE sites have identified structural issues beyond the control of any given institution that threaten fidelity. Recognizing when systems-level changes around accreditation, licensing and advancement are indicated - and engaging in appropriate advocacy to effect such changes - is essential to progress.

**Take-home Messages:** Members of the American Medical Association Accelerating Change in Medical Education consortium who have implemented high-fidelity CBME programs highlight the critical relationship of CBME, the Master Adaptive Learner model, coaching and the learning environment, and the role of advocacy, to support implementation.
#SC34: SC - Competency Based/Outcome Based Education

#SC34.3 Change in Assessment System of the University of Medicine and Pharmacy at Ho Chi Minh City General Surgery Residency Program: From Traditional to Competency-Based Assessments (8446)

Date of Presentation: 30 August 2021
Time of Presentation: 13:00 to 13:15

AUTHOR(S):
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Hai Nguyen Van, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam
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D Smink, Harvard Medical School, Boston, USA

ABSTRACT:
Background: Starting in 2019, the University of Medicine and Pharmacy at Ho Chi Minh Citys (UMP HCMC) General Surgery Department has reformed our Residency Program to align with the competency-based medical education approach. This required a major change to the assessment methods.

Summary of Work: Programmatic assessment requires a combination of various assessment methods, then summarizes and analyzes them to make a judgement on the competency of the trainee. With limited teaching resources and experiences in CBME, we chose some of the most suitable assessment methods which can ensure the feasibility, reliability, and validity. In the pilot year, our assessment system consisted of formal assessments (e.g. MCQ, Writing test, Oral test, Mini-Clinical Examination, Directly Observed Procedural Skills- DOPS) and informal assessments (Feedback 360, case log). At the end of pilot year, a newly formed Clinical Competency Committee reviewed all the data-points to judge the competency of the trainees.

Summary of Results: An end-of-year survey was completed among the 10 residents and 14 faculties who participated in the new residency program. 100% of faculties reported that the new assessment system was beneficial to trainees; 78% reported that it was more labor intensive as compared to prior assessment methods. The majority of faculties agreed on the value and structure of Mini-CEX assessment (93%), DOPS assessment (100%), Competency assessment (100%). 100% of residents reported that their knowledge and skills have improved considerably, because the new assessment system helped them to find out their weakness and create self-improvement plan. All of the participants agreed that the new assessment system brought more accurate and objective evaluations through many formative assessments and feedback as compared to a high-stakes, end-of-rotation summative assessment.

Discussion and Conclusions: Significant challenges exist to create and maintain a CBME programmatic assessment system if a university has limited teaching resources and experiences. Through choosing, modifying, and adapting materials, we can apply CBME aligned assessments in our resource-limited context.

Take-home Messages: Though the competency-based assessment is complex, it is the best approach for a CBME program as it provides proper evidence measuring residents competencies acquired throughout the program.
ABSTRACT:

**Background:** Frameworks for competency-based medical education developed in different countries are being used to guide the design of medical curricula all over the world. Literature are replete with competencies required and assessed within this frameworks however limited literature that guides the incorporation of competencies and implementation of the competency framework. Therefore the aim of this study was to explore and describe strategies used to implement competencies related to the competency framework in dental curricula.

**Summary of Work:** A systematic review design was used. The research question addressed for this systematic review was: What are the strategies used to develop core competencies in undergraduate dental curricula? Databases included in the searches were: MEDLINE (ebSCOhost), Science Direct, MEDLINE (Pubmed), Wiley Online Library, ERIC. A meta-synthesis analysis consisting of a descriptive meta-synthesis to critically analyse and discuss emerging themes from the findings of the six included studies were completed.

**Summary of Results:** Strategies used to develop core competencies were divided into four components namely organizational structure, faculty development, teaching strategies and assessment strategies. To consider a holistic approach to develop core competencies, changes in the organizational structure needs to be in place first. With the appropriate organizational structure in place, faculty development to implement competency strategies would be more supported and feasible. From the findings of the included articles, faculty development regarding teaching strategies and assessment methods were considered necessary to implement core competencies in a dental curriculum.

**Discussion and Conclusions:** A strong relationship between the suggested implementation strategies from this systematic review findings and the multifaceted approach for the CanMEDS exist. Teaching and assessments, faculty development strategies are common strategies. Surprisingly, organisational structure changes were not included as implementation strategy of CanMEDS.

**Take-home Messages:** This review provides a holistic, systematic framework for medical and dental schools to consider to guide successful implementation of competency frameworks and consequent incorporation of related competencies.
#SC34: SC - Competency Based/Outcome Based Education

#SC34.5 Outcome assessment of outcome based training program: Sri Lankan experience (9628)

Date of Presentation: 30 August 2021
Time of Presentation: 13:30 to 13:45

AUTHOR(S):
Ruchith Priyananda, Faculty of Medicine, University of Kelaniya, Sri Lanka*

ABSTRACT:

Background: Outcome based education results in deep learning and lifelong learning. Major challenge in outcome based education is proper assessment of outcomes at the end of the course. National Institute of Health Sciences (NIHS) is the major training institute of the Ministry of Health, Sri Lanka. NIHS conducts Diploma in Educational Science for health professions teachers which is based on outcome based curriculum.

Summary of Work: Diploma in educational science program was conducted for health professions teachers. Program duration was six months. Outcomes identified were lecturer, practical trainer, facilitator, communicator, role model, assessor, manager, resource material developer, curriculum developer and researcher. Lecturer outcome was assessed using microteaching sessions. Assessment of microteaching was carried out using microteaching assessment tool. Practical trainer outcome was assessed using demonstration assessment form. Assessment of the rest of the outcomes were carried out using assignments and portfolios. Furthermore, written examination and assignment methods were used to assess the educational psychology module. Fifty trainees (n=50) followed the course. They include Public Health Inspector Tutors, Public Health Nursing Sisters and Tutors of the Schools of Medical Laboratory Technology, Pharmacy, Physiotherapy, Radiography, Electro-Cardiography, Dental Therapy, Electro-encephalography, and Optometry.

Summary of Results: Pass rate was 80%. Fifteen trainees (n=15) received merit passes (average over 75). All the trainees got through the microteaching and demonstration. Eleven trainees (n=11) referred in portfolio/assignments.

Discussion and Conclusions: Discussion It was a major challenge to assess trainees on exit outcomes of this training program. Many teachers achieved expected outcomes in due time. Although portfolios with reflective logs based assessment is a very effective method in assessing does level in Millers pyramid workload was very high for both trainees and assessors. Conclusion Exit outcome based training should be assessed using portfolios with reflective logs and assignments.

Take-home Messages: Commence writing your portfolio now. Include reflective logs and your best evidence in your portfolio.
#SC34: SC - Competency Based/Outcome Based Education

**#SC34.6 From serendipity to standardisation: Designing and implementing a national curriculum to credential entry-level consultant pharmacists (8837)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 13:45 to 14:00

**AUTHOR(S):**  
*Joseph Oakley, Royal Pharmaceutical Society, London, UK*  
Stephen Doherty, Royal Pharmaceutical Society, London, UK

**ABSTRACT:**  
**Background:** Consultant pharmacists are clinical leaders, delivering high quality pharmaceutical care across healthcare systems. Since their inception in England in 2005, the development of consultant pharmacist posts has been reliant on individual drive combined with right place, right time serendipity with no overt standard or robust assessment at this senior clinical level. In 2020, the Royal Pharmaceutical Society was tasked by NHS England to develop a standardised entry-level consultant pharmacist curriculum and implement a credentialing assessment to assure an entry-level standard inclusive to pharmacists practising across all UK practice settings.

**Summary of Work:** A collaborative approach was used to develop an outcomes-based curriculum aligned to service provision across all UK devolved nations, inclusive of all patient-focussed pharmacist roles and mapped clearly to wider multiprofessional advanced frameworks. We adopted a programmatic formative assessment philosophy to assess individuals high-level capabilities. This approach represented a shift for the profession from the use of high-stakes summative assessments. Outcome stakes and evidence requirements were proportionately linked to ensure high stakes assessment decisions are appropriately informed by multiple assessment points. A broad range of supervised learning event (SLE) tools were developed to evidence learning across disparate clinical settings. The roll out of this assessment programme has been supported by guidance and a webinar series to support the profession to adapt to a formative assessment approach.

**Summary of Results:** A national curriculum has been published articulating the entry-level standard to consultant practice across all patient-focussed pharmacy settings. A credentialing assessment supported by a novel e-portfolio solution has been launched, with over 200 pharmacists registering to develop and submit their portfolios in the first 2 months (surpassing our initial launch target of just 20 pioneer candidates).

**Discussion and Conclusions:** Achieve wide stakeholder collaboration in curriculum design to ensure alignment with service provision and national workforce priorities. Strike a balance between specificity in curriculum design with inclusivity of practitioners across disparate practice settings. Support the profession in transiting to a formative programmatic approach to high-stakes decision making.

**Take-home Messages:** Engage early and broadly. Align outcomes to service provision and patient need. Link risk to evidence requirements. Balance pecificity and professional inclusivity. Support transition to programmatic approaches.
ABSTRACT:

**Background:** Interprofessional collaboration is critical for effective healthcare teams, and leadership in clinical and educational settings is essential to foster interprofessional learning and collaborative practice. (WHO 2010) As such, leaders must possess their own competencies in interprofessionalism and be effective facilitators of others in the development of interprofessional collaborative practice. While interprofessional education historically has focused on early learners and clinical professionals, limited attention has been paid to the educational needs of clinical and educational leaders.

**Summary of Work:** Our goal was to design, implement and evaluate a theory-informed course for clinical and educational leaders that prepares them to effectively lead interprofessional collaboration initiatives. A design-based research (DBR) approach guided this effort (Dolmans 2012), and the results are intended to inform theory and guide future educational practice. An interprofessional DBR team, consisting of clinical and educational leaders and scholars, developed a novel course entitled Interprofessional Collaboration in Practice for students enrolled in a Doctor of Health Sciences in Clinical Practice and Education program. The course development was informed by the literature on interprofessional education and relevant educational theories including social learning theory (Wenger 2015) and interprofessional socialization (Khalili 2020). Student assessments and course evaluations were guided by Cruess (2016) competency assessment framework and Wenger-Trayner's value creation framework for evaluating social learning spaces (2020).

**Summary of Results:** The course was designed to create social learning opportunities where students could learn with, from and about each other. The curriculum was organized around student projects involving the development of a proposal to enhance interprofessional collaboration within their own contexts. The curriculum consisted of weekly readings from the interprofessional literature, reflection activities, asynchronous discussions among students and the course instructor, and peer feedback.

**Discussion and Conclusions:** This novel course to foster competencies in interprofessional practice for clinical and educational leaders was developed utilizing an interprofessional DBR approach to curriculum development to ensure the application of relevant literature to course design.

**Take-home Messages:** Curricula designed to foster competency in interprofessional practice for clinical and educational leaders are lacking. The designed course incorporates relevant learning theory for interprofessional competency development, focusing on the application of principles to the learners own clinical and educational contexts.
#SC35: SC - Leadership

**#SC35.2** Leadership behaviours in interprofessional student teamwork (8774)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 12:45 to 13:00

**AUTHOR(S):**  
Christie van Diggele, The University of Sydney, Australia*  
Chris Roberts, The University of Sydney, Australia

**ABSTRACT:**  
Background: Leadership in interprofessional healthcare teams is important in the attainment of shared goals. Many tertiary interprofessional learning activities do not include the explicit teaching of leadership qualities or behaviours, however, leadership naturally occurs within team settings. This study sought to explore the peer identified leadership qualities and behaviours within a large-scale Health Collaboration Challenge involving students from 11 disciplines. Using functional leadership theory as a theoretical lens, we analysed student data in search of peer identified leadership behaviours.

**Summary of Work:** In 2018, 1674 health professional students took part in a peer review activity on the completion of an interprofessional learning assessment. Students were required to rate themselves and their team members (5-6 students) online using a validated professional learning behaviours scale. Students (n=30) also took part in focus groups which explored team function and identification of team leaders. Framework analysis was used to code and categorise the qualitative data into themes.

**Summary of Results:** The analysis of student peer review data and focus group data (n=30/1674) indicated team leadership behaviours as identified by student peers. Students were identified as leaders within five key categories: 1) Leading by modelling and inspiring; 2) Leading through innovative thinking; 3) Leading through collaboration and facilitation; and 4) Leading with a common vision.

**Discussion and Conclusions:** We found that peer identified leadership behaviours were evident within the interprofessional assessment task. The peer identification of leadership behaviours within IPL activities demonstrates the importance of harnessing student qualities further by optimising explicit interprofessional leadership opportunities.

**Take-home Messages:** To ensure the success of student interprofessional teams, the education culture needs to support and encourage the involvement of leadership behaviours through explicit teaching and collaborative opportunities for the development of desired leadership qualities.
#SC35: SC - Leadership

**SC35.3 Evolution of an Innovative Healthcare Leadership Course: A Comparative Study**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 13:00 to 13:15

**AUTHOR(S):**  
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See Chai Carol Chan, East Suffolk and North Essex NHS Foundation Trust, UK  
Faiza Ali, GKT School of Medical Education, Faculty of Life Sciences and Medicine, Kings College London, UK  
Zakee Abdi, Plovdiv Medical University, Bulgaria  
George Miller, School of Medicine, University of Central Lancashire, UK  
Johann Malawana, School of Medicine, University of Central Lancashire, UK

**ABSTRACT:**

**Background:** Strong leadership competencies have been identified as crucial elements for encouraging health systems that are responsive to population needs. Over the last three years, The Healthcare Leadership Academy (HLA) course has evolved from a series of masterclasses with healthcare leaders, into a formalised curriculum following a rigorous set of practical sessions. This study aimed to assess how the change in programme structure affected scholars perspectives on key components of healthcare leadership training.

**Summary of Work:** To understand the change in perceived key aspects of leadership training, two series of semi-structured interviews were conducted with the first (2017-18, 10 of 11 scholars interviewed) and third HLA cohorts (2019-20, 14 of 89 scholars). The interviews were recorded, transcribed and independently reviewed by two assessors. A qualitative analysis using a three-level data coding process was performed. Two codebooks were compiled and compared.

**Summary of Results:** Three main areas of change in scholars perceptions were identified. Firstly, while members of the first cohort appreciated reflection on the nature of leadership, the participants of the 2019-20 cohort were primarily focused on applying their new leadership knowledge in practice. Secondly, the scholars of the 2017-18 cohort emphasised the need for finding support and guidance for conducting their individual projects. In contrast to that, the third cohort felt empowered to become self-starters and drive change. Lastly, networking and belonging to a community of like-minded individuals were important to both cohorts, however, the 2019-20 group expressed less emphasis on using the course as a platform for connecting with current healthcare leaders but rather with their peers.

**Discussion and Conclusions:** The study showed that shifting the focus of the HLA curriculum to practical sessions resulted in a change of perceived key components of healthcare leadership training. It was highlighted that the scholars who were equipped with communication, negotiation, and campaigning skills were more comfortable in self-directing their projects and further advancing their competencies in real-world situations.

**Take-home Messages:** Formalisation of a healthcare leadership curriculum into a series of structured sessions supported participants to become leaders through developing practical skills and building a network of peers. It also empowered scholars to take responsibility for solving problems by pursuing independent projects.
#SC35: SC - Leadership

#SC35.4 Is the ladder broken? Under-representation of female doctors in academic leadership and clinical positions in Pakistan (7884)

Date of Presentation: 30 August 2021
Time of Presentation: 13:15 to 13:30

AUTHOR(S):
Muhammad Abdullah Qazi, Centre for Medical Education, University of Dundee, UK*
Susie Schofield, Centre for Medical Education, University of Dundee, Scotland UK
Catherine Kennedy, Centre for Medical Education, University of Dundee, Scotland UK

ABSTRACT:
Background: The number of female medical students and doctors is increasing globally. In many countries there is underrepresentation of women in academic leadership positions despite equal or greater numbers entering the profession. In Pakistan female medical students outnumber their male counterparts, but evidence on their career trajectories is currently lacking.

Summary of Work: Quantitative methods were employed, mainly descriptive statistics on SPSS 23 using retrospective data collected from the Pakistan Medical & Dental Council (PMDC)’s online database. This cross-sectional study explores the proportions of male and female doctors across different stages of their career throughout the country in undergraduate academic medicine. Data for 18,495 doctors registered as faculty in 102 medical schools in 2018 were collected.

Summary of Results: Female doctors registered as undergraduate faculty make up 43.5% of the total. They outnumber their male counterparts in the most junior positions (56% lecturers / registrars female). As we go up the ladder from junior to senior positions, female doctors proportions decrease, with 47.3% senior lecturers or senior registrar, 35.2% assistant professors, and 32.2% associate professors. In the top academic positions only 23.2% and 5.8% of the medical professors and head of institutions respectively were female. It was also found that in non-clinical departments female doctors outnumber their male counterparts (53.3% of the total). However, in clinical departments only 32.7% of all doctors were women. There was marked imbalance in surgical specialties, with 94.5% of the doctors in gynaecology and obstetrics being female, reducing to 8.9% in otolaryngology.

Discussion and Conclusions: Comparable to evidence from other parts of the world, a downward trend of female doctor representation is evident as we move from junior to senior positions. In non-clinical departments female doctor proportions were higher than in clinical departments.

Take-home Messages: There is a widespread belief in Pakistan that women qualify as medics to attract good husbands then leave the profession. Although female representation in faculty decreases markedly moving up seniority, there is good representation at the lowest level. The next step is to investigate the reasons for this decline. Only then can we develop strategies to address barriers and measure their impact.
#SC35: SC - Leadership

#SC35.5  Transforming organisational culture through multi-professional leadership training: A mixed methodology approach (8847)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 13:30 to 13:45

**AUTHOR(S):**  
Saman Zaman, NHS, UK*  
Indranil Chakravorty, St Georges NHS, UK  
Julie Goldie, St Georges NHS, UK

**ABSTRACT:**

**Background:** Organisational culture is defined as a pattern of basic shared assumptions that a group has regarding its internal integration and external adaptations. Large organisations, including NHS Trusts, are increasingly complex in terms of their internal structures and the external opportunities and threats they face. This has become even more evident in the current coronavirus-19 pandemic. National staff surveys of NHS Trusts show a disengagement of the general workforce with senior organisational leadership, and a pervasive feeling of disempowerment. This is concerning from both a staff-wellbeing and retention perspective, but also staff engagement is associated with better patient outcomes and overall better organisational performance. Workforce disengagement is a symptom of the wider organisational culture. Our work sought to understand the reasons behind this in our organisation, and develop a potential solution to address this problem through multi-professional education.

**Summary of Work:** We undertook a mixed-method approach: 1) review of national staff survey results, culture report and literature 2) semi-structured interviews with organisational leadership 3) staff questionnaire (developed from steps 1 and 2) 4) staff focus groups and semi-structured interviews

**Summary of Results:** Review of the literature asserted that leadership is the most malleable influence on culture. Data from our organisation supported the need for empowerment of the clinical workforce through leadership training, and we adopted an emergent approach to designing a multi-professional leadership programme with an applied quality improvement component. The purpose of this was twofold: 1) content promoting collective leadership and systems-thinking; 2) space for generative dialogue among professions.

**Discussion and Conclusions:** We assessed our programme based on validated self-assessed leadership competency tools, as well as impact on behaviour and engagement. This was carried out through questionnaires and interviews of the course participants. Although culture cannot be directly changed by defined actions, our programme created an environment for change to allow culture shift.

**Take-home Messages:** 1) Understanding organisational culture is vital for improving healthcare systems 2) Collective leadership is the idea of leadership of all, by all and for all and can be utilised to foster staff engagement 3) Creating environments for change include space for conversation across silos, and multi-professional education is a vital tool for this.
# SC35: SC - Leadership

# SC35.6  Learn to Lead: How Trainees Can Learn from Leaders in the COVID-19 Crisis (8024)

Date of Presentation: 30 August 2021
Time of Presentation: 13:45 to 14:00

AUTHOR(S):
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Kavya Davuluri, University of Michigan Medical School, USA
Taylor Standiford, University of Michigan Medical School, USA
David Portney, University of Michigan Medical School, USA
Larry Gruppen, Learning Health Sciences, University of Michigan, USA
Alexandra Vinson, Learning Health Sciences, University of Michigan, USA

ABSTRACT:
Background: The COVID-19 pandemic posed a unique challenge for leadership education: in previous crises, medical trainees were actively involved in the responses. However, in an effort to decrease the spread, medical students were pulled from clinical rotations. While necessary, these efforts have challenged the education of our future health care leaders. Therefore, the need for innovative ways to educate trainees and impart physician leaders insights are as imperative as the need for strong leadership.

Summary of Work: Sixteen physician leaders from Michigan Medicine took part in semi-structured interviews between April and May 2020. Participants were asked open-ended questions about the attributes and techniques that were important to personally navigate and effectively lead during a crisis. The authors analyzed the interviews using thematic analysis.

Summary of Results: Participants described three overarching themes of leadership during the COVID-19 pandemic: 1) bringing together a diverse team with clear, shared goals; 2) using a range of strategies to tend to their teams' as well as their own wellbeing; and 3) engaging in leadership reasoning to learn from others and reflect on their own actions in order to inform their future leadership practice.

Discussion and Conclusions: The results of this study reveal several salient themes of crisis leadership during the COVID-19 pandemic. Our participants overwhelmingly acknowledged the importance of communication for effective leadership, and emphasized that the pandemic made high quality communication and transparency a priority. Participants also supported their teams during the pandemic by actively acknowledging their staffs' wellbeing and employing strategies to mitigate their moral distress. Our leaders spoke openly about their own mental health and how they attempted to alleviate stressors brought on by the COVID-19 pandemic by reflecting on both best practices and leadership mishaps to improve their crisis leadership skills.

Take-home Messages: The COVID-19 pandemic will not be the last global health crisis that many of our physicians or trainees will face, which makes capturing and sharing the insight of our seasoned physician leaders increasingly important. Many of the lessons physician leaders shared are of value for medical trainees to be effective leaders and strong physicians. Findings may be incorporated into best practices and preparations to inform future health care leaders.
#SC36: SC - COVID-19 - Postgraduate & Continuing Education

#SC36.1 Moving towards Mastery: A Needs Assessment for Preparing CPD Leaders to Develop Programs using Educational Technology (9319)

Date of Presentation: 30 August 2021  
Time of Presentation: 12:30 to 12:45

AUTHOR(S):  
Heather MacNeill, University of Toronto, Canada*  
Morag Paton, University of Toronto, Canada  
David Wiljer, University of Toronto, Canada

ABSTRACT:  
Background: COVID-19 has precipitated rapid change in CPD design and delivery, and hybrid or blended models will likely continue to be in demand long after the pandemic has abated. Provider organizations need to retool and develop new skills and competencies to create effective CPD using technology (1). In order to do so, faculty and staff need resources and support (2). The aim of this study is to understand CPD providers knowledge, comfort level, and learning needs for developing CPD programs using educational technology.

Summary of Work: Recognizing the importance that creating an expectation of efficacy can enable subsequent mastery, Banduras Theory of Self-Efficacy (3) was used in constructing the various domains of the survey. We developed a quantitative survey (5-point Likert scales, MCQ, rank-order responses) exploring domains such as confidence related to developing online programs, perceptions of online CPD, and knowledge of supports available.

Summary of Results: We piloted the survey tool in June 2020 inviting institutional departmental CPD leaders (n=15) to participate (60% response). Participants agreed the survey had face validity. More survey respondents (33%) perceived that their CPD program participants were confident in making the transition to online than themselves as leaders (16%). The top perceived advantage of utilizing educational technology was increased reach of program access, with the top disadvantage being a lack of informal networking. A revised survey will soon be deployed to institutional Chairs of accredited program/conferences locally (n=430) and internationally (through SACME- the Society of Academic Continuing Medical Education).

Discussion and Conclusions: These results reflect similar reports to healthcare educators feeling ill prepared to teach with technology and perceived limited opportunities for faculty development and support in the area.

Take-home Messages: CPD recognizes the importance of moving towards mastery in educational technology; both now, and into the future. Although the pandemic has provided an opportunity to gain a comfort level in teaching with technology, we should continue to discover best practices for teaching in these new environments and how to prepare faculty and staff to use pedagogically sound approaches online.
#SC36.2 Multiple and multidimensional transitions during COVID-19 (and beyond): A qualitative longitudinal study of Scottish doctors (9192)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 12:45 to 13:00

**AUTHOR(S):**  
Gillian Scanlan, The University of Dundee, UK*  
Lisi Gordon, The University of Dundee, UK  
Tricia Tooman, The University of St Andrews, UK  
Kim Walker, The University of Aberdeen, UK  
Patrick Cairns, The University of St Andrews, UK  
Julie Ferguson, NHS Education for Scotland, UK

**ABSTRACT:**  
**Background:** Doctors experience multiple, interacting transitions throughout their careers which can challenge wellbeing in multiple domains. The wellbeing of doctors is a priority issue and COVID-19 has magnified existing challenges. Whilst anecdotal reports are common in the media, there is limited empirical study of doctors' experiences, particularly how wellbeing is impacted beyond the physical and psychological and into the social and cultural domains. To address this gap, we explored the transitions experienced by doctors during (and BEYOND) the COVID-19 pandemic and how this affected their wellbeing in multiple domains.

**Summary of Work:** Doctors working across the career continuum in primary and secondary care (n=100) were recruited to a four-month longitudinal audio-diary study. One hundred doctors from all 14 NHS territorial boards in Scotland undertook an initial interview. Of these, 67 doctors shared diaries for between 2-4 months and 83 completed second interviews after 2-4 months, a further set of interviews are planned in March 2021. Data were thematically analysed using an abductive approach informed by Multiple Multi-Dimensional Transitions (MMT) theory and the Trainee-trained transitions (T3D) model.

**Summary of Results:** Doctors experienced multiple interacting and impacting transitions in multiple contexts including: their workplace (e.g. redeployment/working from home); individual roles (e.g. patient-doctor relationship); educational context (e.g. increased online flexible learning) and home life (e.g. home schooling/spending more time with family). These transitions impacted their wellbeing (both positively and negatively) in multiple domains including: psychological (e.g. anxiety around contracting the virus); physical (e.g. discomfort with long periods of wearing PPE); social (e.g. new ways of team working with colleagues); and cultural (e.g. prioritisation of rest areas for staff).

**Discussion and Conclusions:** Our study shows that core constructs of wellbeing are multi-faceted and interconnect with both MMT theory and the T3D model. Understanding these constructs will allow medical educators and policy makers to plan for and support doctors' wellbeing during and beyond the current pandemic.

**Take-home Messages:** A transitions lens provides a way to explore the complexity of doctors' experiences during times of uncertainty both during and beyond the COVID-19 pandemic. Furthermore, this approach allows us to better understand all facets of wellbeing, particularly in the cultural and social domains which are currently underdeveloped.
#SC36: SC - COVID-19 - Postgraduate & Continuing Education

#SC36.3  Dilemmas and solutions - experiences of a national Family Medicine applied knowledge licensing test during a pandemic (9263)

Date of Presentation: 30 August 2021  
Time of Presentation: 13:00 to 13:15

AUTHOR(S):  
Chris Elfes, Royal College of General Practitioners, UK*  
MeiLing Denney, Royal College of General Practitioners, UK  
Carol Blow, Royal College of General Practitioners, UK  
Roisin Cartwright-Terry, Royal College of General Practitioners, UK  
Catherine Neden, Royal College of General Practitioners, UK

ABSTRACT:  
Background: The unprecedented COVID-19 pandemic brought significant challenges to all of medicine, including primary care training and examinations. The MRCGP AKT is high-stakes licensing 200-item MCQ for UK trainee family physicians and is part of an assessment tripos that, up to the onset of the pandemic, included a Clinical Skills Assessment using Simulated Patients and workplace based assessment. The AKT is blueprinted onto a curriculum content specification and computer delivered three times a year at test centres across the UK. It tests the knowledge base underpinning independent general practice within the context of the UK National Health Service. We report on the challenges and dilemmas faced during the pandemic, decisions taken, and lessons learned. Rapid exam changes needed to be made, and communicated effectively to candidates, whilst maintaining standards and fairness to candidates.

Summary of Work: Challenges included lockdown travel restrictions, reduced capacity, social distancing and shielding candidates being unable to leave home. The April 2020 AKT was cancelled and prioritisation measures implemented to ensure candidates at the end of their training could enter the (stressed) workforce. We engaged with a wide range of stakeholders, carefully looked at remote testing, made contingency plans prioritised for those unable to sit exams and changed exam regulations to ensure fairness to candidates. In this emergency, we delivered a previously published exam which some candidates were unaware they had sat previously, and assessed how these candidates performed. We compared cohort performance before and during the pandemic.

Summary of Results: We summarise why we did not remote test, how we obtained key worker status, and adapted contingency plans. Analysis of candidates who had previously sat the same exam showed they performed less well. Despite wide-ranging changes in training and workplace experience, there was no significant difference in cohort performance overall pre-and peri-pandemic.

Discussion and Conclusions: COVID-19 constraints changed trainees clinical exposure, restricted training and supervisor support. However, exam preparedness did not appear adversely affected when measured by overall pass rates. Unexpectedly, candidates who sat an identical exam did not benefit from previous exposure.

Take-home Messages: Involving stakeholders in key decisions and regular communications are essential. Test security and standards were not compromised.
ABSTRACT:

**Background:** During the first wave of the covid-19 pandemic, all routine dental care stopped in Wales, UK. Postgraduate trainees experienced disruption to their training as a result and some were redeployed to urgent dental centres or other clinical areas, to help in the response.

**Summary of Work:** Postgraduate dental trainees across Wales were invited to take part in an online survey exploring the impact of the pandemic in terms of their learning, development, mental health and well-being.

**Summary of Results:** 44 out of 92 trainees completed the survey, yielding a 48% response rate. 80% (n=35) of respondents were concerned about the impact of covid-19 on their training, with 60% (n=26) feeling it has affected their future careers. 73% (n=32) feel more stressed as a result of the pandemic and 82% (n=36) believe it has negatively impacted their mental health. 37 (84%) reported that they had performed fewer clinical procedures and 36 (82%) had educational events cancelled due to covid-19. There were some positives reported. 24 (55%) felt that it improved their ability to cope with stressful situations and 22 (50%) felt that their communication skills have benefited.

**Discussion and Conclusions:** Covid-19 has had a negative impact on dental trainees in Wales due to the reduced level of clinical training compared to that originally anticipated. Trainees have had educational activities cancelled and have found it difficult to meet the objectives in their personal development plans. Trainees feel more stressed as a result of this and the impact it may have had on their future careers. However, they have also gained different experiences and skills such as improved leadership and communication skills. Trainees feel that extending training posts, increased departmental teaching and the ability to carry over their annual study budget allowance to the following year would help reduce the impact of the pandemic on their training.

**Take-home Messages:** Covid-19 significantly impacted the training experiences of postgraduate dentists in Wales and trainees are concerned about the impact this may have on their future careers. Trainees mental health must be taken into consideration if future lockdown or similar events occur.
#SC36: SC - COVID-19 - Postgraduate & Continuing Education

#SC36.5 The Leaderboard. A novel method of enhancing team collaboration within the online environment (8746)

Date of Presentation: 30 August 2021
Time of Presentation: 13:30 to 13:45

AUTHOR(S):
Becky Stout, London School of Hygiene and Tropical Medicine, UK*
David Moore, London School of Hygiene and Tropical Medicine, UK
Philip Gothard, London School of Hygiene and Tropical Medicine, UK

ABSTRACT:

Background: Amidst the COVID-19 pandemic, human connection is more important than ever. As countries move into lockdowns and international travel is increasingly limited, postgraduate education is moving to the virtual environment. The DTM&H is a short, 12-week course attended by a global cohort of students. Prior to the pandemic, it was run in-person, with students citing a major strength as collaborating with like-minded peers.

Summary of Work: We used social constructivist theory to implement a method of team learning and collaboration through the creation of The Leaderboard (TL). For the duration of a module, students were assigned to teams. They attended a series of live lectures via zoom and after each talk individually completed a set of five multiple-choice questions (MCQs). After, they went into break-out rooms where they discussed the MCQs in their teams, agreeing on answers. They returned to the main room where one nominee per team voted for their agreed answer. After each answer was revealed there was time for clarification and debate. At the end of each session, team scores were tallied over a total of six TL sessions with winners announced at the end of all sessions. To evaluate our intervention, we delivered a questionnaire.

Summary of Results: 37 out of 47 students completed the questionnaires. 78% agreed (n=20) or strongly agreed (n=9) that the more TL sessions the team did, the better the group worked together. 59% agreed (n=17) or strongly agreed (n=17) and 32% (n=12) were neutral that TL helped to develop teamwork skills within the online environment. Positive qualitative comments included that students enjoyed the group work and it consolidated learning. Negative comments included not having enough time to discuss answers in their teams.

Discussion and Conclusions: We demonstrate one method that can be adopted to improve team collaboration and teamworking within the online environment. We found that through placing students in a single team over a series of competitive tasks against other teams, this helped to reinforce learning and also to improve collaboration.

Take-home Messages: The Leaderboard is one method of encouraging team collaboration within the virtual environment. Team competition with peers can help reinforce learning within this environment.
#SC36: SC - COVID-19 - Postgraduate & Continuing Education

#SC36.6 Full-remote RaTs fellowship does not decrease participants’ satisfaction

Date of Presentation: 30 August 2021
Time of Presentation: 13:45 to 14:00

AUTHOR(S):
Tadayuki Hashimoto, Hashimoto Municipal Hospital, Japan *
Shunsuke Kosugi, Iizuka Hospital, Japan
Takeshi Kanazawa, Otomachi Hospital, Japan
Junichi Taniguchi, Kumamoto University, Japan
Junji Otaki, Tokyo Medical University Hospital, Japan
Makoto Kikukawa, Kyushu University, Japan

ABSTRACT:
Background: The authors developed and reported teaching competencies and EPAs for residents in AMEE 2016, 2018, and 2019. Based on these, we have held year-round longitudinal face-to-face workshops (RaTs fellowship) in 2018 and 2019. Because of the COVID-19 pandemic, we started a full-remote fellowship in 2020.

Summary of Work: We have already conducted face-to-face RaTs fellowships in 2018 and 2019 with 23 participants in total. In 2020, we gathered 26 participants who joined our full-remote fellowship from all over Japan. All fellowships consisted of 5 modules including 10 sessions, covering the teaching competencies. To compare the satisfaction of each style, we examined the differences between questionnaires of the face-to-face (2018, 2019) and full-remote (2020) fellowships.

Summary of Results: The characteristics of participants were quite similar and there was no significant difference in the participation rate of each session. Among all sessions, there were no significant differences in participant satisfaction or the total score of satisfaction between the two styles. Additionally, the collection rate for pre-assignments and post-assignments was significantly increased in a full-remote group.

Discussion and Conclusions: Before the start of the full-remote fellowship, some participants asked for a face-to-face session once the pandemic had calmed down, but delivering the fellowship remotely did not reduce the participation rate or satisfaction score compared to doing so face-to-face. In the free comments on the questionnaire, many participants said that they were satisfied enough with the remote session because of the sufficient support and preparation of the organizers.

Take-home Messages: Even a year-round longitudinal workshop can provide highly satisfactory sessions with sufficient support and preparation.
#W34: Workshop 34

#W34 Greater than the sum of its parts: Using composite narratives to present findings in medical education research (8220)

Date of Presentation: 30 August 2021  
Time of Presentation: 12:30 to 14:00

PRESENTER(S):  
Zoe McElhinney, University of Dundee, UK  
Catherine Kennedy, University of Dundee, UK

ABSTRACT:  
Background: Composite narratives are a little used method of presentation of findings in medical education research, but have been used to good effect in the presentation of research findings in other disciplines. Composite narratives blend the voices of researcher and participants, aiming to convey richness and complexity of data while maintaining anonymity of participants. As such they are particularly useful in settings where the research participants are a small or distinctive group. Composite narratives allow for the presentation of data in a form that is accessible to those outside academia and can thus increase the reach and impact of research findings.

Who Should Attend: Medical education researchers at all levels who are interested in exploring the use of composite narratives in presenting qualitative research findings in medical education research.

Structure of Workshop: The workshop will involve a number of sections:
  - Introductions - participant introductions.
  - Background information - a short presentation explaining what is meant by the term 'composite narratives', giving background to their development and use in research, and outlining when this approach could be of value in medical education research.
  - Comparing approaches to creating composite narratives - working in small groups, participants will be provided with examples of different approaches to producing and using composite narratives to consider and discuss.
  - Example - presentation of author's approach to using composite narrative to present findings in medical education research.
  - Creating composite narratives - working in small groups, participants will be given a number of short narratives from publicly available resources to use in the creation of a composite.
  - Round up and discussion of participants’ ideas for application in own research.

Intended Outcomes: To develop an understanding of the potential of narratives in medical education research. To develop and awareness of different approaches to using composite narratives to present research findings. To have an opportunity to participate in the production of composite narratives.

Level: Introductory – no previous knowledge required.
#W36: Workshop 36

#W36  Young Medical Educators Group: Coping with toxic working environments (8286)

Date of Presentation: 30 August 2021  
Time of Presentation: 12:30 to 14:00

PRESENTER(S):  
J.M. Monica van de Ridder, College of Human Medicine Michigan State University - Spectrum Health, USA  
Soeren Huwendiek, Institute for Medical Education, Medical Faculty, University of Bern, Switzerland  
Charlotte Ringsted, University of Aarhus, Denmark  
Stewart Mennin, University of New Mexico School of Medicine, USA

ABSTRACT:  
Background: Each working environment has its own culture. Sometimes the culture is very difficult to deal with - it is toxic. Signs of toxic environments are for example: high turnover in people, lack of communication or negative communication, high rate of employee sickness, or little or no enthusiasm among employees. Causes of a toxic environment are for example narcissistic leadership, lack of integrity among colleagues, or extreme pressure to perform. Working in a toxic environment can affect your performance: it can lead to less productivity, stress, loose of trust, low self-esteem, and negatively affect well-being. Although surviving in a toxic work environment can be a good learning experience, in general, as a Young Medical Educator it is not the place where you would like to be. In this workshop we would like to discuss strategies to cope with a toxic environment based on evidence from the literature and inputs from the facilitators and participants experience on what works.  
Who Should Attend: Those who are relatively new to medical education.  
Structure of Workshop: After the introduction (10’), we will:  
- Analyze what experiences people have with toxic working or learning environments in their own context including cultural challenges. (20’)  
- We will present a very short summary of the literature on the causes of a toxic environment and how it affects your performance. (5’)  
- Group work with examples of strategies dealing with of toxic environments (30’), including large group discussion (20’). Sharing take home message will close the session. (10)  
Intended Outcomes:  
- Recognize signs of and your reactions to a toxic environment.  
- Be aware of several strategies to cope with toxic environments,  
- Share what you learn with others inside and outside of your organization.  
Level: Novice/Intermediate
#W37: Workshop 37

#W37 Fostering self-awareness to address underlying vulnerabilities to the mental health of medical students (9490)

Date of Presentation: 30 August 2021
Time of Presentation: 12:30 to 14:00

PRESENTER(S):
Di Eley, The University of Queensland, Australia
Aviad Haramati, Georgetown University School of Medicine, USA
Jo Bishop, Bond University, Australia
Stuart Slavin, Accreditation Council for Graduate Medical Education, USA

ABSTRACT:

Background: A high incidence of psychological distress manifesting as anxiety, stress and depression has been well documented in medical students. The consequences of this distress on a personal level can contribute to serious mental health issues including suicide ideation, and on a professional level may ultimately affect patient care. A variety of factors is associated with increasing distress as medical training progresses. These include individual personality characteristics, a highly competitive learning environment, systems for grading and evaluation, and a hidden curriculum that encourages unhealthy comparison with peers that reinforce maladaptive perfectionistic tendencies. Participants will discuss how the culture medicine and the learning environment can be improved to alleviate some of the issues causing distress and help students understand how they can personally adapt and cope. Examples of greater teacher-learner engagement can help students become more self-aware, acknowledge their vulnerabilities and contribute to a healthier learning environment.

Who Should Attend: Educators and students / trainees

Structure of Workshop: Two parts: four 15 minute presentations (10 min facilitator + 5 min audience activity) and a 50 minute audience engagement.

• Setting the stage: Overview of personal vulnerabilities to psychological distress
• Fostering Self-Awareness: Insights and examples that address the potential of self-awareness
• Creating a Safe Environment: Importance of teacher-learner partnerships in promoting well-being
• Perspectives on cognition and well-being: Insights and examples of how school curricula could evolve from contributing to poor mental health to promoting lifelong mental well-being.

Intended Outcomes: This session will discuss topical issues around medical student mental health and the role that medical education can play in fostering a more positive and healthier learning environment. Curricula, assessment and a healthy culture that contribute to a realistic balance of expectations by students and faculty should be sought. This session will propose actions by educators to create a learning environment that aligns with the graduate attributes necessary to be a competent health practitioner, and where the overarching ethos is to nurture personal growth and resilience.

Level: All levels
#W38: Workshop 38

#W38 Zooming into Active Learning - Strategies for Enhancing Learner Engagement in Virtual Educational Sessions (8355)

Date of Presentation: 30 August 2021
Time of Presentation: 12:30 to 14:00

PRESENTER(S):
TJ Jirasevijinda, Weill Cornell Medical College, USA
Elizabeth Fiorino, Weill Cornell Medical College, USA
Elizabeth Kachur, Medical Education Development, USA
Chaoyan Dong, Sengkang Health, Singapore

ABSTRACT:
Background: The COVID-19 pandemic has turned medical education upside down. As physical distancing drives classroom learning into virtual platforms, many educational activities have become more passive and unidirectional. Without effective use of available tools to engage learners in online teaching, instructors risk losing learner interest and not achieving learning objectives. In this highly interactive, hands-on workshop, participants will explore and practice using online teaching tools and strategies to engage and assess learners in virtual education sessions. Facilitators will guide participants through functions on Zoom—a virtual platform widely used in healthcare education—and demonstrate how to use them in conjunction with Polleverywhere, Padlet and Google Drive to maximize learner interaction. Participants will apply the tools to transform one of their own teaching sessions, whether it is a large lecture, small-group teaching or skills group.

Who Should Attend: Faculty of all levels who teach in virtual sessions.

Structure of Workshop: Introduction: Introduction followed by assessment of participants’ teaching responsibilities and discussion of challenges of online teaching (10min)
Demonstration and practice: Instructors will demonstrate the following tools, including strategies to enhance interactivity and learner engagement; participants will have the opportunity to practice (25min)
- Zoom functionalities: Chat, Annotate, Poll, Whiteboard, Breakout Room
- Additional platforms: Polleverywhere, Padlet, Google Drive
Small-Group Application: Participants will break into small groups to formulate strategies for transforming their own teaching sessions using the tools explored above. Each small group will focus on a different educational format (e.g., large lecture, small group teaching) and be facilitated by an expert faculty.
Worksheets will be provided to facilitate discussions (30min)
Large-Group Debrief: A representative from each small-group will share their work (15min)
Wrap Up: Participants will reflect on take-home lessons and share concrete steps they are committed to implementing in the next six months (10min)

Intended Outcomes: By the end of the workshop, participants should be able to:
1. Discuss advantages and challenges of online teaching
2. Describe tools available on Zoom and other free online platforms to enhance virtual educational sessions
3. Apply these tools to various pedagogical formats (e.g., large lecture, small-group teaching, skills group)
Level: Introductory/Intermediate
#P5: Plenary 5

#P5 Take-home messages from AMEE 2021

Date of Presentation: 30 August 2021  
Time of Presentation: 14:15 to 15:30

The Student's Perspective: İrem Aktar, Medical Education Director, European Medical Students Association (EMSA)  
Postgraduate Education: Paul de Roos, Uppsala University, Sweden  
Faculty Development: Yvonne Steinert, McGill University, Canada  
Response to COVID-19: Paulina Sobierańska, Medical University of Lodz, Poland  
Assessment: Richard Fuller, University of Liverpool, UK

Moderator: Lawrence Sherman, USA

Biographies:
İrem Aktar is a fourth-year medical student at Istanbul University Faculty of Medicine with a great interest in medical education, always eager to learn, grow and contribute actively. For 4 years she has been working with EMSA and is currently serving as Medical Education Director. She is an active medical education trainer and soft skills trainer. A past member of the AMEE Student Task Force, she has also completed the Essential Skills in Medical Education (ESME) course. Studying medicine and medical education are her greatest passions. She is also particularly interested in internal medicine & nephrology.

Paul de Roos is a Neurologist with 13 AMEE congresses attended since 2005 and with a broad interest in medical education from student engagement, peer education to learning environment design and workplace based learning to all topics related to postgraduate training. He is a licensed neurologist since 2021 with education subspecialisation, Honorary Life member of European Medical Students' Association since 2016 for continuous support in medical education section long beyond graduation. His undergraduate medical training was done at Vrije Universiteit Medical Center in Amsterdam, The Netherlands, where he graduated in 2009 and his Neurology residency with an education profile was done at Uppsala University in Sweden. In his free time he works as independent adult educator and workshop facilitator with a focus on the healthcare sector.

Yvonne Steinert, a clinical psychologist and Professor of Family Medicine and Health Sciences Education, is the Richard and Sylvia Cruess Chair in Medical Education and the former Director of the Institute of Health Sciences Education in the Faculty of Medicine and Health Sciences at McGill University. She is actively involved in undergraduate and postgraduate medical education, educational research, and the design and delivery of faculty development programs and activities. Her research interests focus on teaching and learning in the health professions, the impact of faculty development on the individual and the organization, professionalism and professional identity formation, and the interplay between culture and health professions education. She has written and presented extensively on topics related to faculty development and medical education and was recently named to the Order of Canada in recognition of her contributions to the advancement of pedagogical principles, faculty development, and new training approaches in Canadian medical education.

Paulina Sobierańska is a psychologist working at Centre for Medical Education at Medical University of Lodz (Poland). As a course coordinator she is actively involved in delivery of courses for undergraduate health professions students on medical and academic professionalism, cultural competence and communication, as well as providing faculty training on teaching methods, assessment and TEL among many topics. She is the Chair of BEME International Collaborating Centre (BICC) in Lodz, and has been tutoring AMEE Essential Skills in Medical Education (ESME) Online courses since 2017. During the first wave of COVID-19 pandemic she was supporting faculty in transition to online teaching and was co-organising assessment for the Medical Faculty.
Richard Fuller is a Consultant Geriatrician/Stroke Physician and Deputy Dean of the School of Medicine at the University of Liverpool, UK. His work focuses on exciting new initiatives in curriculum design, mobile technology, assessment and personalised learning across health professions and the continuum of undergraduate and postgraduate practice. His main research interests focus on assessment, working with a cross institutional group of assessment research colleagues. His current research focuses on the ‘personalisation’ of assessment, to support individual learner journeys. He publishes and speaks regularly at leading international medical education conferences and is a faculty member at a number of leading global assessment courses. He works with an international group of health professions education experts undertaking a review of global consensus guidelines on technology enhanced assessment. He holds a number of national/UK advisory roles, including acting as an assessment expert for the General Medical Council, including leadership of the Tests of Competence Panel. He undertakes a range of international advisory and developmental work in relation to curriculum, senior faculty development and assessment for a number of institutions. He is a member of the executive group of the Association of Medical Education in Europe (AMEE) and chair the assessment panel of AMEE’s Aspire to Excellence initiative.
#S16: Symposium 16

#S16 The Digital Transformation of Faculty Development (7591)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:00 to 17:30

**PRESENTER(S):**  
Yvonne Steinert, Institute of Health Sciences Education, McGill University, Canada  
Ardi Findyartini, Faculty of Medicine Universitas Indonesia, Indonesia  
Michael Gottlieb, Rush University Medical Center, USA  
Subha Ramani, Harvard University, Medical School, USA  
Teresa Chan, McMaster University, Canada  
(On behalf of AMEE Faculty Development Committee)

**Summary:** It has been said that we should never let a good crisis go to waste. This notion has been especially true during the global pandemic, as faculty developers have been thrust into supporting educators and scholars to pivot their programs to effectively use digital technologies for teaching and learning. In fact, faculty developers have had to engage in the online space in two ways. Not only have they had to support hundreds of faculty members in converting their own learning environments, they have also had to concurrently explore how to deliver faculty development working virtually to enhance the skills of colleagues and build virtual communities of practice. During this symposium we will consider how a model for faculty development that incorporates both formal and informal approaches (at individual and group levels) and includes experiential learning, peer coaching and mentorship, workshops and other structured activities, work-based learning and communities of practice, can be enhanced by digital technologies in diverse contexts. More specifically, the goal of this symposium is to describe a framework that will assist educators to plan – or pivot to – digital faculty development; describe different faculty development programs that have been successful in transitioning to online spaces; and discuss the strengths and limitations of transforming faculty development to digital platforms. We will also discuss the challenges we face as we learn together in online and hybrid settings, and how the importance of relationships and social networks, central to faculty development, can be nurtured and maintained. The renewal of our faculty members remains a key priority of all educational programs – and the digital transformation of faculty development is a significant part of this process.
#S17: Symposium 17

#S17 Transforming medical education through a student-driven shared global curriculum (7411)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:00 to 17:30

**PRESENTER(S):**  
Catarina Pais Rodrigues, Medical Student Alliance for Global Education, Portugal  
Philippa Lantwin, European Medical Students’ Association (EMSA), Germany  
Abdullah Al-Khafajy, International Federation of Medical Students’ Association (IFMSA), Iraq  
Evangelos Papageorgiou, Medical Student Alliance for Global Education, Greece  
Aliye Runyan, Medical Student Alliance for Global Education, USA  
Tao Le, University of Louisville, USA  
Trevor Gibbs, AMEE (Moderator)

**Summary:** A symposium at AMEE 2019 asked “what's in and what’s out in the 21st century medical curriculum. The students present proposed a shift on the overall approach towards a transformative learning experience that would prepare students to “think globally and act locally”. Solutions centred on optimizing digital educational resources for knowledge dissemination, and focusing curriculum objectives on larger scale approaches such as emergency preparedness, climate action and health systems resilience. A message that might have seen disruptive then, but couldn't be more relevant in the current times. Therefore, our cohort aims to build on that discussion and explore the potential for medical education transformation through student-led curricular initiatives, such as the Medical Student Alliance for Global Education (MeSAGE) with its network of over 1 million students, that intends to address a broad scope of health systems issues and gaps in medical curriculum.

**What will they gain from participating:**  
At this symposium, we propose a shared vision for the future of medical education. Participants will gain insight and be invited to reflect on:

- the evolving health needs of the communities and what encompasses a global health approach
- the feasibility and importance of a global shared curriculum approach
- how to engage and align multiple perspectives and stakeholders in developing the curriculum, namely how to meaningfully engage and empower students
- how to reshape the medical curriculum to respond to the current times

**Who should participate:** There are three levels of engagement and discussion we intend and for each there is a main target group. At a technical level, we would aim for faculty and students with responsibilities in curriculum design. At a conceptual level, we would aim for faculty and students with expertise in global health matters. And finally, at an interprofessional level, we will explore solutions relevant for all health professions that promote synergic relationships.
#RP8: Research Paper - Critical perspectives on equity in HPE

#RP8.1 Paradigms in ethnicity-related stereotypes: a critical review (7803)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:00 to 16:20

**AUTHOR(S):**  
Anna Casey, Brighton and Sussex Medical School, UK*  
Soham Bandyopadhyay, Oxford University Global Surgery Group, University of Oxford, UK  
Conor Boyle, College of Medical and Dental Sciences, University of Birmingham, UK  
Yousif George Baho, Hull York Medical School, University of Hull and University of York, UK  
Aqua Asif, Leicester Medical School, University of Leicester, UK  
Halimah Khalil, College of Medical and Dental Sciences, University of Birmingham, UK  
Rakesh Patel, Education Centre, School of Medicine, University of Nottingham, UK  
Nermin Badwi, Faculty of Medicine, Zagazig University, Egypt

**ABSTRACT:**

**Introduction:** Stereotypes are often widely-held oversimplified beliefs that homogenise all members of a group. Historically, an exploration of ethnicity-based stereotypes within health professions education (HPE) has primarily focussed on the differential attainment gap between medical students from different minority groups.

HPE literature includes abundant discussion of the phenomenon; stereotype threat. However, the literature fails to characterise the full impact of stereotypes. Whilst alluding to prominent theories such as; stereotype lift, stereotype boost and attributional ambiguity, the theoretical frameworks underpinning them are not explicitly described or critically examined in the context of HPE.

Therefore, this review aims to understand the extent to which ethnicity-based stereotypes play a role in HPE. Through this, we hope to provide guidance for how health professions educators may refine their practice to meet needs of individual learners and create more equitable learning environments.

**Methods:** A critical review was undertaken to assess the role of ethnicity-related stereotypes in HPE literature. Theoretical and empirical literature pertaining to this topic was ascertained from searching six databases; EBSCO, Google Scholar, JSTOR, MEDLINE, Project Muse and PsychINFO. Additionally, the reference list of included articles was scrutinised to identify literature not attained via the database searches. Full text articles were retrieved and screened for inclusion and disagreements regarding inclusion was resolved by mutual agreement.

Data from included articles was extracted, synthesised and broad concepts were reimagined to present a preliminary understanding of the effects of ethnicity-related stereotypes on learners in HPE.

**Results:** Through reviewing HPE literature, we found evidence that ethnicity-based stereotypes are linked to theories such as stereotype threat, stereotype reactance, attributional ambiguity, stereotype boost, and stereotype lift. HPE literature on stereotype lift; a phenomenon describing how negative stereotypes can improve the performance of individuals who do not belong to the group denigrated by said stereotype, was mainly focused on white students.

Stereotype threat was shown to exist among Black and ‘Asian’ medical students. HPE literature also provided evidence that significant psychological stress as a consequence of stereotype threat is prevalent among some ethnic minority medical students. This review found that ethnicity-based stereotypes, for some individuals, leads to a self-fulfilling prophecy, where individuals are prompted to act in a stereotype-consistent way. Evidence also highlights that self-fulfilling prophecies may also be imposed by individuals from other ethnic groups. Some findings within the HPE literature did not fit under existing theories. To elaborate, evidence alludes to an alternative strategy adopted by some ethnic minority medical students in order to dissociate themselves from a negative stereotype.

**Discussion and Conclusions:** ENegative stereotypes are under-researched though common in HPE, altering professional aspirations and interactions between ethnic minority students, their peers and their educators. Their full impact is poorly understood, but several areas of impact were suggested by our review.
We propose the theory of ‘stereotype masking’ to understand the dissociation of personal identity to avoid negative stereotypes in order to mitigate the effects of judgement and feeling like ‘the odd one out’. This creates psychological stress leading to poorer mental health outcomes as well as reduced performance. Our review suggests that educator reflexivity and allyship, rather than reliance on negative emotional responses through stereotype reactance or stereotype lift is the most supportive approach – creating space for learners to challenge stereotypes safely. Furthermore, feelings of being ‘the odd one out’ can be mitigated by discussion groups and networking skills sessions, reducing feelings of a need to ‘stereotype mask’.

More research is needed to expand the literature and explore the numerous themes identified by this review. This will improve HPE for all students, especially those from minority ethnicities, and allow greater understanding of the wider influences of social factors on HPE.
#RP8: Research Paper - Critical perspectives on equity in HPE

**#RP8.2 The Effect of Racial Violence on Black/African-American Physicians (7754)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:20 to 16:40

**AUTHOR(S):**  
_Tasha Wyatt, Uniformed Services University, USA*  
-Taryn Taylor, Emory University, USA  
-Joslyn Richards, Medical College of Georgia, USA  
-Dejuan White, Emory University, USA  
-Nicole Rockich-Winston, Medical College of Georgia, USA

**ABSTRACT:**

**Introduction:** Recent escalations of anti-Black racial violence have prompted minoritized physicians to draw attention to the way structural inequality and racism in the U.S. affects their communities. These perspectives have raised awareness of larger societal issues and the role that academic medicine might play in addressing it. However, these efforts have fallen short in helping the profession understand what it is like for Black physicians to have members of one’s community be targeted for racial violence. Black individuals have a long history of experiencing racial violence in their communities, the most memorable being lynchings. Previous research shows Black physicians have a strong social identity that comes from being a part of their communities. Therefore, there is reason to believe that Black physicians would be affected by the racial violence.

**Methods:** Critical race theory was used as the theoretical framework, which posits that racism is a systemic form of oppression that is embedded in society in ways that disadvantage minoritized individuals and groups, while advancing the interests of whites. Nineteen interviews were collected and analyzed using the concept of racial trauma, the race-based stress that results from unequal treatment in society. Racial trauma is operationalized as the emotional reaction minoritized individuals have to dangerous events, real or perceived, at the level of the individual and community, and across generations. Data were used to link historical trauma (lynching) to the current racial violence in the Black community.

**Results:** The results show that even though participants were not direct victims of racial violence, because their social identity is linked to the Black community, they experienced these events vicariously. The increase in racial violence triggered unresolved personal and collective memories of intergenerational racial trauma, feelings of re-traumatization after more than 400 years of mistreatment by white society, and a process of awakening to their own and their community’s oppression for being Black in the U.S.

**Discussion and Conclusions:** Black physicians experience police brutality and racial violence vicariously by triggering unresolved and unacknowledged personal and collective memories of intergenerational historical trauma. Although lynching has officially declined in the twentieth century as other forms of racial control has curried favor, the Black community is keenly aware of the racially violent ways the white majority continues to assert its dominance in society. Contemporary racial violence needs to be contextualized into this history. Furthermore, as more minoritized physicians enter medicine, our profession must examine the history of these groups to better contextualize their experiences.

**References:**

#RP8: Research Paper - Critical perspectives on equity in HPE

**#RP8.3 Better for all or worse for some? The effect of raising the bar on medical students’ study progress (7746)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:40 to 17:00

**AUTHOR(S):**  
Vera Broks, Erasmus Medical Center, The Netherlands  
Karen Stegers-Jager, Erasmus Medical Center, The Netherlands  
Walter van den Broek, Erasmus Medical Center, The Netherlands  
Andrea Woltman, Erasmus Medical Center, The Netherlands

**ABSTRACT:**  
**Introduction:** Medical schools seek for measures in the academic environment to improve their students’ study progress. One such measure is the academic dismissal (AD) policy. At the same time, medical schools are responsible for a diverse student population and need to deliver future doctors who are representative of the society they take care of. Therefore, it is desirable that measures in the academic environment reinforce equal opportunities for subgroups based on student characteristics. The aim of the current study was to investigate the effect of a stricter AD policy on short-term and long-term study progress in medical school with the intersectional approach. According to this approach, students are part of multiple subgroups which reinforce each other and should therefore be considered together. Whether the effect of a stricter AD policy differs for subgroups of students was studied by intersecting gender, ethnicity and prior education.

**Methods:** Participants were first-year Bachelor students enrolled in 2011 to 2016 in a Dutch medical school. For cohorts 2011-2013, the AD policy consisted of a minimum of 67% of Year-1 credits after 12 months required to continue to Year-2 modules, followed by dismissal after 24 months if students did not succeed in obtaining all Year-1 credits (67%-policy, n=1189). For cohorts 2014-2016 the bar was raised; students were dismissed if they failed to obtain 100% of the Year-1 credits 12 months after enrollment (100%-policy, n=1233). Dichotomous outcome measures on study progress were Year-1 completion and drop-out (short-term) and Bachelor completion in three and four years (long-term). Relationships between the AD policy and study progress for different subgroups were studied with logistic regression analyses.

**Results:** Overall, Year-1 completion-rates increased with the transition from the 67%-policy to the 100%-policy from 51.0% to 70.0% (OR=2.50, 95% CI:2.06-3.03). The positive effect of the 100%-policy was stronger for males (OR=3.60, 95% CI: 2.62-4.98) than females (OR=2.04, 95% CI: 1.61-2.59). This closed the gender performance gap; post-hoc analysis showed that female students performed significantly better than males regarding Year-1 completion under the 67%-policy (43.1% males vs. 56.0% females, OR=0.59, 95% CI=0.47-0.75), whereas no such difference was observed under the 100%-policy (69.1% males vs. 70.3% females). Yet, an increase in Year-1 completion rate was not present for students with non-standard prior education (i.e. not standard Dutch pre-university education) - except for males with a migration background (OR=7.19, 95% CI:2.33-25.73) who no longer underperformed compared to their fellow students under the 100%-policy. The Year-1 drop-out rate doubled - yet remained relatively low - with the introduction of the 100%-policy, from 3.7% to 8.4% (OR=2.41, 95% CI: 1.68-3.53). Mainly students with standard prior education dropped-out more often (OR=3.68, 95% CI:2.37-5.89). Post-hoc analyses showed that under the 67%-policy, students with non-standard prior education dropped-out significantly more often than students with standard prior education (13.1% vs. 2.5%, OR=5.97, 95% CI:3.13-11.15). Under the 100%-policy this gap was no longer present (8.2% vs. 9.5%). Overall bachelor completion rates after three and four years were not affected by the 100%-policy. Notably, females without a migration background and with non-standard prior education suffered from the 100%-policy regarding Bachelor completion after three years (OR=0.29, 95% CI:0.11-0.76).

**Discussion and Conclusions:** Despite increased drop-out rates, the stricter AD policy improved Year-1 completion rates - especially for underrepresented subgroups, thereby improving study progress without harming student diversity on the short-term. However, these positive effects did not hold regarding Bachelor completion rates. Medical schools should be aware that increased performance standards can
result in positive effects on performance of specific subgroups (male students with migration background) and may harm the study progress of others (female students without migration background and non-standard prior education). It is important for medical schools to identify what characteristics or needs cause these differential effects. Only then, medical schools can meet their students diverse needs and optimize student performance.
#RP8: Research Paper - Critical perspectives on equity in HPE

#RP8.4 Unraveling ethnic disparities in rater-based assessments: Effects of scoring form and of perceived similarity (7760)

Date of Presentation: 30 August 2021
Time of Presentation: 17:00 to 17:20

AUTHOR(S):
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ABSTRACT:

Introduction: Systematic assessor bias could be a cause of previously reported ethnicity-related differences in clinical grades, given that assessors are more likely to favor students who are similar to them. (1) Those grade differences are undesirable given the societal benefits of a diverse medical workforce. Bias in assessments could be reduced by adding structure,(2) and checklist are arguably more structured than global rating scales (GRSs). This randomized cross-over experiment tests whether ethnicity-related differences in clinical grades could be reduced by using a checklist rather than a GRS and whether grade differences relate to assessors’ willingness to cooperate with a student and assessors’ perceived student-assessor work behavior similarity.

Methods: Same script videos for ethnic-majority (native Dutch) and ethnic-minority (non-Western migration background) students were created for three clinical cases. Participants were 60 physicians, who were asked to rate six manipulated videos and three filler videos of female medical students depicting the history-taking part of the consultation. Participants were randomly assigned to a scoring form condition, i.e. GRS versus checklist, and were repeatedly and systematically exposed to different student ethnicities in the six manipulated cross-over videos. They assigned grades and indicated how willing they were to cooperate with the student and how much they perceived the student’s work behavior as similar to their own. Data were analysed using ANOVAs (two-way repeated measures and one-way), Friedman’s non-parametric test, Wilcoxon signed-rank test, and Pearson’s correlation coefficient.

Results: Within-subject results showed that native Dutch student videos did not receive higher average assessor’ grades than non-Western student videos, F(1, 58) = .41, p = .52. Also, there was no significant main effect of scoring form on assessors’ grades, F(1, 58) = 0.30, p = .59. The interaction between student ethnicity and scoring form was not significant, F(1, 58) = 0.15, p = .70, meaning that average assessors’ grade differences based on ethnicity did not differ between scoring form conditions. Post-hoc between-subject analyses showed mixed results: only two of the six video-pairs revealed significant differences, one of them showing significantly higher grades for the Dutch student (F(1, 59) = 5.27, p = .03 (Cohen’s d= 0.09), whereas the other video-pair showed significantly higher grades for the non-Western student F(1, 59) = 15.03, p < .01 (d= 1.00). On average, there was no significant difference between assessors’ willingness to cooperate with native Dutch students and with non-Western students (X2(1)= 1.10, p = .29) and their perceived work behavior similarity with the two groups of students (X2(1)= 0.02, p = .89). Post-hoc analyses again revealed mixed results: one video-pair showed significantly higher scores on both willingness ( Z = -2.65 , p = .01 (Kendall’s W= .11) and perceived similarity (Z= -3.00 , p < .01 (W= .06)) for the native Dutch student, whereas another video-pair showed significantly higher scores on both measures for the non-Western student (Z= -4.42, p = <.01 (W= .39), Z = -3.93, p < .01 (W= .24), respectively). For all six videos, there were strong relationships (r’s ranged between .50 and .73) between assessors’ grades, willingness to cooperate and perceived work behavior similarity.

Discussion and Conclusions: No evidence for systematic assessor bias based on student ethnicity was found, nor differential effects of scoring form - GRS versus checklists - on grades. Differences in clinical grades were rather related to whether assessors were willing to cooperate with the student and perceived the students work behavior as similar to their own work behavior. Deep-level similarity, such as perceived similarity in work behavior, appears to be a stronger predictor of grades than surface-level similarity, such
as ethnic similarity. Moreover, ethnicity-related differences in grades did not depend on the level of structure in the scoring form. Future studies could investigate the role of (perceived) similarity in assessments.

**ABSTRACT:**

**Introduction:** The academic development for sessional teachers (adjuncts, casuals, contract, contingent, non-tenured) is relevant as health science students receive instruction in the classroom and clinical setting. The teaching quality of sessional teachers has been questioned due to the variability in their backgrounds, teaching abilities, and motivational levels. These teachers may be especially challenged to improve their teaching skills by a lack of time, support from their university, and support within their clinical setting. They might also struggle with their identity as a teacher. However, research on sessional teachers is limited. The aim of this study was to explore sessional teachers’ needs for faculty development and to compare it to tenured faculty to guide faculty development. We defined sessional teachers as healthcare professionals who are considered non-tenured and teach health sciences students directly in the classroom and/or clinic.

**Methods:** We utilized a sequential explanatory mixed methods design with a survey, followed by qualitative focus groups, resulting in three papers. First, we did a comparative analysis of the differences in motivations, attitudes, identity, and needs of sessional and tenured faculty (Snook et al., 2019b). Second, we utilized structural equation modeling to explore how a sense of connectedness and appreciation predicted educator identity and openness to improve differently for tenured and sessional faculty (Snook et al., 2019a). Finally, we performed a qualitative focus group analysis, with an interview guide based on the survey results (Snook et al., 2020), exploring classroom and clinical sessional teachers’ needs for connectedness and appreciation and identifying specific support needs.

**Results:** We compared the survey responses of 78 tenured and 160 sessional faculty (238/863, 28% response rate) and the three focus groups involved 11 sessional teachers. We identified similarities in needs, motivations, identity and openness to improve when comparing tenured and sessional faculty but differences in preferred faculty development format and feelings of connectedness and appreciation. We found different models for connectedness and appreciation predicting teacher identity and openness to improve when comparing tenured and sessional faculty. While both models indicated a strong association between teacher identity and openness to improve teaching, the differences found seemed to reflect the progression of a clinician to a medical educator and could be utilized to direct faculty development. Thematic analysis of our sessional teacher focus groups identified the importance of orientations, communication, feedback on teaching, convenient and context-specific faculty development, and support for their educator role. Specifically, classroom sessionals needed more connectedness, more appreciation, more access to the learning management system and both different and similar faculty development when compared to clinical sessionals.

**Discussion and Conclusions:** Comparing tenured and sessional teachers quantitatively made it possible for us to identify perceived needs important to sessional teachers. Using models, we were able to explore further how connectedness and appreciation predict educator identity and openness to improve differently for tenured and sessional faculty and make suggestions for advancing educator identity within both faculty types. Asking sessional teachers about their needs through focus groups helped explain the sessional faculty model and added a depth of understanding to the challenges faced by sessional teachers. Finally, recommendations were made for faculty development, departments, and university administrations based on the results, which may address the needs of sessional teachers and advance their academic development. This could have an impact on the quality of teaching of health science teachers and develop teacher identity.

**References:** Snook, A. G., Schram, A. B., & Arnadottir, S. A. (2020). "We have different needs": Specifying support for classroom and clinical sessional faculty. Med Educ, 54(8), 748-757.
#DR2: Doctoral Reports 2

#DR2.2 Deconstructing knowledge translation and the implications for expertise, intraprofessional collaboration and patient-centered care (7668)

Date of Presentation: 30 August 2021
Time of Presentation: 16:20 to 16:40

AUTHOR(S):
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ABSTRACT:

Introduction: Knowledge translation (KT), referring to implementing clinical practice guidelines into the care of patients, is assumed to improve outcomes in the chronic diseases. Research conducted across the learning continuum has tried to identify KT practices that are most effective at embedding the expertise of medical specialists (MSs) into the care provided by primary care physicians (PCPs) who see the majority of patients. However, little is known if or how these KT practices may influence the intraprofessional relationship between PCPs and MSs and whether the power relationships between these two physician groups impact the success of KT. In this thesis, we used concepts of Michel Foucault to examine the assumptions underpinning these KT practices and the implications for expertise, intraprofessional collaboration and patient-centered care.

Methods: Using diabetes as a case, we conducted a Foucauldian discourse analysis to examine historical shifts in discourses of care and the implications for the MS-PCP intraprofessional relationship. We used Foucault's concept of governmentality to guide data collection and analysis. Specifically, we compiled and analyzed a textual archive of documents published over the past 100 years describing how care should be provided, and transcripts from interviews with 15 physicians to examine how discursive elements are being enacted and experienced today by physicians.

Results: Our findings reveal shifts in the expected conduct of physicians related to dominant discourses in different historic times. As discursive elements remain present today and enacted by physicians at the point of care with patients, our analysis makes visible a number of material effects, diversity, contradictions and conflicts. First, physicians simultaneously enact historically-constituted roles to engage with patients as both passive recipients of care and active participants in care. This finding disrupts a key KT assumption that implementing clinical practice guidelines is a linear, one-way process in which evidence-based medicine flows through physicians onto patients. Second, the intraprofessional relationship is constructed in a way that unintentionally creates and reinforces a professional hierarchy and privileges a disease-centric approach to care in which MSs retain authority and PCPs remain subordinate. Third, as physicians strategically deploy patient-centered care as a means to navigate the tensions created by internalizing different discursive roles. However, through the Foucauldian lens of resistance, the subsequent construction of patient-centered care my paradoxically reinforce rather than counter biomedical approaches to care.

Discussion and Conclusions: KT practices are highly political processes that may have unintended consequences for PCPs and MSs, the nature of their intraprofessional relationships, and ultimately the care provided to patients. One key finding of this thesis is it shows the short-sightedness of problematizing KT as the inability of PCPs (or patients) to properly follow clinical practice guidelines. The Foucauldian understanding of resistance helps to illuminate this inability may not be an appropriate frame, and thus attempts to remedy this inability through education (or other practices that embed specialist expertise into care plans) are less likely to succeed. A second contribution of the dissertation is it illustrates how KT practices flow through the intraprofessional relationship between MSs and PCPs, but mask the power differences between physician groups. While being members of the same broad professional category of physician, MSs and PCPs clearly occupy different subprofessional positions that stand in hierarchical relation to each other. Collectively, this thesis calls into question the notion all that is needed are efforts invested towards discovering more innovative KT strategies, included education. We argue complementary
efforts and research should be devoted towards acquiring more robust understanding of what is happening at the level of the physicians to whom the KT interventions are directed, including education, that may be impacting the success or failure of the interventions themselves.

ABSTRACT:
Introduction: Social media can provide a tool for nursing students, who frequently transition between learning in the classroom and clinical contexts, to consolidate both their formal and informal learning experiences. Furthermore, the majority of baccalaureate nursing students fall within the millennial generation, meaning that they have grown up with computers and other digital tools and likely already use them to share educational resources and maintain contact with their peers. We know little about how health professions outside of Medicine use social media in teaching and learning, especially outside the context of the classroom and assignments.

Methods: This pragmatic three-phase sequential mixed methods case study explored nursing students’ perceptions of using social media to support their learning and teaching. Phase 1 involved a survey of 220 nursing students at one Canadian university to understand their use of social media for teaching and learning purposes. IBM SPSS (v. 24) was used to calculate frequency counts, Chi-Square Tests for Independence, and Spearman Correlations. A modified directed content analysis was conducted on the open-ended response data. Phase 2 consisted of a digital artifact collection, which involved following 24 nursing students’ social media accounts to see what content they shared related to nursing education. Finally, Phase 3 involved 9 semi-structured interviews to gain a deeper understanding of what motivates nursing students’ decisions to use social media for teaching and learning purposes. MAXQDA (v.18.2) facilitated a modified directed content analysis of both Phase 2 and 3 data. Phase 3 interview transcripts underwent three cycles of inductive and deductive coding using a codebook. A combination of matrices and networks visually displayed the data and facilitated category identification.

Results: Overall, the findings show that nursing students at one Canadian university use social media in their formal and informal teaching and learning; they also use it as a ‘third space’ to supplement existing educational and institutional structures. The findings also demonstrate that while nursing students are relatively motivated to use social media in their teaching and learning, issues of quality and reliability of evidence, professionalism, and faculty or program attitudes can influence nursing students’ decisions to use social media for educational purposes. Finally, the findings suggest that nursing students share content related to advocacy, health education, and their perceptions and realities of nursing practice.

Discussion and Conclusions: This study demonstrates that nursing students are already using social media in their educational practice both formally and informally. This use of social media has implications for teaching and learning in nursing education. Faculty members must consider the purposes for which nursing students are using social media, especially informally. One finding of this study suggested that nursing students turned to social media to fill perceived gaps - both academic and social - in their learning experience. If faculty members and schools of nursing are aware that social media is being used by nursing students for formal and informal teaching and learning purposes, it can be leveraged as a tool to achieve specific competencies and learning objectives. This study contributes practically to the existing conversations regarding teaching and learning, critical inquiry, communication and collaboration, and professionalism in nursing education and practice.


ABSTRACT:
Introduction: How to best prepare trainees for the challenges of physicians’ daily work, this question has been around for decades, even centuries. The concept of “Entrustable Professional Activities” (EPAs) was introduced to better link competency-based medical education to the requirements in the workplace (ten Cate, 2018). EPAs represent the authentic daily tasks which can be gradually entrusted to qualified personnel. Entrustment levels range from observing another physician performing the EPA to performing the EPA autonomously and even teaching others to perform the EPA. The integration of EPAs into a curriculum is a multistep endeavour and this thesis accompanied the process of developing and implementing Core EPAs as outcomes for the undergraduate curriculum at the Charité - Universitätsmedizin Berlin (Charité). Four research questions were addressed:
1) Which Core EPAs can be implemented as outcomes for the undergraduate curriculum at the Charité?
2) Do the defined Core EPAs represent realistic workplace expectations for beginning residents?
3) Can entrustment ratings be added to the standard ratings of an OSCE?
4) How do physicians form the decision to entrust a trainee with an EPA?

Methods: The thesis covered three studies and one theoretical essay. The first two studies focused on the development of Core EPAs. We invited 45 experienced physicians from our faculty to take part in a Delphi study and to develop a set of EPAs appropriate for our context. In a next step, we surveyed 720 Charité graduates on their workplace involvement based on this defined set of EPAs. The third project focused on the assessment of EPAs, by exploring the introduction of an entrustment rating scale in a standard OSCE in the ninth semester. 227 students completed a six station OSCE, while 54 assessors rated their performance. The standard ratings were compared to the added entrustment rating and assessors were asked to evaluate additional rating. In the theoretical essay, we applied occupational and organizational psychology theory to deepen our understanding of the entrustment-decision making process.

Results: In a three-round Delphi study, 34-36 panel members and a writing team developed a set of 11 Core EPAs and one EPA containing medical Core Procedures which beginning residents are expected to perform under distant supervision (with findings being reviewed). Each EPA consists of a 7-category description, which were substantially refined in the course of the Delphi study. The responses of 131 graduates indicated, that the majority of the defined EPAs were performed frequently and under the expected level of supervision. The results with respect to the defined Core procedures were mixed and stimulated discussion to omit some procedures. Our explorative study on the inclusion of an entrustment rating in a standard OSCE showed that the entrustment rating may provide students with valuable additional feedback. The majority of assessors positively evaluated the added scale. The theoretical essay further contributed to our understanding, of how supervising physicians arrive to their decision to entrust trainees with specific EPAs.

Discussion and Conclusions: The development of a set of Core EPAs and its additional validation by the survey amongst graduates were of key importance. However, various other steps need to follow (ten Cate, 2018). The EPAs are now being mapped to the learning content of the curriculum to provide students with a clear understanding of how the learning material relates to the work of a physician. Another step is to integrate the EPAs in the assessment framework, which we address by permanently including the entrustment rating in the OSCE and by developing an e-portfolio applicable to our context. We will also provide supervising physicians and students with informative material on EPAs and the related concepts.
The process of implementing EPAs will be accompanied by research projects to evaluate and refine the changes made to the curriculum. This thesis may serve as inspiration and guidance for other medical schools interested in implementing EPAs.

#SC37: SC - Students - Career Choice

#SC37.1 Igniting Minds - Motivating Young Doctors to Choose A Career in Otolaryngology - Our Experience in a Virtual International Conference During the Covid-19 Pandemic (9424)

Date of Presentation: 30 August 2021  
Time of Presentation: 16:00 to 16:15

AUTHOR(S):  
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ABSTRACT:  
Background: The Covid-19 pandemic presented unprecedented challenges in the organisation of popular conferences given the global restrictions on travel and aggregation. The BACO international conference, the flagship conference of ENT UK, has a section allotted to Students and Foundation Doctors in Otolaryngology (SFO) where nascent clinicians are provided information about otolaryngology as a career. This year, the entire conference being virtual, presented the challenge of organising an inspiring session from the confines of our computer tables.

Summary of Work: A questionnaire consisting of seven questions was prepared after asking current otolaryngology trainees what questions were foremost in their minds while choosing otolaryngology as a career. The questionnaire was then distributed to about forty otolaryngologists, established and aspiring, at different stages of their career, to get their responses as short video clips. These clips were used to compile a thirty-five-minute video for the SFO session at BACO 2021.

Summary of Results: Responses were received from thirty-three otolaryngologists with diverse personal and professional profiles. Six responses were excluded due to incorrect format, poor video quality or delay in sending the clips. Nearly twelve gigabytes of video data consisting of almost two hundred clips including some retakes were viewed, analysed and selectively edited to compile the final thirty-five-minute video. The session received encouraging feedback from all corners of the specialty and its target audience with the trailer video itself gaining over a thousand views on social media channels.

Discussion and Conclusions: The SFO session at the Virtual BACO International 2021 presented a unique yet challenging opportunity for the organisers to reach out to the young minds spread all over the world and motivate them for a career in otolaryngology. The various aspects of such a career and the spectrum of personal choices and opinions expressed was an eyeopener for the target audience especially since most otolaryngologists revealed an inspirational mentor to be the chief reason for their career choice.

Take-home Messages: A compilation of anecdotal information and narration of first-hand experiences from specialists in diverse niches of a specialty can be used to motivate and influence the career choice of young medical professionals.
ABSTRACT:

Background: There has been a gradual decline in the selection of obstetrics and gynecology (OBGY) as a career choice worldwide, which is of great concern for the medical educators, stakeholders, and policymakers to optimize the demand of this specialty.

Summary of Work: Objective To explore the perceptions of medical students about the attractive and distracting factors to choose obstetrics and gynecology. Method The focused group discussion was conducted from September 2019 to December 2019 and thematic analysis was done based on grounded theory.

Summary of Results: In the study, a total of 49 students participated out of 75 expected participants, and the response rate was 65%. Few participants who agreed to continue their careers in this field supported their ideas because of female gender acceptance for this specialty in Saudi culture, opportunity to observe procedures, and family pressures. The main reason was the tough experience during OBGY clinical rotations, the clinicians attitude towards training at the hospital workplace, and work stress.

Discussion and Conclusions: There is a profound influence on learning experience during the course and clinical training in hospital settings. The positive impact of teaching faculty, successful stories of patients, and teaching techniques supported by simulations can provoke the enthusiasm in the students. A mnemonic BE SMART is proposed to apply by medical educators to optimize the need of OBGY specialists in the future. It applies the abilities of true professionals indicated by doctors as beneficent, educators; enforces to augment the use of simulators as teaching modality.

Take-home Messages: Medical undergraduates attitude towards OBGY specialty as a choice of career is declining. The learning experience during the OBGY course and training in hospital settings has a profound influence on students to adopt OBGY as a career. Motivation by teaching faculties/clinicians and sharing success stories of patients can enhance interest in OBGY. Robust mentorship programs and career counseling are imperative during undergraduate medical education. Use of simulation models in the skill labs and using innovative techniques can have a positive impact on the attitude of students towards the OBGY. BE SMART is proposed to be applied by medical educators to maintain interest and optimize the need of OBGY specialists.
BACKGROUND: General practice is a vital part of the NHS in the UK. Despite this, the sector remains an underappreciated resource that needs to adapt and change in order to encourage medical students to choose this career path. Organisations such as the Royal College of General Practitioners along with medical student societies have been working to improve careers in general practice and entice more students. In this research, the aim was to investigate the perceptions of the role of GP societies with a view to seeking student opinions on those considering pursuing a GP career.

SUMMARY OF WORK: This study adopted a case study approach to explore the views and perceptions of one medical schools students. It was underpinned by theories related to communities of practice. The primary method of data collection was via semi-structured interviews applying a focus group approach. A thematic analysis process was employed, being reflexively mindful throughout.

SUMMARY OF RESULTS: 16 medical students from the University of Dundee between years 1-4 took part in 3 focus group discussions and 1 individual online interview. There were 5 key themes identified: the GP societies impact on medical students, the GP societys influence at medical school, positive perceptions of GP societies, negative perceptions of GP societies, and future steps for GP societies.

DISCUSSION AND CONCLUSIONS: Medical students have varying perceptions of the role of GP societies, both positive and negative. These perceptions appear to be more positive amongst students of the upper years i.e., years 4 and 5. GP societies do appear to enhance students attitudes towards a career in general practice. Attitudes towards communities of practice are positive in relation to GP societies.

TAKE-HOME MESSAGES: Building a GP society requires the need for an online presence combined with hosted events. Direct liaisons with medical school teachers whom are GPs is essential. In any community of practice, the wider context as to why the practice is being carried out must be made clear to the community e.g. the nationwide shortage of GPs and the strain on general practice within the UK.
ABSTRACT:
Background: During the past few decades, the reasons why medical students want to become physicians have been considered in student selection and recruitment processes. Although these discussions implicitly assume that medical students can explain their reasons, the origins of these reasons have rarely been addressed in medical education. The present study aims to explore why medical students regard these reasons as their own reasons.

Summary of Work: Fifteen medical students and physicians who entered medical school through graduate-entry programs in Japan participated in personal semi-structured interviews. From the viewpoint of social constructionism, a thematic analysis was conducted on what the participants recognized as their reasons, why they recognized, and how they explained these reasons in student selection processes.

Summary of Results: All the participants considered medical school entry their best professional course. The study identified that the participants reasons for becoming physicians were as follows: 1) an interest in medicine, 2) anxiety regarding or dissatisfaction with previous working conditions, 3) a desire to conduct research, 4) a desire to return to their hometown, 5) job-hunting failures, and 6) a desire to escape from venture companies. Some participants clarified their reasons origins by referring to past experiences and attributing arbitrary significance to them. Others could not explain the origins of their reasons. Many said, I dont know, It was a kind of madness, There were no visions, and I might have misunderstood my reasons. One participant gradually came to believe in the reasons which he had constructed while preparing for his entrance examinations. However, in student selection processes, the reasons 2-6 were often hidden or replaced by other reasons. Some participants pretended to have intrinsic motivations to practice medicine.

Discussion and Conclusions: The study suggests that the origins of medical students reasons for becoming physicians cannot be understood without attributing arbitrary significance to past experiences. As described by Hannah Arendt in On Revolution, ones innermost motives become mere appearances, or hypocrisy and deceit, when they are observed by themselves or others.

Take-home Messages: We may never be able to explain why individuals choose to become physicians.
ABSTRACT:

Background: The chiropractic profession in Switzerland has attained a high level of integration into mainstream healthcare, but the current number of chiropractors is inadequate to meet the needs of the patients. A large proportion of the chiropractic medicine programme is integrated with the human medicine programme at the University of Zurich. Student career choice is an important issue in order to grow the profession.

Summary of Work: This study investigated potential influences on students choosing chiropractic and motivating factors for finishing the degree. A two-phase qualitative design combining focus groups and individual interviews was employed. Nineteen current and former chiropractic students participated. Themes and subthemes were generated through the six steps of thematic analysis.

Summary of Results: The five main themes that emerged were 1) the initial attraction to the chiropractic profession included a general interest in healthcare combined with manual work, helping people and the professions characteristics, 2) motivating factors that kept the students going were self-motivation and individual support systems including family, peers, mentors and the educational programme, 3) career choice is a process that takes time, whether students choose to stay in chiropractic or switch into medicine, 4) the process of professional identity formation, and 5) the importance of belongingness in the educational community and also in the wider chiropractic profession, both of which help with motivation and also with professional identity formation.

Discussion and Conclusions: The influencing factors on chiropractic career choice are compatible with previous models on career choice in the healthcare literature. Chiropractic was defined by what a chiropractor does as well as its role within healthcare. Very often, this definition included comparisons to other healthcare professions and an outside view of the profession. There was a large role of the wider chiropractic profession in providing mentorship, professional identity formation, belongingness and ultimately motivation for individual students to stay in chiropractic.

Take-home Messages: The influences on chiropractic career choice seem to be a general interest in medicine combined with the wish to work with the hands and chiropractics characteristics including work-life balance. Both professional identity formation and career choice are processes that are influenced by the educational programme and the wider chiropractic profession.
#SC37.6 Personality Traits and Choice of a Specialty in Medicine (9734)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 17:15 to 17:30

**AUTHOR(S):**  
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**ABSTRACT:**  
**Background:** The personality of the physician would have a considerable influence in his choice of medical specialty. It has been shown that physicians belonging to a certain specialty will share common traits of personality that correspond to the requirements and conditions of practice of the discipline. In order to be able to develop an educational tool to help the choice of specialty for young doctors in Morocco, we conducted the present study in order to better understand the character traits associated with the different specialties chosen and practiced in Morocco.

**Summary of Work:** This is a cross-sectional study that used an anonymous questionnaire distributed online via social networks, and aimed at collecting the personal, professional data of Residents or specialists practicing in Morocco. The questionnaire also included the self-completion of the Big Five Inventory, a validated 5-dimensional personality assessment questionnaire.

**Summary of Results:** 321 physicians answered our questionnaire, 71% of whom were female, 61% were residents and 57% were working in the public sector. Agreeability was the most common personality dimension in the different specialties with the highest frequency among paediatricians (45%). Consciousness was the second dimension in terms of frequency, especially among Gynaecologists (41%). Extraversion could be expressed and more prevalent in psychiatrists (19%) and surgeons (14%). Openness was the highest among biologists (16%), and Neuroticism was more common among psychiatrists (17%).

**Discussion and Conclusions:** The traits of personality were represented quite closely between the different disciplines with only a few small differences. Despite the limited number of participants in this pilot study, its results remain very informative and very interesting, and could be used (after verification and generalization by a larger study), in the development of a tool to help the choice of specialty in Morocco, which we wish to undertake.

**Take-home Messages:** Personality traits might impact the choice of specialty but there are also other factors which are independent from the student (quality of training, rentability...etc.) but highly considered in that career choice.
Performance of cognitive task analysis in health care education: A narrative review (9508)

Date of Presentation: 30 August 2021
Time of Presentation: 16:00 to 16:15

AUTHOR(S):
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ABSTRACT:
Background: The literature describes different task-analysis and different methods of performing task-analysis. The outcomes of a task-analysis help identify critical steps and decisions moments in skill performance. This study aims to better understand how task-analysis can be applied to communication skills in medical education, and therefore we focus on the use of Cognitive Task Analysis (CTA). CTA studies try to capture what people are thinking a […], the strategies they are using to make decisions or detect problems, (Crandall, chapter 2). Three questions will be answered: 1) What methods are used to perform CTA? 2) How are the CTA outcomes used in practice? 3) What type of tasks are amenable to CTA (e.g.: psychomotor, decision making skills)?

Summary of Work: We searched Pubmed with help from a librarian. We applied inclusion and exclusion criteria to 100 abstracts and adjusted the criteria, which were then applied to the remainder of abstracts. Two authors read each abstract. Because the goal of this study was to determine how CTA in healthcare settings was used, we decided to do a narrative literature review to describe our outcomes.

Summary of Results: Our search resulted in 341 abstracts. Application of exclusion criteria (context, content, publication types) resulted in 144 full text articles. 1) Several methods are used: think aloud protocols during task-performance or when reviewing videos, interviews, and novice-expert comparisons. 2) CTAs are used for process improvement, development of training materials, or simulations. 3) Most CTAs are done in psychomotor task performance (e.g. emergency shunt procedures), less frequent is team collaboration.

Discussion and Conclusions: Communication skills are a cognitive rather than a psychomotor skill. Many traditional CTA methods are therefore poorly suited to the task. Modifications are needed to adapt CTA to different settings and purposes of communication. A critical component of a CTA of communication is the skill and experience of the participants. Although these adaptations mean that CTAs may be contextualized in domain and towards participants, the CTA methods are a promising tool to use for better understanding this complex skill.

Take-home Messages: The literature review provided critical insights in how to set up a CTA protocol and analyze our data.
ABSTRACT:
Background: Understanding the thinking process of students during clinical decision making can help educators provide more appropriate feedback. Studies of the thinking process during clinical decision making usually focus on self-report measurements, which may not provide a reliable measure of the thinking process. In this study, we investigated the difference between the thinking process in clinical cases that required either making a diagnosis or providing a treatment plan. Different from previous studies, we measured the thinking process using eye-tracking, which provides information about eye movements related to the cognitive workload, which is the magnitude of the thinking process. Our hypothesis was that using key features of the case for providing a treatment plan would require a higher cognitive workload than when making a diagnosis.

Summary of Work: Sixteen fourth-year medical students answered 40 questions equally divided into clinical cases that required making a diagnosis or providing a treatment plan. Cognitive workload was measured using screen-based eye-tracking by measuring time to first fixation, number of fixations and number of returns for each area of interest: the question, key features of the case and the list of alternative answers for making a diagnosis or providing a treatment plan. To compare the difference between both type of answers, we used an independent t-test for each area of interest.

Summary of Results: We found a significant difference in the time to first fixation ($t=2.14, p<0.33$), number of fixations ($t=5.05, p<0.001$) and number of returns ($t=4.85, p<0.001$) between the use of key features of the case in making a diagnosis and providing a treatment plan.

Discussion and Conclusions: Our findings suggest that questions about providing a treatment plan had a lower cognitive workload than questions about making a diagnosis. This unexpected finding may be due to the students not having sufficient knowledge about providing treatment plans.

Take-home Messages: This is the first study using eye tracking to understand the thinking process during clinical decision making, demonstrating that it has potential to enhance feedback by identifying learning needs that can be further explored.
#SC38: SC - Medical Education Research

#SC38.3 Language translation in qualitative medical education research: Lessons learned from a multinational study (8302)

Date of Presentation: 30 August 2021
Time of Presentation: 16:30 to 16:45

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ABSTRACT:
Background: The growing number of cross-language medical education research and diversities within research teams raised questions around translation within qualitative research studies. In this work we share reflections of our multinational research team working on migration and integration of Middle Eastern physicians into Germany.

Summary of Work: A qualitative exploratory study was conducted with immigrating Middle Eastern physicians in pre- and post migration phases. A total number of 18 final year medical students and residents from Egypt (pre-migration phase) as well as 23 residents and specialists from various Middle Eastern source countries working in Germany (post- migration phase) were purposively sampled and invited to semi-structured interviews and focus groups which were all conducted in their native Arabic dialects. The research team was composed of one native Arabic speaking and 2 native German speaking researchers who all spoke English as a foreign language. Data collection was conducted by the Arabic speaking researcher who also translated the verbatim recorded data into English. Anonymous transcripts were checked by a professional translator. Framework analysis of the translated transcripts was done using ATLAS.ti program.

Summary of Results: Although using the native language of the participants during data collection prevents distortion of information, but it poses methodological and epistemological challenges; e.g. it compromised a full discourse analysis of data. Translation from Arabic to English posed some difficulties in the areas of vocabulary and usage which could be attributed to the different and distant origins of both languages and their limited linguistic equivalence.

Discussion and Conclusions: Qualitative approaches consider meaning as being constructed rather than expressed by language which makes its translation of qualitative transcripts an interpretive process and the first step of data analysis. It is recommended to conduct data collection in the participants native language and use only one translator for all transcripts to maximize the reliability of the study.

Take-home Messages: Although translation of qualitative data is time and resource consuming and may compromise validity, it has the advantage of allowing participants to express themselves freely in their native language. Cross national research teams should comprise bilingual researchers to limit the role of external translators.
#SC38: SC - Medical Education Research

#SC38.4 Knowledge syntheses in medical education: Examining authors’ gender, geography, and institution (8755)

**Date of Presentation:** 30 August 2021

**Time of Presentation:** 16:45 to 17:00

**AUTHOR(S):**

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Anton Ninkov, University of Ottawa, Canada

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Erik Driessen, Maastricht University, The Netherlands

Lauren Maggio, Uniformed Services University of the Health Sciences, USA

**ABSTRACT:**

**Background:** Authors of knowledge syntheses (KSs) make many subjective decisions during their review process. These decisions, which are guided in part by author characteristics, can impact the conduct and conclusions of KSs. Therefore, to better understand the evidence base in medical education, this study aims to describe the characteristics of KS authors, focusing on gender, geography, and institution.

**Summary of Work:** We conducted a case study of authors of 963 KSs published between 1999 and 2019 in 14 core medical education journals using a publicly accessible dataset.

**Summary of Results:** We identified 4,110 authors across all authorship positions. On average there were 4.3 authors per KS (SD=2.51, Median=4, Range=1-22); 79 KSs (8%) were single-author publications. Over time, the average number of authors per KS increased (M=1.80 in 1999; M=5.34 in 2019). KSs were authored by slightly more females (n=2047; 50.5%) than males (n=2005; 49.5%) across all author positions (Pearson $\chi^2=22.02$, $p<.001$). In addition, more females were listed as second author (n=483; 55.4%; Pearson $\chi^2=8.49$, $p<.01$); whereas more males were listed as last author (n=404; 56.0%; Pearson $\chi^2=12.63$, $p<.001$). There were no gender differences in first author position. Authors listed affiliations in 58 countries, and 54 KSs (6%) included authors from low- or middle-income countries (LMIC). Authors from the US (n=366; 38%), Canada (n=233; 24%), and UK (n=180; 19%) published the most KSs. First authors represented 374 unique institutions with greatest representation from the University of Toronto (n=55, 6%) and the Mayo Clinic (n=32, 3%). Of the top 100 ranked institutions, only 58 were represented; yet this group accounted for 335 publications (35%).

**Discussion and Conclusions:** While there is near gender parity across all author positions, authorship was dominated by North American authors located at highly ranked institutions. This suggests a potential over-representation of certain authors with particular characteristics, which may impact the conduct and conclusions of KSs. The findings of this study suggest that the characteristics of KS authors have evolved over the last two decades, which may influence the voices that dominate medical educations evidence base.

**Take-home Messages:** To better understand the origins of the fields evidence base, we must first understand the characteristics of the authors who publish KSs.
#SC38: SC - Medical Education Research

#SC38.5 Intersectionality in Medical Education: A Meta-Narrative Review (7987)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 17:00 to 17:15

**AUTHOR(S):**  
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Javeed Sukhera, London Health Sciences Centre, Western University, Canada  
Divya Santhanam, Schulich School of Medicine and Dentistry, Western University, Canada

**ABSTRACT:**

**Background:** There is significant focus on improving equity, diversity and inclusion (EDI) in academic medicine, however, little attention is given to understand inequity from an intersectional perspective. Intersectionality is a theoretical framework and methodology that refers to the study of the dynamic nature of social categories with which an individual identifies and their unique localization within power structures. Although intersectionality provides a useful framework for both research and practice, a better understanding regarding how it has been applied in a medical education context may inform future efforts to advance social justice. We sought to explore how and why intersectionality has been conceptualized and applied in the context of medical education.

**Summary of Work:** We employed a meta-narrative synthesis to review existing literature on intersectionality theory and intersectional methodologies and frameworks in medical education. Three electronic databases were searched using key terms yielding 40 articles. After, title, abstract and full-text screening 14 articles were chosen for inclusion. Analysis of articles sought a meaningful synthesis of intersectional theory in relation to research methodology and/or framework, and application of intersectionality theory to medical education.

**Summary of Results:** Existing literature on intersectionality reveals distinct meta-narratives regarding whether intersectionality refers to theory or praxis. There are contrasting narratives on the suitability of quantitative intersectional methodologies and limited consensus on the practical application of intersectionality theory to medical education.

**Discussion and Conclusions:** The potential for intersectionality to improve equity in academic medicine remains constrained by tension between intersectionality as theory and intersectionality as praxis. Drawing explicit attention to the distinction between both meta-narratives may foster complementary and integrative approaches to understanding and applying intersectionality in a medical education context.

**Take-home Messages:**  
- Intersectionality should be centered in medical education to ensure patient centered care  
- Intersectionality allows healthcare providers and trainees to understand the complexity and multiplicity of identity  
- Intersectionality theory applied to medical education and practice results in reflexive and meaningful construction of identity for both trainees and patients  
- Central to understanding intersectionality is to understand power structures and working to dismantle them both in curriculum and practice
ABSTRACT:
Background: Young researchers and novice authors face lot of difficulties to document their research work and get it published due to lack of guidance and proper training in the art of scientific writing. This manuscript provides some important information and highlights some useful tips for novice authors.
Summary of Work: I had an enormous craving to write a brief communication after reading a manuscript Publication Audit and editorials recently published in Pakistan Journal of Medical Sciences regarding common reasons for not accepting manuscripts for further processing after editors triage and initial screening and challenges faced by medical editors.
Summary of Results: Editors are under constant pressure of increased workload and they do need sympathy and encouragement instead of harsh remarks and comments from authors. Cutting long story short, it is not an easy job for editors to make authors, reviewers, and readers happy owing to multiple task performance.
Discussion and Conclusions: Eighteen publications tips are provided and pasting all here would exceed wordcount limit.
Take-home Messages: HAPPY PUBLISHING
#SC39: SC - Teaching & Learning Methods

#SC39.1 The tap clap and snap interactive challenge: A peer feedback semi-game to improve classroom engagement (8103)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:00 to 16:15

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** Engaging students through long modules or PBL is sometimes challenging. Depending on the topic, number of students and chemistry between them, the level of engagement naturally fluctuates. A little boost of energy is sometimes needed. Conditions with similar clinical findings may also pose confusion. Eliminating possibilities based on specific findings is a mental exercise doctors practice all the time. Students need to practice this skill.

**Summary of Work:** This challenge involves rhythm and the whole group. At the end of a module the author presents a series of slides showing different diagnostic challenges (eg. different skin lesions etc..). Students declare answers by making a tap clap or snap according to a previously agreed scenario (tap if you spot X, clap if you spot Y). Feedback is quick, reinforcing, game-like and competitive. The idea uses social reinforcers mediated by peers, showing a collective expression of approval for the appropriate response.

**Summary of Results:** This interactive challenge was effective in maintaining student attention in game-style exercise. Students gave positive feedback on this in class semi-game. The ideal scenario is a harmonized response. Odd sounds will draw attention, generate laughter/energy and offer students discrete self-evaluation yet in an engaging environment. The hidden ultimatum of having to decide quickly in order to respond with the group mandates the brain to eliminate possibilities quickly. The tutor can display challenging cases and expect a diversified response. The generated confusion is deliberate here where further elaboration is given. This helps consolidate knowledge.

**Discussion and Conclusions:** Innovations in the classroom are endless. For the Tap Clap and Snap the author suggests using it as a brief end of module wrap up. The exercise brings energy to the classroom and can be used in break times during a long or difficult PBL session. It can also be used when teaching online - as in the pandemic situation- using emojis instead of sounds.

**Take-home Messages:** The Tap Clap and Snap is an auditory feedback class semi-game devised to increase classroom engagement and train young doctors on eliminating possibilities. It is better used with small numbers, practicing together before beginning and pausing to elaborate when needed.
**ABSTRACT:**

**Background:** With the rising call for more patient-centered care, new teaching methods for medical students are needed. Narrative medicine as a didactic strategy purports to improve students' communication skills, self-reflection, empathy and professional development. These skills are essential elements of patient-centered care and have been shown to positively impact patients' outcomes as well. We evaluated a narrative teaching tool at University Medical Center Utrecht (UMCU) to assess which dimensions of patient-centeredness were stimulated among medical students, and to what extent meaningful self-reflection was fostered.

**Summary of Work:** All fourth-year medical students participated in this narrative medicine lesson. The four-step activity consisted of an introductory lecture, close reading and watching of a book and film, a discussion group and a short reflective writing exercise. We have thematically analyzed 203 essays from the reflective writing exercise. In addition, we used a scoring-system based on the REFLECT rubric to assess levels of reflection.

**Summary of Results:** Students demonstrated reflection on a professional level and connected this to future intentions as medical practitioners. They also reflected on a personal level by questioning their worldview or beliefs. Furthermore, they stressed the importance of individual patient stories. Approximately half of the students showed an in-depth and authentic reflection, according to the REFLECT rubric. Additionally, the choice of book and film pairings had an impact on the richness of reflection.

**Discussion and Conclusions:** Students were able to derive important themes from the book and film that correspond with elements of patient-centeredness, namely personal attitudes towards patients and the uniqueness of each patient story. This study supports the value of narrative medicine in the medical curriculum by validating its outcomes in a larger study population and in a mandatory course. As a majority of the students demonstrated meaningful reflection, we think this exercise can contribute to self-awareness and self-reflection, which is necessary in delivering patient-centered healthcare. Future research should focus on the transfer of these skills to the clinical setting.

**Take-home Messages:**
- Narrative medicine can be a useful tool to stimulate reflection and discussion about what patient-centered care entails.
- This study emphasizes the value of narrative medicine by affirming its main goals in a larger study population.
#SC39: SC - Teaching & Learning Methods

#SC39.3 Overcoming English language bias: Concept maps as an adjunct in the assessment of medical interview skills in English for Japanese students (8610)

Date of Presentation: 30 August 2021
Time of Presentation: 16:30 to 16:45

AUTHOR(S):
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Yayoi Shikama, Fukushima Medical University, Japan
Koji Otani, Fukushima Medical University, Japan

ABSTRACT:
Background: Fluent English interview skills are essential as medical practice becomes increasingly globalized. OSCE assessment of such skills in Japan presents a challenge due to reduced English-speaking proficiency compared with reading and writing ability amongst students. OSCE assessment may unfairly advantage those with stronger spoken English, without demonstrating greater understanding of taught concepts. The use of concept maps as an adjunct in assessment offers insights into student construction and application of knowledge with the added benefit of being suitable for remote delivery. We adapted Buhmann and Kingsburys method of concept map structural transformation -termed topological normalization- and morphological classification to explore how concept map analysis can be used in the evaluation of Japanese students participating in our Medical Interview in English Course.

Summary of Work: 45 concept maps produced by Fukushima Medical University 4th year medical students participating in the Medical Interview in English Course, underwent topological normalization and morphological classification. Attainment of pre-set learning objectives was used to determine a content score, and self-evaluated confidence scores in speaking, reading and writing were collected. ANOVA was used to examine content score and concept map morphology.

Summary of Results: Topographical normalization revealed 6 distinct morphologies amongst the student concept maps: interconnected, deep, normal, broad, imbalanced and disconnected. ANOVA showed a significant relationship between content score and morphology (F(5,39)=10, p<0.05), with a post hoc Tukey-Kramer procedure showing distinctions between the interconnected, deep and normal maps compared to the imbalanced and disconnected maps (p=9x10^-8). Student self-rated English speaking, reading and writing ability did not account for the variation seen between morphologies.

Discussion and Conclusions: Assessment via concept map analysis allowed students to demonstrate their understanding and application of complex ideas about medical interviewing technique without being disadvantaged by their English-speaking ability. The method promoted the recognition of deep learning and facilitated detailed feedback to students.

Take-home Messages: Concept mapping as an adjunct to oral assessment in international settings gives students confidence of a more holistic and fair assessment of their abilities in English. With current focus on online delivery of clinical education, concept maps can be easily adapted for remote assessment.
#SC39: SC - Teaching & Learning Methods

#SC39.4 Contextual attributes to promote positive social interdependence in problem-based learning: A qualitative study (7925)

Date of Presentation: 30 August 2021
Time of Presentation: 16:45 to 17:00

AUTHOR(S):
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Robbert Duvivier, University Medical Center Groningen, The Netherlands
Cees van der Vleuten, Maastricht University, The Netherlands

ABSTRACT:
Background: Problem-based learning (PBL) is classified as a collaborative learning approach, wherein students learn while contributing meaning to experiences and interactions with others. An important theoretical fundament of PBL is social interdependence theory (SIT) because positive social interdependence within a group is generally believed to be key to better learning performance and future attitudes towards team practice. However, most previous studies in health professions education focused on cognitive outcomes, and few studies have focused on collaborative behaviors in PBL groups. The lack of this insight makes implementation of PBL difficult, especially in contexts where there is limited experience with collaborative learning. Therefore, the aim of this study was to elucidate what promotes or hinders positive social interdependence and how the attributes work during PBL.

Summary of Work: We conducted four focus groups among clinical year medical students (n=24) who participated in PBL tutorials in the formal curriculum. We asked semi-structured questions that corresponded with the overall concept of SIT. We analyzed the transcript using constructivist grounded theory and developed a model to explain contextual attributes that promote or hinder positive social interdependence in PBL.

Summary of Results: Two contextual attributes of academic inquisition and work efficiency affect social interdependence among a student group in PBL. Academic inquisition is students desire to engage in their academic learning, and work efficacy is students attitude toward learning as an imposed duty and desire to complete it as quickly as possible. These attributes are initially mutually conflicting and constructing social interdependence through multiple steps including inquisition from a case, seeking efficient work, sharing inquisition for problem solving, expecting mutual contributions, and complementing learning objectives.

Discussion and Conclusions: These findings will contribute to understanding collaborative learning environments in PBL and may help explain contexts where PBL is less successful. The model can also be used as a tool to support innovation of PBL as collaborative learning.

Take-home Messages: Further analysis of the phenomena during discussions, training of tutors, and innovative learning environments are determined to be more effective in collaborative learning practices.
The first neurological Rehabilitation Hackathon: HRL 2020, an innovative and educational way for improving pluridisciplinary skills (8350)

Date of Presentation: 30 August 2021  
Time of Presentation: 17:00 to 17:15

AUTHOR(S):  
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Guillaume Rousson, Université Jean Monnet, France  
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ABSTRACT:  
Background: Teaching and learning interdisciplinarity are key features in medical education, to prepare students to their future practice. Innovation in healthcare, cannot be conceived without a trans-cutting approach especially in neurorehabilitation. Hackathons are an innovative approach to promote team working and demonstrated an interest in higher education through inquiry-based learning. A multi-skilled team of students and young professionals organized the first hybrid presentational-online neurorehabilitation within the joined 2020 WCNR-SOFMER congress.

Summary of Work: Due to the Covid19 pandemic, we conducted a hybrid presentational-online hackathon, allowing students, juniors, professionals, and patients from diverse locations from France and abroad to participate. The Hacking Rehab Lyon took place between October 5th and October 7th 2020 in the Faculty of Medicine Lyon Est and online. Interdisciplinary teams worked during two days on concrete problematics met by people with a disability and their caregivers, accompanied by interdisciplinary mentors to put forward tangible solutions. An independent jury selected the winning project: a technical aid to adapt a stroller on any kind of wheelchair.

Summary of Results: HRL gathered 31 participants, from diverse backgrounds: robotics and mechanics (54%), medical and paramedical (31%), culture, design, clinical research, health product and service design, and insurance law (15%). Most of them were students and junior professionals (55% under the age of 25). HRL met the expectations of 96% of the participants, with an overall satisfaction rate measured at 83%. They reported better knowledge and ability about teamwork, ethics, and patient-centered approaches. Awareness about issues faced by people with disabilities increased.

Discussion and Conclusions: HRL allowed the creation of a strong interdisciplinary and international network which will be valuable to foster innovation. It showed its interest in the training of students and juniors for cooperation, communication, and creativity in neurorehabilitation innovation, and allowed a much better understanding of the issues faced by people with disability. A second edition of the neurorehabilitation hackathon will take place in French and English in 2022 during the next joined WCNR-SOFMER congress in Lyon, in a hybrid format.

Take-home Messages: This hybrid presentational-online Hackathon was an effective way to train students and juniors on interdisciplinarity and innovation through inquiry based learning, despite the covid-19 pandemic.
#SC39: SC - Teaching & Learning Methods

#SC39.6 Design, Implementation and Evaluation of a MOOC on Coaching Skills for Learner-Centred Conversations (8529)

Date of Presentation: 30 August 2021
Time of Presentation: 17:15 to 17:30

AUTHOR(S):
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Samantha Coster, Imperial College London, UK
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Celine Esuruoso, Imperial College London, UK
Molly Fyfe, Imperial College London, UK

ABSTRACT:
Background: Training in learner-centred, solution-orientated coaching approaches may support skills development and motivation in self-directed learning. We developed and evaluated a Massive Open Online Course (MOOC) in coaching skills for learner-centred conversations.

Summary of Work: We used design principles informed by Self-Determination Theory, Transformational learning theory and Hofstede’s cultural dimensions to inform MOOC development. This resulted in a MOOC comprising four modules each of 1-2 hours duration, incorporating videos, interactive quizzes and asynchronous discussion forums. The MOOC aimed to support learners to explore and apply coaching approaches in educational contexts. A mixed methods evaluation drew on data from end-user platform learner analytics, pre and post-MOOC questionnaire responses, and semi-structured interviews with 14 participants conducted 3-6 months after completion to explore the experience and impact of undertaking the MOOC.

Summary of Results: From March 2020-January 2021, 9,906 learners from 146 countries enrolled in the MOOC. 1,550 participants completed the post-MOOC questionnaire, of which the majority scored highly on the intrinsic motivation inventory, transformational learning inventory and cultural inclusivity scale. Participants identified several aspects as engaging, including interactive coaching videos. The online discussion forums were less valued by participants. Findings from semi-structured interviews indicated that coaching skills training enabled participants to develop a more learner-centred mindset and apply this in a range of educational and wider contexts.

Discussion and Conclusions: This coaching MOOC was well-received by participants with evaluation findings suggesting transformational learning had occurred. Participants were able to apply coaching skills learned in practice to enhance educational interactions as well as interactions more generally. Cultural contexts involving power imbalances between teachers and learners posed some challenges to implementing coaching approaches and this merits further exploration. The coaching MOOC was generally perceived as culturally inclusive and has global applicability in a range of contexts. Our evaluation indicates that this Coaching MOOC is culturally inclusive, engaging, relevant and applicable across educational contexts, and can facilitate development of a learner-centred mindset in participants.

Take-home Messages: In our experience MOOC design was strengthened by drawing on self-determination theory, transformational learning theory and Hofstede’s cultural dimensions theory. Transformational learning can occur through asynchronous online learning, contributing to the development of learner-centred mindsets in educators and students globally.
ABSTRACT:
Background: Since the onset of novel coronavirus (COVID-19) at the end of December 2019, the world has encountered rampant information and news without filtering, which has echoed the unpreparedness and the alarming need for revisiting our life, including the healthcare system and medical education, worldwide. Using critical needs analysis and the FAIR (Feedback-Activity-Individualisation-Relevance) principle in medical education with a critical eye, this study was set out to raise awareness regarding learning and disseminate accurate information on COVID-19.

Summary of Work: With the presence of COVID-19, critical needs analysis and FAIR principles were used in the following order of priority in medical education: (i) individualisation, (ii) relevance, (iii) activity and (iv) feedback. The data were collected using participant observation field notes, interviews and participants reflective reports to triangulate findings (n=99). There were three groups of participants in this study: students in the Faculty of Health Sciences (n=59), doctors (20) and from the public (20). As an intervention to tackle the infodemic of unfiltered information on COVID-19, the elective medical English course contents were revisited and changed by including academic reading texts on COVID-19 from high-impact journals, including Nature, The New England Journal of Medicine, BMJ and The Lancet, to disseminate balanced and filtered information, summarise them both in Turkish and English, and also disseminate accurate information on COVID-19 among students, healthcare providers and people.

Summary of Results: The findings obtained in this study showed the negative effects of infodemic of uncontrollable and unfiltered news on COVID-19 that is unprecedented in human history, such as the effects of uncertainty and also not knowing what to do (e.g., wear or not to wear a mask, reliability of the tests to diagnose COVID-19 and the race of vaccines?). However, with an intervention, the positive effects of reaching and disseminating accurate information regarding COVID-19 on students, doctors and among people in society were observed.

Discussion and Conclusions: In this talk, data extracts from the interviews and reflective reports will be elucidated. The findings call for collaboration to learn and disseminate accurate information on COVID-19.

Take-home Messages: Learning and disseminating accurate information on the COVID-19 pandemic can be achieved if we can work hand in hand worldwide.
#SC40: SC - Evaluating the Educational Response to COVID-19

#SC40.2  The Impact of Covid-19 on Medical Education worldwide: A survey analysis (9802)

Date of Presentation: 30 August 2021
Time of Presentation: 16:15 to 16:30

AUTHOR(S):
James Haley Young, IFMSA, China*
Eglė Janušonytė, International Federation of Medical Students Associations, Lithuania
Marouane Amzil, International Federation of Medical Students Associations, Morocco
Ali Channawi, International Federation of Medical Students Associations, Morocco
Bianca Amaro, International Federation of Medical Students Associations, Brazil
Alaa Dafallah, International Federation of Medical Students Associations, Sudan
Abdullah Rajeeb, International Federation of Medical Students Associations, Iraq

ABSTRACT:
Background: As countries across the globe have closed their borders, medical schools have closed their doors, putting medical students away from their classes and clinical training leading to an unprecedented situation in medical education. IFMSA has taken the initiative to carry out a comprehensive analysis on the status of medical education worldwide.

Summary of Work: International Federation of Medical Students Associations tracked the adaptation of medical schools to the pandemic requirements and the alternative education measures provided to students, evaluating students attitude towards the pandemic, involvement in supporting healthcare during the outbreak, level of clinical exposure to the risk of CoVID19 infection within healthcare facilities and students education during and after the quarantine.

Summary of Results: A cohort cross-sectional study was conducted: a total of 2761 medical schools in 103 countries were tracked between April 1st and April 20th, of which 2614 medical schools in 95 countries suspended the delivery of their curriculum within the conventional physical settings. An additional survey on medical education collected data on 411 medical students, representing 248 medical schools worldwide. Data on medical students role during the pandemic in terms of competency preparedness, protecting medical students from the risk of infection evaluation, as well as best e-learning as medical education tool practises and students vision for post-Covid-19 education.

Discussion and Conclusions: Online lectures, demonstrations, and e-learning resources have taken precedence over any other learning methodologies and were well accepted by students, provided that the para-educational technicalities, including internet access, the fee for the curricula, technological training of professors are being catered to as well. While there is no substitute for patient interaction, real-life practice, and on-ground clinical teaching, it is always to supplement the training of healthcare professionals by maximally utilizing these online tools. They save time, effort, and are increasingly innovative, thus increasing interest and motivation amongst students.

Take-home Messages: As student leaders, we recognize the imminent need to inculcate a student perspective while developing learning solutions, to ensure that systems remain accountable while maintaining good outcomes. Now is the time to strategize, innovate and work together to build a system that achieves a middle ground between innovation and hands-on medical training.
#SC40: SC - Evaluating the Educational Response to COVID-19

#SC40.3 A SWOT analysis of Italian medical curricular adaptations to the COVID-19 pandemic: A nationwide survey of medical school leaders (8782)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 16:30 to 16:45

**AUTHOR(S):**  
Fabrizio Consorti, University Sapienza of Rome - Faculty of Medicine and Dentistry, Italy*  
Ming-Jung Ho, Georgetown University, USA  
Stefania Basili, University Sapienza of Rome - Faculty of Medicine and Dentistry, Italy  
Steven L Kanter, Association of Academic Health Centers, USA

**ABSTRACT:**  
**Background:** There is a growing literature on how medical education adapted to the COVID-19 pandemic and, more generally, to a situation of crisis. Few studies investigated the factors facilitating or hindering the adaptations.

**Summary of Work:** This study explored the adaptations and related factors of strengths, weaknesses, opportunities, and threats (SWOT) of the Italian medical schools to the COVID-19 pandemic, through an online survey of directors of medical curricula in Italy. Free-text responses to open-ended questions were analysed using qualitative thematic analysis.

**Summary of Results:** Twenty out of 60 Italian medical school directors completed the survey. Strengths identified were rapid responses and a spirit of cooperation. Weaknesses included dependency on clinical facilities, teachers limited skills to use technology, and lack of mental health support for staff. Opportunities highlighted were clear government rules, new ways of teaching and a renewed focus on underrepresented topics. Threats expressed included impaired relationships, difficulties related to online assessment, lack of IT access, and legal and insurance issues.

**Discussion and Conclusions:** This study captures important responses of key medical school leaders. The schools adapted rapidly, sharing ideas, and collaborating amid the COVID-19 pandemic. In addition, analysis of strengths, weaknesses, opportunities, and threats of responses of Italian medical program directors collected by this study during this challenging time offers important ideas for the global medical education community as it plans for a new normal in medical education.

**Take-home Messages:** • There is a need to examine the facilitators and barriers of medical education adaptations to situations of crisis like the COVID-19 pandemic. • SWOT analysis can highlight not only the positive, but also the negative factors in medical curricular adaptations to the COVID-19 pandemic. • One important lesson learned from Italian medical education adaptations to COVID-19 pandemic is that a systemic approach to the problem is helpful, considering all the actors, resources, and relationships of the process of education. • A wider use of technology to enhance learning, and more attention to community and global health are achievements that will remain.
#SC40: SC - Evaluating the Educational Response to COVID-19

#SC40.4 Academic and technological readiness of medical and allied health professional students during the COVID-19 pandemic: A multi-campus study (8988)

Date of Presentation: 30 August 2021  
Time of Presentation: 16:45 to 17:00

AUTHOR(S):  
Md. Anwarul Azim Majumder, Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados*  
Michael Campbell, Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados  
Bidyadhar Sa, Faculty of Medical Sciences, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago  
Katija Khan, Faculty of Medical Sciences, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago  
Russell Pierre, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Jamaica  
Christine Chin, Faculty of Medical Sciences, The University of the West Indies, Nassau, Bahamas

ABSTRACT:  
Background: The emergence of COVID-19 has produced rapid and dramatic changes in medical education worldwide. The pandemic forced the Faculty of Medical Sciences (FMS) to suspend face-to-face learning and clinical training and shift suddenly to online delivery due to ensure safety of students, staff, and patients. Given current challenges associated with the global pandemic and resultant stay-in-place orders, FMS decided to conduct online teaching while students are off-campus and assess performance remotely. The aims of this study were to assess medical and allied health professional students readiness for online learning and assessment, including their access to technology.

Summary of Work: A convenience sample of 1500 respondents from four sites (Barbados, Jamaica, Bahamas, and Trinidad and Tobago) completed the questionnaires. Two questionnaires (for medical students and health sciences students) were developed to gather information pertaining to demographics, technological readiness, and attitudes toward online learning and assessment. The questionnaires were administrated using SurveyMonkey.

Summary of Results: Approximately 92% of the students had a laptop, and 46% had android smart phones; 97% had access to WiFi at home, with 64% indicating that internet access was reliable and stable. The majority of students reported only occasional or less frequent experience with online learning and assessment before the COVID-19 pandemic, but 59% reported they were confident with online learning and assessment at the time of the study. Only 34% found online teaching more productive than face-to-face teaching, and 90% expressed concern that online assessment might be disrupted by poor internet/power failure. Sixty-two percent of students had a suitable space for taking an online exam at home. The majority of students (55%) recommended that more online examinations should be part of curricula even after the pandemic.

Discussion and Conclusions: These results highlight challenges that medical educators may confront when trying to adopt online learning and assessment, as well as issues that should be addressed for improving future use of technology.

Take-home Messages: Medical educators and policymakers should take necessary measures to improve the quality of online learning and assessment, as the use of emergent technology is likely to continue as an indispensable component of post-COVID medical education.
#SC40: SC - Evaluating the Educational Response to COVID-19

#SC40.5  Behind the scenes. What do peer teachers think should change in today's education? (9448)

Date of Presentation: 30 August 2021
Time of Presentation: 17:00 to 17:15

AUTHOR(S):
Lucia Maria Galazi, Universidad Austral, Argentina*
Angel Centeno, Universidad Austral, Argentina

ABSTRACT:
Background: For over 12 years, the Department of Medical Education has been offering a pedagogical training course for peer teachers at Universidad Austral's School of Biomedical Sciences. The aim is that participants understand the complexity of teaching and learning processes, learn new teaching strategies and the different types of evaluation. The main objective during 2020’s training, was that peer teachers understood that virtual classes have a different logic from face-to-face classes.

Summary of Work: Enrollment was increased by 60% than the previous year, partly because peer teachers needed more strategies to teach classes in virtual format and also because of the flexibility of the course schedules. Over 6 meeting, participants acknowledged which were the main difficulties of teaching in remote environments and had to suggest an improvement.

Summary of Results: Regarding teaching, 28% of the participants suggested that audiovisual resources would allow a better understanding of concepts and 21% stated that zoom and virtual blackboards limitations, hinder the dynamism of the classes. Regarding students, 24% identified low participation in classes, while 48% stated that students fail to relate or integrate concepts. More than 48% suggested the use of study guides and the analysis of clinical cases to encourage students to study on a weekly basis and 24% supported the importance of formative assessment and feedback to promote meaningful learning.

Discussion and Conclusions: It is possible to detect two different difficulties in pandemic learning environments, those related to virtuality and those highlighted by virtuality. Peer teachers brought to light what was already limited in the face-to-face classroom format. The different conceptions of teaching and also the diverse conceptions of technology in education were emphasised. These ideas are in the core of education and affect the way in which the educational processes are developed. Student centered teaching strategies, formative assessment and feedback are presented as key to solve participation problems. From peer teacher’s experience, they assure that it is easier to implement changes when proposed by two or three assistants, teamwork is vital.

Take-home Messages: - In complex and uncertain times, we must pay attention to what peer teachers are saying. Their commitment to education is evident. Let's listen to them!
#W39: Workshop 39

#W39  Case of the Year - Introducing a novel way to remotely assess students (8194)

Date of Presentation: 30 August 2021
Time of Presentation: 16:00 to 17:30

PRESENTER(S):
Gil Myers, University College London Medical School, UK
Alison Sturrock, University College London Medical School, UK
Sethuparvathy Jayakumar, University College London Medical School, UK

ABSTRACT:
Background: During COVID restrictions, for our year 1 and 2 medical students, we were unable to run practical assessments and could only hold remote online assessments. This meant that we needed to replace an assessment which combined assessment of applied knowledge with observed communication skills and practical procedures with an assessment that could be taken remotely. This assessment needed to maintain the academic standards of a summative assessment on which to base progression decisions. To do this we created a Case of the Year (CotY) assessment. Each CotY case is a time-limited assessment where a student is given a clinical scenario following a patient journey over the course of several years. Students are asked questions related to the problems the patient encounters. Questions type include SBAs, VSA, free text, image-based, etc with some requiring submitted media (e.g. an audio recording). CotY has the option to include media in the question, eg a video of patients gait or heart sound, to enhance the clinical scenario. Having delivered and analysed CotY for two years, we are able to offer an insight into the process, the pitfalls and planning necessary to implement this into existing curriculum either as formative or summative assessment.

Who Should Attend:
• Medical educators involved with the design and delivery of undergraduate assessments.
• Students

Structure of Workshop: Structured to be delivered in hybrid format of audience mixed between online and in-person.
• Introduction and scene setting
• Presenter-led discussion of audience’s “normal practice”, COVID adaptations (focus on remote assessment) and “what will stick” future plans
• Challenge of remote assessment: presentation with breakout audience discussion (using breakrooms and in-person groups)
• Case of the Year (CotY):
  o Presentation: structure and approach, standard setting and marking; includes worked examples
  o Small group task: design CotY framework matched to curriculum
  o Whole group: Feedback and discussion of task
  o Presentation: Student experience
• Conclusions and Summary

Intended Outcomes:
• New ways of assessing: remote assessment, case-based assessment and mixed written assessment
• Framework to introduce CotY assessment into own learning environment
• Consideration of student experience

Level: Introductory/Intermediate (prior knowledge/experience of assessment)
#W40: Workshop 40

#W40 Cultivating self-compassion: A critical skill for medical educators (8399)

Date of Presentation: 30 August 2021  
Time of Presentation: 16:00 to 17:30

PRESENTER(S):  
Jay Behel, Rush Medical College, USA  
Susan Glick, Rush Medical College, USA  
Janet Shlaes, Rush University, USA

ABSTRACT:  
Background: Compassion is the capacity to notice and be moved by others suffering and feel warmth, caring and the desire to offer help. Compassion is also about connecting with the suffering, failure and imperfections that are part of the shared human experience. Professionals in the healthcare environment tend to be highly skilled in the science and art of compassion and often lacking in the skill of self-compassion. As physicians, educators, and leaders, we are trained to embody perfection and hold ourselves to impossibly high standards which can directly lead to exhaustion, cynicism, and burnout. When a person reaches that stage of exhaustion, they are unable to give anymore, become increasingly cynical and seek interpersonal distance, which directly impacts their capacity for empathy and compassion. Healthcare professionals are a population especially at risk for high levels of burnout and compassion fatigue. Self-compassion is the ability to recognize one’s own suffering and to respond to it gently and kindly, in the way one would respond to another’s suffering. Research supports that practicing self-compassion improves wellness and increases resilience. Additionally, professionals who model the practice of self-compassion create stronger, happier, more resilient teams. Paradoxically, intentionally practicing and modeling self-compassion increases our effectiveness as professionals and as humans, strengthens our capacity for compassion, and increases our added value to our colleagues, patients, students and organization.

Who Should Attend: Medical educators and clinicians at all levels though particularly applicable to those who are both educators and clinicians.

Structure of Workshop: In this workshop, we will review Kristin Neff’s three (3) core elements of self-compassion – self-kindness vs self-judgement; common humanity vs isolation; and, mindfulness vs over-identification. In breakout groups, participants then will identify opportunities for applying these elements in their own lives while reflecting on the potential impact on self and others.

Intended Outcomes: After the workshop, participants will be able to:  
Summarize and apply self-compassion core elements.  
Practice deliberately defusing from perceived failure, while identifying ways to learn and grow from that failure.  
Adopt a personal and leadership approach that models and supports self-compassion.

Level: Introductory. This training is appropriate for all levels.
#W41: Workshop 41

#W41 The International XII meeting - an international working group for medical educators (7692)

Date of Presentation: 30 August 2021
Time of Presentation: 16:00 to 17:30

PRESENTER(S):
Debra Klamen, Southern Illinois University School of Medicine, USA
Harm Peters, Charité, Germany

ABSTRACT:
Background: The international XII meeting (XII stands for extraordinarily innovative investigators - obviously tongue-in-cheek) was developed by Dr. Debra Klamen as an offshoot of the Southern Illinois University School of Medicine's Department of Medical Education XII meeting, which has been ongoing for over a decade. In the 12 months since this brainstorming group of international educators (invited from those schools belonging to the ASPIRE academy) has been meeting, numerous ideas for medical education innovation and 1 internationally collaborative publication have been realized. The intention of this workshop is to bring together ASPIRE Academy-member schools in addition to those schools interested in participating in this process together to hold an International XII meeting live and in-person.

Who Should Attend: The intention of this workshop is to bring together ASPIRE Academy-member schools in addition to those schools interested in participating in this process together to hold an International XII meeting live and in-person.

Structure of Workshop: 1. Introduction of iXII and its work to date (including discussing its goals and objectives) - 10 minutes
2. Open brainstorming meeting of all members with emphasis on: - 70 minutes
   a) medical education innovations that can be shared among attendees
   b) ideas for collaboration (research, publication, shared curricula)
3. Wrap up and next steps - 10 minutes

Intended Outcomes: 1) Bring more schools interested in the work of the iXII into its membership
2) Sharing of important ideas/innovations/research collaborations among attending members
3) Broadening the scope of the iXII beyond those schools that are ASPIRE winners only winners only

Level: All interested in working in the iXII collaborative are encouraged to attend.
ABSTRACT:
Background: Background In 2019, the UKs General Medical Council outlined the professional skills, knowledge and behaviours that they believe are essential for safe practice and which will be tested in the UKs new Medical Licensing Assessment (MLA). This change presents a challenge to clinicians, educators and administrators to ensure that students are prepared for this new assessment and to map these changes to existing curricula. In this workshop, we explore curriculum mapping, how the motivations and interests of overlapping Communities of Practice including administrators, clinicians and educators can be visualised and translated through the structure of the map, and how the meaning of the map is constructed by the user. We will introduce the concept of the boundary object: a term used in sociology to describe an artefact that supports collaboration without the need for consensus between social worlds by acting as a site of translation, where the meaning of concepts are interpreted from the perspectives of those who interact with the object (Star and Griesemer, 1989). Delegates will be able to explore a Sofia curriculum map during the workshop (either remotely or in a face-to-face setting).
Who Should Attend: Who should attend the workshop? Any medical educator, administrator or clinician with an interest in curriculum mapping software and national licensing assessments
Structure of Workshop: Structure of the workshop
- Brief plenary outlining the concept of the boundary object and how this informs a new perspective on curriculum mapping
- Walkthrough the new Sofia MLA clinical view
- Virtual breakout groups with delegates from different professional backgrounds working together to consider how their individual perspectives shapes their interpretation of a curriculum map
- Discussion, Q&A session with Facilitators, and Feedback
Intended Outcomes: Intended Outcomes:
- An introduction to boundary objects as a conceptual device in curriculum mapping
- Experience using the Sofia software package, alongside real-time advice and input from its design team
- Support community building within international Med Ed in curriculum development and mapping using curriculum software
Level: Intermediate
#S18: Symposium 18

**#S18** The role of educational scholarship in faculty development: IAMSE sponsored symposium (7511)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**  
Peter de Jong, IAMSE & Leiden University Medical Center, The Netherlands  
Amber Heck, TCU and UNTHSC School of Medicine, USA  
Bonnie Dickinson, Mercer University School of Medicine, USA  
Adi Haramati, Georgetown University School of Medicine, USA  
Neil Osheroff, Vanderbilt University School of Medicine, USA

**Summary:** Faculty development in health sciences education has several dimensions, ranging from basic teaching skills to leadership in organizational change. One of the dimensions addresses educational scholarship. In general scholarship is defined as the creative, systematic, and rational inquiry into a topic and the honest reporting of results and conclusions drawn from that inquiry. It always builds on existing knowledge in the field and employs critical analysis and judgment to enhance understanding. Scholarship results in a product that is shared with others and is subject to the criticism of peers qualified to judge the product. The most well know product is the journal article, but many other scholarly products exist.

For the educator in health sciences education it is crucial to develop themselves in this field of educational scholarship to be able to explore the impact of their educational practice and to improve their teaching based on theory and evidence. This symposium will address some examples of scholarship program initiatives and an overview of opportunities to disseminate and publish scholarly outcome.

**What will they gain from participating:**  
After attending the session, the participants will have a clear view of what educational scholarship is and what opportunities exist to grow from an educator into an educational scholar.

**Who should participate:** The symposium is open to all educators who have interest to develop more in the field of educational scholarship.
The COVID-19 pandemic has had a tremendous impact on medical education. In this unique situation where distance education is a priority instead of face-to-face training, the adaptability of the trainers has been tested. While COVID-19 will be remembered as a source of disruption for many, it is very possible to see that crisis as a catalyst for the transformation of medical education that had been brewing for many years already. It is obvious that alternative learning measures and new standards need to be established in medical education, especially in distance education and use of available technology.

The impact of COVID-19 pandemic on medical education can be managed with online teaching and assessment, however those technology-based educational sessions do not simply mean placing classes and lectures on to a virtual learning environment. We need innovative strategies to design and structure, so that we can reach similar outcomes with traditional face-to-face teaching.

In this symposium, the problems encountered in distance education during the pandemic and their solutions will be discussed and new strategies will be proposed.

What will they gain from participating:
1) Problems and solutions in distance education
2) New trends in distance education
3) Key skills needed to make distance learning engaging and interactive for teachers and students
4) Concrete tips on how to make distance learning at least as effective as face-to-face education

Who should participate: Teachers and trainers, researchers, deans and course leads, faculty developers, administrators and students
Where the rubber meets the road - An integrative review of programmatic assessment in health care professions education

Date of Presentation: 30 August 2021
Time of Presentation: 18:00 to 18:20

AUTHOR(S):
Suzanne Schut, Maastricht University, The Netherlands*
Lauren A. Maggio, Department of Medicine, Uniformed Services, University of the Health Sciences, USA
Sylvia Heeneman, Maastricht University, The Netherlands
Jan van Tartwijk, Utrecht University, The Netherlands
Cees van der Vleuten, Maastricht University, The Netherlands
Erik Driessen, Maastricht University, The Netherlands

ABSTRACT:
Introduction: Programmatic assessment was introduced as an approach to design assessment programmes with the aim to simultaneously optimize the decision-making and learning function of assessment. An integrative review was conducted to review and synthesize results from studies investigating programmatic assessment in health care professions education in practice.

Methods: The authors systematically searched PubMed, Web of Science, and ERIC to identify studies published since 2005 that reported empirical data on programmatic assessment. Characteristics of the included studies were extracted and synthesized, using descriptive statistics and thematic analysis.

Results: Twenty-seven studies were included, which used quantitative methods (n = 10), qualitative methods (n = 12) or mixed methods (n = 5). Most studies were conducted in clinical settings (77.8%). Programmatic assessment was found to enable meaningful triangulation for robust decision-making and used as a catalyst for learning. However, several problems were identified, including overload in assessment information and the associated workload, counterproductive impact of using strict requirements and summative signals, lack of a shared understanding of the nature and purpose of programmatic assessment, and lack of supportive interpersonal relationships. Thematic analysis revealed that the success and challenges of programmatic assessment were best understood by the interplay between quantity and quality of assessment information, and the influence of social and personal aspects on assessment perceptions.

Discussion and Conclusions: This study adds to the literature by comprehensively collecting and reviewing studies that examined programmatic assessment in practice. Although some of the evidence in the literature may seem compelling to support the effectiveness of programmatic assessment in practice, tensions will emerge when simultaneously stimulating the development of competencies and assessing its result. The identified factors and inferred strategies provide guidance for navigating these tensions.

#RP9: Research Paper - Hot topics in assessment

#RP9.2  Perceptions of ad hoc entrustment decisions: A qualitative study of early clinical students (7753)

Date of Presentation: 30 August 2021
Time of Presentation: 18:20 to 18:40

AUTHOR(S):
Severin Pinilla, University Hospital of Old Age Psychiatry and Psychotherapy, Switzerland*
Alexandra Kyrou, University Hospital of Psychiatry and Psychotherapy, University of Bern, Switzerland
Norina Maissen, Institute for Medical Education, Department for Assessment and Evaluation, University of Bern, Switzerland
Stefan Klöppel, University Hospital of Old Age Psychiatry and Psychotherapy, University of Bern, Switzerland
Werner Strik, University Hospital of Psychiatry and Psychotherapy, University of Bern, Switzerland
Christoph Nissen, University Hospital of Psychiatry and Psychotherapy, University of Bern, Switzerland
Sören Huwendiek, Institute for Medical Education, Department for Assessment and Evaluation, Switzerland

ABSTRACT:

Introduction: Undergraduate medical education (UME) reforms have started to incorporate competency-based designs in many countries (Chen et al. 2016). Entrustable professional activities (EPAs) as observable clinical activities that trainees carry out under supervision rely on the emergence of trust between stakeholders (Ten Cate et al. 2015). Theoretical models of trust emergence have been developed based on research in different fields, including medicine, higher education, and psychology (Holzhausen et al. 2017). While perceptions of trust emergence have been explored from a graduate medical education (GME) perspective, little attention has been paid to how medical students in their first clinical rotations perceive ad hoc entrustment decisions. To address this gap in the literature, we aimed to explore which factors early clinical students perceive as relevant for ad hoc entrustment decisions in clinical workplaces.

Methods: We designed a case study within a social constructivist epistemology. We classified our study subject (clerkship year as early and first full-time clinical exposure) as a key case since it was one of the first core clerkship programs to implement an EPA-based curriculum within a formative assessment program. The purpose of the study was exploratory, with an approach based on theories of trust formation and entrustment. The units of analysis included semi-structured interviews with clerkship students and health care team members. The sample (n=28) consisted of 46% (n=13) male and 54% (n=15) female student interviewees from German-, French-, and Italian-speaking cantons with an average age of 24 years (range: 22–33) and four health care team members identified through student feedback.

Results: Medical students in their core clerkship year perceived clinical residents as critical educational gatekeepers and key facilitators of entrustment decisions. Another important theme emerged around students’ motivation, initiative, and willingness to engage with the health care team and patients. Students actively engaged in trust formation processes with different health care team members. The entrustment decision process was perceived as multilateral and dynamic, involving all health care team members and patients. Multiple entrusting supervisors for clerkship students, including nurses and psychologists, emerged from our interview data. They assumed an active role in negotiating entrustment decisions both with and for clerkship students, either facilitating or hindering opportunities. The entrustment decisions emerged as a result of a multifaceted supervisor network interaction.

Discussion and Conclusions: Supervising residents ability to integrate students into clinical teams seems to be a critical factor in facilitating entrustment opportunities for clinical activities. Students active management of informal supervisor networks of health care team members and these team members willingness to assume responsibility for the students education emerged as relevant aspects for ad hoc entrustment as well. Our study's surprising finding that some health care team members seemed to assume a professional educational responsibility beyond that which was expected from them might be regarded as in line with Solbrekkes and Englunds work on professional responsibility (Solbrekke et al. 2011, Solbrekke et al. 2014). They point out that professional responsibility includes situated judgment, trust, negotiated
standards, and proactivity, which differs from the professional accountability discourse that sometimes dominates curriculum design. Incorporation of these concepts into ad hoc entrustment decisions opens up new possibilities for clinical teaching of clerkship students.

References:
*The presented research paper has been accepted for publication in the Journal Medical Education on December 4th 2020.

#RP9: Research Paper - Hot topics in assessment

#RP9.3 A collective case study of supervision and competence judgments on the inpatient internal medicine ward (7727)

Date of Presentation: 30 August 2021
Time of Presentation: 18:40 to 19:00

AUTHOR(S):
Tristen Gilchrist, University of British Columbia, Canada*
Rose Hatala, University of British Columbia, Canada
Andrea Gingerich, University of Northern British Columbia, Canada

ABSTRACT:
Introduction: Workplace-based assessment in competency-based medical education (CBME) employs entrustment supervision scales to suggest trainee competence [1, 2]. However, clinical supervision involves many factors and entrustment decision-making likely reflects more than trainee competence [3-6]. Contextual factors likely play an important role in supervisory decision-making [3]. We do not fully understand the ways in which a supervisor’s impression of trainee competence is reflected in their provision of clinical support. We must better understand this relationship to know whether documenting level of supervision truly reflects trainee competence. In this study, we aim to follow a supervisor’s judgment of competence, their supervisory behaviours and their entrustment decisions to address the following questions: What informs the level of supervision provided to a trainee for a specific task and how do the levels of supervision align with judgments of trainee competence?

Methods: We undertook a collective case study, a methodology well-suited to research in complex settings where concepts may not have simple causal relationships [7, 8]. We defined each case as a dyad consisting of an attending internal medicine physician supervising a senior resident on a Clinical Teaching Unit inpatient wards. We conducted field observations of typical daily activities and semi-structured interviews. Data was analysed within each dyad and across dyads to identify supervisory behaviours, what triggered the behaviours, and how they related to judgements of trainee competence.

Results: Ten attending physician-senior resident dyads participated in the study. We identified eight distinct supervisory behaviours that represented a change or a choice in the level of supervision provided. The behaviours were enacted in response to trainee and non-trainee factors. Supervisory behaviours corresponded with varying assessments of trainee competence, even within a dyad. A change in the attending’s judgment of the resident’s competence did not always correspond with a change in subsequent observable supervisory behaviours.

Discussion and Conclusions: There was no consistent relationship between a trigger for supervision, judgment of trainee competence, and subsequent supervisory behaviour. This underscores the importance of non-trainee factors in entrustment decision-making [3, 5, 6, 9]. This has direct implications for entrustment assessments tying competence to supervisory behaviours, because supervision is complex. The amount of supervision provided for inpatient, ward-based medicine is often due to factors other than the trainee and does not appear to be well-aligned with the competence judgment of that trainee. In our dyads, using a retrospective assessment based solely on supervisory behaviour would likely have misrepresented the judgment of trainee competence. Workplace-based assessments that capture narrative data including the rationale for supervisory behaviours may lead to deeper insights than numeric entrustment ratings.

References: References

#RP9: Research Paper - Hot topics in assessment

#RP9.4   A Phenomenological Investigation of Patients’ Experiences During Direct Observation in Residency: Busting the Myth of the Fly on the Wall (7742)

Date of Presentation: 30 August 2021
Time of Presentation: 19:00 to 19:20

AUTHOR(S):
Chris Rietmeijer, Amsterdam University Medical center, The Netherlands*
Mark Deves, Amsterdam University Medical Centers, location VUmc Department of General Practice/Family medicine, The Netherlands
Suzanne van Esch, Amsterdam University Medical Centers, location AMC Department of General Practice/Family medicine, Me, The Netherlands
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Mario Veen, Erasmus Medical Center Department of General Practice, The Netherlands
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Pim Teunissen, School of Health Professions Education Maastricht University, The Netherlands

ABSTRACT:
Introduction: Direct observation (DO) of residents by supervisors is a highly recommended educational tool in postgraduate medical education, yet its implementation is poor. Some of the reasons residents and supervisors have for not engaging in DO relate to their interaction with patients during DO. Residents sometimes fear that patients see DO as a sign of incompetence. Also, residents report that they behave “unnaturally” towards the patient when an observer is present. Furthermore, both residents and supervisors experience some difficulty in encouraging the patient to address the resident rather than the supervisor. We do not know patients’ perspectives on these interactions, nor, more broadly, what it is like to be a patient in a DO situation. Understanding patients’ perspectives could guide supervisors’ and residents’ approach to patients in DO situations and thus benefit patients’ wellbeing and care.

Methods: We performed our study in the general practice (GP) residency program at the Amsterdam University Medical Centers. We conducted an interpretative phenomenological interview study to identify the essential elements of the experience of being a patient in a DO situation. We interviewed 11 patients immediately after the DO situation, in a separate room at the GP practice. We chose a very open interview format. Our analysis included five rounds of interpretive describing and coding, through the lens of existential aspects of experience (lived body, lived space, lived time and lived relationship), and a final phase of phenomenological reduction to arrive at the essential elements of the experience. Constant reflexivity was at the heart of this process.

Results: Patients experienced DO as a win-win situation in that the resident could learn from the patient while the patient benefited from two doctors, and “two heads are better than one”.

Essential elements of the experience were:
• Patients experienced DO situations as a junior doctor who was observed by a senior doctor. This signaled that the junior doctor was a learner who was less experienced than the senior doctor, resonating with patients’ need for good care.
• Patients experienced DO situations as occasions where an unknown, or little known, doctor was observed by the patient’s more familiar GP. This resonated with patients’ need for relatedness with their GP.

Although patients were willing to address the resident, for the above reasons they sought moments of contact with and some participation by the supervisor. They did not see these short moments of contact as a problem.

Discussion and Conclusions: Our results suggest that conceptions of DO in which the supervisor is trying to act as the fly on the wall, rather than be part of the interaction, should be critically reviewed. To that end,
we propose the concept of participative direct observation (PDO) in workplace learning. This concept emphasizes that, in DO situations, there is always some participation of the supervisor. The challenge is to adjust the amount of participation to the needs of the patient and the resident. Embracing this concept of PDO may benefit both patients well-being and residents learning.

References:
ABSTRACT:
Background: When healthcare systems worldwide face unprecedented pressure the growth of information technology use and in particular artificial intelligence (AI) embedded tools promise to improve health and care. However, health professionals remain quite reticent about adopting AI technologies. Such attitude bears the potential to damper its successful implementation since they play a central role in this digital transition. That said, this investigation aims to explore the perspectives and expectations of health professionals and medical students on the adoption of AI in healthcare while understanding their vision on the main challenges, concerns and opportunities that accompany this process.

Summary of Work: Based on technology acceptance models and literature review an online survey was designed and applied. It was composed of eight multiple choice questions and seven questions using a seven-point Likert scale. Data was analyzed using IBM SPSS (version 26) with a confidence interval of 95%.

Summary of Results: The preliminary results cover answers from 61 health professionals and 130 medical students undergoing clinical rotations. One third of the respondents feels their institution is prepared to adopt more AI-based technologies, even though less than 10% feel supported to use them and less than 15% are satisfied with the current AI applications in the workplace. The top challenges to AI implementation were: technology costs (76%), healthcare-associated bureaucracy (70%) and lack of training (64%). The main concerns associated with liability issues (71%), increased healthcare inequity (59%) and fear of making bad decisions following AI-based recommendations (53%). Staff training (87%) and articulation with other stakeholders (60%) were considered key issues to faster development of adequate solutions.

Discussion and Conclusions: AI use in healthcare is still in its begging, with respondents recognizing lack of support and alternatives. There are important challenges that need to be addressed and concerns that need clarification, mirroring the complexity of this matter. It seems a wise adoption of AI depends on right attitude and education, particularly of last year medical students.

Take-home Messages: • Given its immense potential, AI can help tackle many of healthcare difficulties • Health professionals are vital to the successful implementation of AI • Stakeholders engagement and education are key to a positive but cautionary attitude
#EP9: ePoster - Curriculum Subjects

#EP9.2 Artificial Intelligence in Undergraduate Medical Education: A Scoping Review (9095)

**Date of Session:** 30 August 2021

**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**
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Juehea Lee, University of Toronto, Temerty Faculty of Medicine, Canada
David Li, University of Ottawa, Faculty of Medicine, Canada
Kulamakan Kulasegaram, The Wilson Centre, University Health Network, Canada

**ABSTRACT:**

**Background:** Artificial intelligence (AI) is a rapidly growing phenomenon poised to instigate large-scale changes in medicine. However, medical education has not kept pace with the rapid advancements of AI. Despite several calls to action, the adoption of teaching on AI in undergraduate medical education (UME) has been limited. This scoping review aims to identify key concepts in the peer-reviewed literature on AI training in UME.

**Summary of Work:** The scoping review was informed by Arksey and O'Malley's methodology. 8 electronic databases including MEDLINE and EMBASE were searched for articles discussing the inclusion of AI in UME between January 2000 and July 2020. 4299 articles were independently screened by three co-investigators and 22 full-text articles were included. Data was extracted using a standardized checklist. Themes were identified using iterative thematic analysis.

**Summary of Results:** The literature addressed: 1) a need for an AI curriculum in UME, 2) recommendations for AI curricular content including machine learning literacy and AI ethics, 3) suggestions for curriculum delivery, 4) an emphasis on cultivating uniquely human skills such as empathy in response to AI-driven changes, and 5) challenges with introducing an AI curriculum in UME. However, there was considerable heterogeneity and poor consensus across studies regarding AI curricular content and delivery.

**Discussion and Conclusions:** Despite a large volume of literature, there is little consensus on what and how to teach AI in UME. Further research is needed to address these discrepancies and create a standardized framework of competencies that can facilitate greater adoption and implementation of a standardized AI curriculum in UME.

**Take-home Messages:** AI has the potential to have a significant impact on medicine. UME is uniquely positioned to prepare learners for these changes as it allows for early exposure and integration of AI into medical education and has the capability to reach the broadest medical learner population. This scoping review identified key concepts and themes addressed by the peer-reviewed literature on AI and UME. However, there is significant heterogeneity and poor consensus within the literature. Further research will be needed to appraise and reconcile this evidence in order to adequately prepare medical learners for the forthcoming integration of AI in medicine.
Date of Session: 30 August 2021
Time of Session: 18:00 to 19:30

AUTHOR(S):
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Fern Brunger, Memorial University of Newfoundland, Canada

ABSTRACT:
Background: Anatomy pedagogy uses virtual simulation, mannequins, the 3D printing of organs, and radiological approaches. This recent shift toward simulated human specimens has been associated with the objectification of patients and a loss of humanism in learners. My work shows how experiences in the anatomy lab lead students to distance bodies from personhood.

Summary of Work: This research is part of a longitudinal critical ethnography exploring the professional identity development of pre-clerkship medical students, at one Canadian medical school. Data collection was done through combined participant observation of governance meetings, and monthly focus groups with students. The focus groups concentrated on the students experiences with the formal and informal curriculum.

Summary of Results: The students reported being surprised in the operating theatre, as the bodies they were observing were different from the plastinated body parts they had used in the anatomy lab: On our [lab] specimens the nerves are yellow, the veins are blue, and the arteries are red; everything here is pink! As well, first-year students were taken aback that there was no time in the curriculum to acknowledge that the specimens were once human beings and were now only being used as learning tools. The students found using the plastinated body parts to be removist, resulting in disrespect for the human remains.

Discussion and Conclusions: The culture of the medical school reinforces the reductionist view of the body as a machine through removist anatomy experiences. The plastinated anatomy body parts were re-coloured and in other ways made different from an actual human body, contributing to a dehumanizing experience. The students recognized the utilitarian approach to the body parts as learning tools. The students were developing removist dispositions which can lead to the unempathetic treatment of patients. The unintentional message that patients are like plastinated objects forms part of the hidden curriculum in medical school.

Take-home Messages: The students experienced tensions handling the plastinated specimens as objects and recognizing that they belonged to a human being. The emotional neutralization developed using plastinated body parts is a by-product of a hidden curriculum in the institution. The anatomy lab is one of the earliest learning fields where empathy can be developed in students.
#EP9.4 Active learning strategies to promote student-centred learning in anatomy: A Nordic approach (8269)

**Date of Session:** 30 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
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Armi Hirvonen, JAMK University of Applied Sciences, School of Health and Social Studies, Finland  
Kåre Rønn Richardsen, Oslo Metropolitan University, Department of Physiotherapy, Faculty of Health Sciences, Norway  
Gert Værge Østergaard, University College of Northern Denmark, Department of Physiotherapy, Denmark  
I-SAIL project team, Nordic Network in Higher Education, Sweden, Finland, Norway

**ABSTRACT:**

**Background:** Understanding of anatomy is challenging in health education, students frequently adopting a surface approach to learning. Despite the effectiveness of student-centred learning (SCL), anatomy still heavily relies on a teacher-centred approach. Active learning strategies offer opportunities to enhance students learning. In 2020, educators from three Nordic countries created a network called I-SAIL (Nordic Initiative for promoting Student Activities for Independent and Lifelong Learning in Physiotherapy), with the goal to design, implement and evaluate SCL in anatomy education. The aim of the first project year was to support teachers in their transition from teacher- to student-centred learning via innovative methods and investigate teachers experiences within this process of change.

**Summary of Work:** Following the identification of institutional needs, experiences and research findings, methodology for SCL was developed. Interviews with three teachers were conducted to explore experiences from SCL implementation.

**Summary of Results:** An on-line guide for blended learning, on-line training on SCL and peer-supervision was developed to support teachers. Participant teachers implemented pilot learning activities in anatomy using the on-line guide, e-learning platforms, videos and case studies utilizing the flipped classroom method. The teachers acknowledged the value of developing competences in designing learning activities to stimulate students active learning. The teachers perceived the students as more interested, engaged and communicative than previously. Teachers reported experiences of fulfillment, leading to personal learning and increased work motivation since they had time to join discussions as students joined group work prepared. Teachers enhanced their skills in digitalization with confidence to modify teaching. In the process, peer-teacher support was identified as a means to integrate SCL in anatomy.

**Discussion and Conclusions:** The integration of SCL in anatomy positively influenced teaching and students activity in learning. The findings underline the value of international collaboration for educational change. Joint development work tackled the common pedagogical challenges. Acknowledged limitation of the study is the lack of student feedback. This will be the focus during the project’s second year.

**Take-home Messages:** The project has addressed the traditional teacher-centred approach in anatomy by developing methods to support teachers in their transition towards a student-centred approach. Implemented SCL activities utilized blended learning, resulting in positive teacher experiences and increased student engagement.
# EP9: ePoster - Curriculum Subjects

# EP9.5 Understanding medical student perceptions for telehealth curricular design (8056)

**Date of Session:** 30 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
Mark Brahier, Georgetown University Medical Center, USA*  
Michelle Brosnan, Georgetown University Medical Center, USA  
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**ABSTRACT:**  
**Background:** The COVID-19 pandemic brought a sense of urgency to integrate telehealth into medical education curricula. When refining curriculum for telehealth education, educators and curricular decision-makers must consider medical student perceptions of telehealth.  
**Summary of Work:** This is a mixed-methods study involving medical students in the early clinical phase of their education. All students responded to the questions (1) Given your chosen specialty, how do you see telehealth and telemedicine fitting into your future career? and (2) Do you see yourself enjoying telemedicine in the future? Students were stratified by specialty of interest (primary care versus non-primary care, surgical versus non-surgical) to examine whether intended specialty influences perceptions of telehealth. A subset of students voluntarily completed a follow-up survey.  
**Summary of Results:** 204 narrative reflections and 79 surveys were analyzed. Within their specialties of interest, students frequently commented on the use of telehealth for routine follow-up (60% of reflections). This theme was more common among students interested in surgical than non-surgical specialties (81% vs 54%; p=0.0004). Challenges around performing a physical exam were seen in 40% of reflections. For telehealth in general, students identified improved patient convenience and accessibility to doctors (78%) but noted difficulty building the patient-physician relationship (32%). Based on survey results, 94% believe that telehealth should be included in medical education, and 50% indicated that standardized patient encounters are the most important telehealth course component.  
**Discussion and Conclusions:** A majority of students, particularly students interested in surgical specialties, intended to use telehealth for routine appointments in their future careers. New trainees appear more receptive to telehealth than current practitioners. Regardless of specialty of interest, students acknowledge challenges of losing the physical exam and fear effects on the patient-physician relationship. However, they also cite the critical role of telehealth education in helping them overcome these challenges associated with a virtual visit.  
**Take-home Messages:** - Medical students strongly desire telehealth in medical education with an emphasis on virtual standardized patient interactions - Specialty of interest influences some medical student perceptions of telehealth - Medical educators play a critical role in shaping medical student perceptions of telehealth
#EP9: ePoster - Curriculum Subjects

#EP9.6 Assessing effectiveness of an introductory workshop on systematic review for healthcare professionals: Adapting to the COVID-19 era (8950)

Date of Session: 30 August 2021  
Time of Session: 18:00 to 19:30

**AUTHOR(S):**  
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Sohaila Cheema, Weill Cornell Medicine-Qatar, Qatar  
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**ABSTRACT:**  
**Background:** Evidence-based practice is an essential element for empirically grounded healthcare practice. Utilization of reliable scientific evidence from systematic reviews (SRs) is essential for evidence-guided public health and patient-centered care programs. Available evidence suggests that healthcare professionals (HCPs) do not possess adequate knowledge and skills in conducting SRs.

**Summary of Work:** In 2019, a 7-hour workshop, was developed and implemented for HCPs. The workshop, approved for continuing education credits, was hosted twice in 2019 with 44 and 48 participants. Taking the participant feedback into consideration, the workshop duration was increased from 7 to 10 hours, and its content revised to include an additional session on lessons learnt for two additional workshops offered in 2020: the first workshop (with 30 participants) using webinar approach during the 2020 pandemic; and the second one (with 20 participant) as an in-person activity later in the year. In addition to the didactic sessions, active learner-centric activities such as case studies, group work, search strategy exercises, hands-on software utilization, and quizzes were utilized. Pre/post-assessment test consisting of 17 knowledge-based questions, and an online post activity evaluation were utilized to assess the workshops.

**Summary of Results:** The median percentages of correct answers for the pre/post assessment test in 2019 were 70.5%/ 86.4% (in-person), 74.4%/ 88.4% (in-person), and in 2020 were 53.1%/96.9% (webinar), and 61.1%/94.4% (in-person). The knowledge change measured by the pre/post assessment test was assessed using the McNemar test, which demonstrated a statistically significant improvement in the knowledge on the technical aspects of SR methodology (p-values<0.05). The highest knowledge mean increase of 45.2% was observed for the webinar workshop. Additionally, the post-activity assessment revealed a significant increase in knowledge, and a positive impact on participants competence and performance related to SRs.

**Discussion and Conclusions:** The workshop improved participants overall knowledge of conducting a SR and enhanced need-based capacity building efforts in Qatar. Furthermore, SRs provide HCPs invaluable guidance on evidence-based healthcare, public health, and medical practice strategies.

**Take-home Messages:** Implementing workshops on SRs address an identified knowledge gap among HCPs, contributing to continuous professional development and lifelong learning in healthcare research.
#EP9: ePoster - Curriculum Subjects

#EP9.7 Medical student exposure to a career in academia: Evaluation of a national research taster scheme (8359)

**Date of Session:** 30 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
Anita Bolina, Imperial College London, UK*  
Fazal Shah, University of Cambridge, UK  
Victoria Ngai, University College London, UK  
Steven Tominey, The University of Edinburgh, UK

**ABSTRACT:**  
**Background:** The National Student Association of Medical Research (NSAMR) is a student-led organisation dedicated to increasing student involvement in research. In 2020, it conducted a research taster scheme aiming to educate preclinical medical students about careers in academic medicine and provide research experience. The aims of this study were to evaluate the effectiveness of the scheme in increasing awareness and interest in a career in academia, and identify the perceived barriers to students participating in research.

**Summary of Work:** Students applied to the taster scheme and were matched to UK-based research teams who had consented to hosting students. Students spent 1-5 days with their host institution. Students were sent an online evaluation form after the scheme concluded. This scheme was supported by the Wellcome Trust.

**Summary of Results:** 85 students from 13 UK medical schools were matched to 26 research teams for the 2020 cohort. 67 (79%) students completed the online evaluation. 5-point Likert scales (1= Strongly disagree; 5= strongly agree) revealed students found the scheme useful (mean score 4.0) and were likely to recommend the scheme to others (mean 4.7). Students expressed a high interest in a career in academia after their placement (mean 4.2). When evaluating the perceived skills learnt during the scheme, students had higher mean scores in understanding different research methodologies (3.3) and collecting data (3.3), but lower scores in designing research protocols (2.2). The main perceived barriers to undertaking research were students being unsure on how to find research opportunities (87.1%), lack of previous research experience (77.1%) and lack of time (51.4%).

**Discussion and Conclusions:** Whilst the NSAMR research scheme was considered a useful experience for preclinical students, barriers to student involvement in research remain. Universities could address these concerns by providing further information about research careers and offering research-focussed student selected modules in preclinical years. A dedicated research course run by NSAMR may improve confidence in research skills unaddressed by the undergraduate curriculum, such as protocol writing.

**Take-home Messages:** The NSAMR research scheme fosters preclinical interest and awareness in academic medicine. More work is required to address self-reported concerns for accessing research opportunities.
#EP9: ePoster - Curriculum Subjects

#EP9.8 Developing Peer-to-Peer Research Educational Activities (9113)

**Date of Session:** 30 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
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Anastatia Martin, IFMSA, Kings College London, UK  
Daniel Dîrul, IFMSA, State University of Medicine and Pharmacy Nicolae Testemitanu, Republic of Moldova  
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Florentina-Cristina Scarlat, IFMSA, University of Medicine, Pharmacy, Science and Technology George Emil Palade of Targu Mures, Romania

**ABSTRACT:**  
**Background:** The inclusion of basic research competencies in medical education has been reported to provide significant advantages in their development as physicians. Recently collected data from the Research Committee of the International Federation of Medical Students Associations (IFMSA) has shown that although 98% of medical students worldwide think that research is important in medical education, less than 20% believe that it is sufficiently addressed in their medical curricula. Motivated by these numbers we created three Research Educational Activities (EAs), student-led, outcome-based workshops that are open, free and accessible to anyone interested in learning about Medical Research.  
**Summary of Work:** Starting in 2018, three toolkits were created, Basic Principles of Medical Research, Research Design and Study Methods, and Critical Appraisal, each one contains ready-to-use training presentations, pre-post evaluation forms and a training manual. In 2019, the pilot version was launched and over 25 different National Member Organizations (NMOs) signed up for the testing phase. After the pilot ended, an evaluation was made and an updated version was published in 2020.  
**Summary of Results:** Our toolkits are used within the 145 NMOs of the IFMSA and our most recent reports show that over 70% of our NMOs use our EA toolkits at a local level, out of which 54% replicates them in more than a half of their total active local committees. Detailed evaluation results of EA modules will be analysed and presented at the conference.  
**Discussion and Conclusions:** New open interactive ways of learning, including peer-education strategies that can be easily distributed globally, are crucial to improving the knowledge gap in research education. We believe that such educational interventions can enable medical schools and tutors worldwide to help students tackle barriers faced in research education. It also empowers students to start their own research projects and build on what they have already achieved, to better contribute to the scientific community.  
**Take-home Messages:** Medical students often lack opportunities to learn about research in medical school. The barriers faced in research education within the medical curriculum can be overcome through peer-assisted learning. These EAs created by students with different backgrounds, are only one small step inside the education-revolution were living today.
**EP9: Evidence based medicine (EBM) for undergraduate medical students in Sudan: Source of information, knowledge about terms, skills related to EBM and attitude toward EBM in Sudan (9083)**

**Date of Session:** 30 August 2021  
**Time of Session:** 18:00 to 19:30

**AUTHOR(S):**  
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Heitham Awadalla, Department of Community Medicine, Faculty of Medicine, University of Khartoum, Sudan

**ABSTRACT:**

**Background:** EBM is the use of the current best evidence for patient care. Medical students should be able to critically appraise the research evidence to help them during their clinical practice in hospitals. We conducted this study to assess the skills, terms and attitude toward EBM.

**Summary of Work:** A cross sectional study included medical students from governmental universities. Students completed an online validated questionnaire which consists from several sections to assess the skills, attitude and knowledge about terms related to EBM. A scale ranging from 1(strongly disagree) to 5(strongly agree) was used for the 11 questions assessing the attitude, and a scale ranging from 1(Poor) to 5(advanced) for EBM skills.

**Summary of Results:** A 761 medical students with a mean age 21.97 ± 1.64 were included. 327 (43%) of them were male. The most common used search engines were Google 690 (91%) and Wikipedia 465 (61%). Medical books 719 (94%) and lecture notes 353 (46%) were the most common sources for health information. Majority of students rated their skills as average and below average for all questions (overall= 2.18 ± 0.8). Students rated their skills as: poor (31%) in identifying locating professional literature as, average (34%) in searching online databases, poor (42%) in critical appraisal of a scientific publication reporting findings from clinical research and poor (36%) in Critical appraisal of available scientific literature. Regarding attitude, the overall mean score for was 2.83 ± 0.76. There is no significant difference in attitude score between students with or without EBM training (P = 0.2). The terms with highest understanding were case-control study (45%) and case report (44%) for study design. Median (44%) and sample size (43%) for statistics. Incidence (46) and prevalence (44%) for epidemiology.

**Discussion and Conclusions:** Medical students have a knowledge gab in EBM for skills and terms and an average attitude toward EBM. Majority of them were using nonscientific search engine to obtain medical information. There is a need to educate medical students about the proper steps for obtaining the scientific literature and EBM skills.

**Take-home Messages:** It’s suggested to implement scientific programs for improving the knowledge about EBM and enhance EBM skills which is needed among students.
#EP9: ePoster - Curriculum Subjects

#EP9.10  The Importance (and lack) of Nutrition and Dietary Counseling in Medical Education - Student Perspectives (9090)

Date of Session: 30 August 2021
Time of Session: 18:00 to 19:30

AUTHOR(S):
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Jacob Klickstein, Tufts School of Medicine, USA
Amanda Cao, Harvard Medical School, USA
Michael Seward, Harvard Medical School, USA

ABSTRACT:

Background: Nutrition plays a major role in the pathogenesis of heart disease, cancer, stroke, and other diseases with high morbidity and mortality. However, most medical school curricula dedicate inadequate time to formal nutrition education. Consequently, medical students often report feeling ill-prepared to counsel patients about diet and nutrition, despite an awareness of the crucial role these topics play in maintaining and improving health. The purpose of this study was to elicit medical student perspectives on both the importance and extent of nutrition education in medical school curricula.

Summary of Work: An anonymous survey was distributed via email and social media channels to 5500 students across 9 US medical schools. Responses were collected over 3 weeks (12/27/2020 - 1/17/2020). Questions covered demographics and experiences and perspectives about medical education in nutrition. Descriptive statistics were used to depict responses.

Summary of Results: 1182 medical students fully completed the survey, out of the 5500 (21.5%) that were contacted. 681/1182 (57.61%) responded that they had never participated in a medical school course providing formal education in nutrition / eating decisions. 420/496 (84.68%) of those who did take a course in nutrition / eating decisions said it was required. 1048/1182 (88.66%) said that medical schools should require formal nutrition education (beyond metabolism) to graduate. 1056/1182 (89.34%) reported that formal training on patient counseling for nutrition / eating decisions should be required to graduate. 1103/1182 (93.3%) somewhat or strongly agreed that understanding the effects of nutrition / eating decisions on the human body is critical for maximizing patient care.

Discussion and Conclusions: A substantial disconnect exists between the value medical students place on formal nutrition education and the extent of this training required by medical school curricula. Given this disconnect, medical schools should consider methods including holding OSCE (Objective Structured Clinical Examinations) exams to evaluate the impact of additional formal nutrition education on medical student preparedness to counsel patients on nutrition / eating decisions.

Take-home Messages: Medical students strongly desire formal nutrition education, yet the majority are not receiving it. To better serve our patients, more robust nutrition education should be implemented into the core curriculum.
#EP9: ePoster - Curriculum Subjects

#EP9.11 Overcoming Medical Student Neurophobia with a Junior Clinical Fellow [JCF] Led Teaching Programme (8719)

Date of Session: 30 August 2021  
Time of Session: 18:00 to 19:30

AUTHOR(S):
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Rachel Hulatt, East Lancashire Hospitals NHS Trust, UK  
Kalaiyarasi Arjunan, East Lancashire Hospitals NHS Trust, UK  
Damien Lynch, East Lancashire Hospitals NHS Trust, UK

ABSTRACT:

**Background:** Neurophobia is a well-documented phenomenon reflecting how neurological education is viewed by undergraduates. Research has shown poor learner confidence in the subject which involves complex integration of many aspects of medical knowledge. There is a need to address this challenge to improve the quality of training in clinical neurology.

**Summary of Work:**  
**Aim:** Improve medical undergraduate confidence in achieving the learning objectives for clinical neurology in a MBBS curriculum.  
**Method:** 1. Subjects: UCLan MBBS students undertaking a hospital-based clinical neurology attachment. 2. Intervention: 2-week blended neurology teaching programme [4 contact days] comprising a range of educational techniques designed and delivered by JCF in Medical Education. Multiple PDSA cycles were performed to develop the programme in response to student feedback. 3. Analysis: Students completed pre- and post-programme questionnaires to rank their confidence [out of 10] across the areas of neurological teaching mapped to their learning outcomes. Unpaired T-test was applied.

**Summary of Results:** 20 Students from 4 blocks of the teaching programme took part. Following the first cycle, understanding of neurological conditions and signs remained the lowest scoring domain post-teaching so sessions were adapted. Student confidence improved in all domains evidenced by p values all <0.05. The largest improvement was in upper limb examination with an average increase in confidence by 27%. 94% of students thought the learning was appropriate to their level and relevant. Free text answers revealed positive attitudes and enthusiasm being fostered by the programme: I LOVED the teaching! I learnt so much and feel really confident walking away.

**Discussion and Conclusions:** The use of a JCF led blended teaching programme enabled neurophobia to be overcome. Students felt more confident and empowered to approach neurology learning. This approach could be applied to other difficult areas of training in undergraduate clinical practice.

**Take-home Messages:** Understanding the fear and difficulties undergraduates have regarding neurological teaching means we can overcome neurophobia as educators. By creating a streamlined and varied teaching programme with constant quality improvement from regular feedback has enabled us to maintain a high level of teaching in this complex subject.
#EP9: ePoster - Curriculum Subjects

#EP9.12 How could sustainability be effectively integrated into medical education? (9172)

Date of Session: 30 August 2021  
Time of Session: 18:00 to 19:30

AUTHOR(S):  
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Tobias Boerboom, Amsterdam UMC, The Netherlands  
Jan Hindrik Ravesloot, Amsterdam UMC, The Netherlands  
Jeanine Suurmond, Amsterdam UMC, The Netherlands

ABSTRACT:

Background: Ecosystems affect all social determinants of health. Changes in ecosystems lead to health disparities and poor health conditions (LaVeist & Pierre, 2014). Students need a different set of skills to be prepared for or even avoid these changes. To work towards a more sustainable future, it is important that all medical students learn about sustainability and climate change. This has potential benefits for the healthcare system, patients and community, and the environment. The aim of our study is therefore to explore how sustainability could be effectively integrated into medical education.

Summary of Work: In order to investigate the factors that promote the effective integration of sustainability into a medical education, a narrative review was conducted. Amongst other databases, the databases PubMed and Web of Science were consulted and grey literature was used. Only studies that investigated sustainability in medical education were included.

Summary of Results: The first step to effectively integrate sustainability into medical education is to formulate a concrete vision on sustainability. What should a student know and be able to do, with regard to sustainability, after graduation? Secondly, exchange of knowledge, experiences, and learning materials within and between institutions enhances the effective implementation of sustainability within medical education. Plenty of resources about sustainability are online available for free, such as documentaries, toolkits, and MOOCs. Thirdly, students should be educated on the basics of sustainability, for example how the environment and human health interact and skills needed to improve the sustainability of health systems.

Discussion and Conclusions: Several factors that enhance the effective integration of sustainability within medical education can be distinguished within the design, implementation, and evaluation of education on sustainability. These factors can be used to integrate sustainability more effectively into the medical curriculum.

Take-home Messages: If medical schools would like to integrate sustainability effectively into their curriculum, they should first formulate a concrete vision on sustainability and then implement sustainability gradually into their curriculum while taking the distinguished factors into account. This way, we can reduce health disparities and enhance health conditions.
#SC41: SC - Teaching & Learning Principles

#SC41.1 Content curation as a tool for teaching and learning in medical high education (8391)

Date of Presentation: 30 August 2021
Time of Presentation: 18:00 to 18:15

AUTHOR(S):
Gilbert Faure, Université Lorraine, France*

ABSTRACT:

Background: Amount of information, through scientific published papers and social media networks is more and more overwhelming. Collective knowledge is polluted by fake news and can have public health consequences. In high education, teachers have to help students and trainees managing information, which is mandatory for research-based professions in universities and medical schools, and for life-long learning of MDs. Content curation tools are available and could help teachers and students.

Summary of Work: Based on the use of one of those tools, Scoop.it, we evaluated potentials of curation in clinical research teaching and learning for Immunology and related disciplines. Snippets of information can be collected, gathered and selected from publication databases and social networks. They are editorialized and elevated by the curators, teachers and learners with tags, personal comments and attractive imaging features. As individuals and/or in groups of interest, curators build open searchable personal or collective content hubs and enrich them to share with their communities of interest.

Summary of Results: Topics and subtopics (mucosal immunity, immunology and biotherapies, flow cytometry, autoimmunity, allergyâ€¦) maintained by teachers and networkers regularly offer to students, colleagues and readers a selection of relevant material. Trainees as active learners discover information relevant to topics of interest and can be evaluated for discovery, selection, commentsâ€¦

Discussion and Conclusions: Using content curation, teachers offer students their expertise for selection of relevant material. Researchers interact with colleagues, become thought leaders and may find serendipitously new research subjects. Professionals can pursue personalized CME/CPD and life-long learning. Using content curation, students learn to read and write in a high education and research environment. They build their own portfolio of learning materials and improve their digital and information literacy. Usage of content curation tools offers the opportunity to develop and manage knowledge content hubs relevant for information literacy of teachers, learners and trainees. Compared to algorithms, content curation adds human specialist competencies for knowledge management.

Take-home Messages: To surf the wave of information overload, content curation is a method widely available. It can help medical teachers and researchers staying abreast of medical information and science. It will allow trainees becoming digital and information literate for their life-long learning.
# SC41: SC - Teaching & Learning Principles

## SC41.2 Evaluating the learning output and educational process of a diabetes course targeted at mental health professionals in Danish psychiatric out-patient clinics (8385)

Date of Presentation: 30 August 2021  
Time of Presentation: 18:15 to 18:30

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** Individuals with severe mental illness have a life expectancy 15-20 years shorter than the general population partly due to somatic diseases including diabetes. Mental Health Professionals (MHPs) play a crucial role in physical health screening and treatment of individuals with severe mental illness.

**Summary of Work:** We developed and evaluated the learning output and educational process of a 3-day face-to-face course on diabetes care. The course was developed based on a need assessment among MHPs. Learning output and MHPs knowledge and skills were measured in a pre- and posttest with a 20-item multiple choice questionnaire. The educational process was also evaluated based on a 20-item questionnaire on course content, educators and educational strategies.

**Summary of Results:** The course was tailored to MHPs; e.g. by including realistic cases to support participant motivation and effective learning processes. A total of 66 MHPs from four psychiatric out-patient clinics in Denmark completed the course in 2019. Data from the pre- and posttest was analysed with a paired sample t-test. The MHPs (n=64) had a statistically significant higher score (p<0.001) in the post-test (mean= 15.5 points) compared to the pre-test (mean= 9.3 points). The questionnaire results showed that participants had a positive experience of the educational process. Particularly, course instructors and instructional methods were rated highly.

**Discussion and Conclusions:** Both the MHPs positive experience of the educational process and improved knowledge and skill scores may be due to the tailored educational content in this course. Our study is a steppingstone in understanding what works in the educational setting by investigating the educational process of the course. Further studies are needed in this area and on the transfer of knowledge from somatic health care interventions to clinical psychiatric practice.

**Take-home Messages:** The tailored course increased MHPs knowledge and skills on diabetes care and MHPs had a positive experience of the educational process.
**#SC41: SC - Teaching & Learning Principles**

**#SC41.3 An Online Course Utilizing Spaced Repetition Technology to Optimize UC Provider Antimicrobial Use for Pediatric Upper Respiratory Infections (8607)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:30 to 18:45

**AUTHOR(S):**  
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Terry Yen, Texas Childrens Hospital, USA  
Debra Palazzi, Baylor College of Medicine, USA  
Luis Ostrosky, University of Texas-Houston, USA  
Satid Thammasitboon, Baylor College of Medicine, USA  
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**ABSTRACT:**

**Background:** Pediatric upper respiratory tract infections (URIs) are the most common diagnoses seen in Urgent Care (UC) centers. UC providers often over prescribe antibiotics for pediatric URIs. Barriers to UC provider appropriate antibiotic use include, a lack of: antibiotic knowledge, time with patients/for community medical education (CME) activities, patient continuity/follow-up, and understanding of parent expectations. Online CME courses can improve UC provider antibiotic knowledge and provider-parent communication.

**Summary of Work:** A voluntary asynchronous online course was developed. Course goals included: to overcome UC provider barriers to accessing effective CME antimicrobial stewardship (ASP) activities and to improve UC provider: antimicrobial use for treatment of: rhinosinusitis, acute otitis media (AOM) and pharyngitis and communication with parents. Content included: updated guidelines/practice recommendations, clinical algorithms and interactive cases. Knowledge assessments included: pre-tests and spaced post-tests, competency evaluations, and spaced repetition questions. UC providers reflected on content to enhance provider-parent communication. CME credit was awarded for participation. Phone-surveys evaluated the course.

**Summary of Results:** Fifty-two (63/122) percent of eligible UC providers enrolled; 56% (35/63) completed the course; 34/35 (97%) completed a post-test. An ANOVA revealed significant improvement in knowledge at course completion and >6 months later (pre-test: 65%, post-test: 97%, post-post test (92%), p <0.0001). McNemars test revealed improvement in knowledge in the management of pediatric sinusitis (p =0.0005), AOM (p <0.0001) and pharyngitis (<0.001). Among participants, 17/24 (71%) agreed the course improved their knowledge, 24/24 (100%) agreed it enhanced their antibiotic decisions and communication with parents. Both participants and non-participants, 39/40 (98%), made suggestions to improve the course and requested additional learning material.

**Discussion and Conclusions:** A voluntary, asynchronous, online course overcame UC provider knowledge and parent expectation barriers for antibiotic usefulness in the treatment of pediatric URIs. Spaced repetition technology was used to promote long-term retention of UC knowledge. Online education for UC providers, utilizing spaced repetition technology, can be used to: improve UC knowledge, antibiotic use and provider-parent communication.

**Take-home Messages:** UC providers participated in an online platform to improve use of antibiotics for pediatric URIs. The asynchronous online platform was favorable and effective. Spaced repetition technology improved UC provider long term knowledge retention. The modules enhanced UC provider-parent communication.
#SC41: SC - Teaching & Learning Principles

**#SC41.4** A randomised controlled trial to examine the efficacy of Blank Slate: A novel spaced retrieval tool with real-time learning analytics (8145)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:45 to 19:00

**AUTHOR(S):**  
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Jeff McIlvonna, Pace University, USA  
Matt Trevithick, Yale University, USA

**ABSTRACT:**  
**Background:** Learner-centered coaching and helpful feedback are educational strategies relevant to various health education contexts. Spaced retrieval enhances long-term retention and knowledge application. Our research objective was to examine the efficacy of Blank Slate, a novel spaced retrieval app, to 1) offset the normal human forgetting curve, 2) unobtrusively monitor learner progress; and 3) create a detailed data record, computationally analyzed to display helpful feedback on individual learner performance.

**Summary of Work:** 93 students from 6 universities in the U.S. were assigned randomly to control (n=19), sequential (n=37) or algorithm (n=37) conditions. Participants watched a teaching video on the Republic of Georgia before taking a 60 multiple-choice-question quiz. Georgia was chosen to minimize prior knowledge as a confounder. Sequential (non-spaced retrieval) and algorithm (spaced retrieval) groups were given access to Blank Slate and 60 digital information cards. Algorithm participants reviewed a subset of cards daily based on previous individual performance. Sequential participants reviewed all 60 cards daily. 4 weeks later, all 93 participants answered the quiz again.

**Summary of Results:** Mean (± SD) before scores were not significantly different among the groups: 39.7 (± 6.6), 42.0 (± 7.4), and 43.2 (± 7.7) out of 60 for control, sequential, and algorithm (p>0.05; ANOVA). Mean after scores were: 34.1 (± 4.9), 59.2 (± 1.3), and 57.4 (± 2.3), respectively. Mean deltas were: -6.5 (± 3.7), 17.5 (± 6.7), and 13.7 (± 7.6), respectively. Sequential and algorithm groups were significantly different from control group (p<0.05; ANOVA) but not from each other with regard to after and delta scores (p>0.05; ANOVA). Mean total time reviewing cards was: 96.1 (± 45.6) minutes (sequential) and 32.7 (± 10.7) minutes (algorithm); a significant reduction of ~ 66% (p<0.05; t-test). Learning analytics indicated who knew what and by when, and where each participant was succeeding or struggling.

**Discussion and Conclusions:** Blank Slate prevented anticipated forgetting; authentic learning improvement and retention happened instead, with spaced retrieval incurring one third of the time investment.

**Take-home Messages:** Blank Slates embedded analytics allowed for real-time monitoring of learning progress that could form the basis of helpful feedback to learners for self-regulation and educators for coaching.
Active learning in large-scale education: How is it realized by teachers of a Bachelor of Medicine? (8744)

Date of Presentation: 30 August 2021
Time of Presentation: 19:00 to 19:15

AUTHOR(S):
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ABSTRACT:
Background: Active learning can, even in large-scale education, maximize learning outcomes. Active learning is realized when students are involved in the learning activity, the context is clear and students reflect on their learning. Aim of our study was to investigate whether active learning is realized in the bachelor of Medicine at the University of Amsterdam.

Summary of Work: The Active Learning Inventory Tool (ALIT) was used to observe (live and via recordings) 58 large-scale teaching moments (lectures, tutorials and Team Based Learning (TBL) -application sessions). With this tool the number of questions asked by the teacher were charted, as well as the duration and type of active learning methods. To get insight in the perceptions of teachers, they were interviewed individually (N=4) and as part of focus groups (N=19).

Summary of Results: Almost 56 hours of large-scale education was observed whereof on average 12% of the time consisted of active learning. Active learning was most frequently used in TBL-sessions namely 64% of the time; in tutorials and lectures this was respectively 20% and 3% of the time. Teachers used seven different activating methods, voting was the preferred activating method. Teachers believe that active learning is important to involve students and to learn from peers. They indicate that they use active learning frequently in their class. Although they find it difficult to apply in large-scale education due to the size of the class and the unfamiliarity with methods.

Discussion and Conclusions: • On average 12% of the observed contact hours consists of active learning. Generally, students passively listen rather than being actively engaged, with the exception of TBL.
• Teachers believe that active learning is important because it stimulates the critical thinking of students and indicate that they use active learning in large scale education. However they find it difficult to implement active learning in largescale education.

Take-home Messages: To improve student engagement explicit attention should be paid, in teacher professionalization activities, how activating teaching methods can be used in large-scale education.
#SC41: SC - Teaching & Learning Principles

#SC41.6 A conceptual framework on lifelong learning skills (9750)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 19:15 to 19:30

**AUTHOR(S):**  
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**ABSTRACT:**  
**Background:** The Association of American Medical Colleges (AAMC) competency of Practice Based Learning and Improvement emphasizes the importance of self-regulation and lifelong learning skills in practicing physicians. These skills are typically taught in medical schools through academic success programs. Our university provides such programs that are both proactive (development oriented or deficit based) and reactive (deficit based) to support our student academic success. In order to provide structure and consistent messaging across our programs, we needed a conceptual framework that not only is grounded in theory but also memorable and practical.  

**Summary of Work:** We used the principles of self-regulated learning as a baseline for our framework. Our goal was to highlight the metacognitive strategies before, during and after a learning event. We also incorporated additional lifelong learning skills such as time management into the framework to emphasize the significance of planning and goal setting. Additionally, we incorporated test taking strategies into the framework due its impact on their performance. Lastly, we included mind and body wellness to emphasize burnout prevention. These themes emerged from years of academic coaching conversations with varied groups of pre-medical students.  

**Summary of Results:** We developed the 7Ps framework with seven discreet components. They include Plan (time management), Prepare (organizing before a learning event), Participate (assimilating new information during a learning event), Process (managing information during and after a learning event), Practice (assessing learning), Performance (test taking strategies) and Pause (mind and body wellness).  

**Discussion and Conclusions:** The 7Ps framework has provided structure to our academic support activities. It provides scaffolding while teaching metacognitive skills in academic success courses and workshops. Students use the framework to set learning goals and develop academic action plans. We use feedback from the inventory to direct academic coaching conversations.  

**Take-home Messages:** The framework has helped us create a shared understanding of effective study strategies with our students and has streamlined our efforts to enhance student academic success even in a virtual environment.
#SC42: SC - Education Management - International

#SC42.1 An AMEE Consensus Statement on Planetary Health and Education for Sustainable Healthcare (8468)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:00 to 18:15

**AUTHOR(S):**  
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**ABSTRACT:**

**Background:** Health professionals have a key role to play in addressing the existential crisis facing humanity. Through human actions, ecosystems are being destroyed and the climate is changing. Health professional bodies have recognised the threat this poses to our continued existence and that health care delivery contributes significantly to greenhouse gas emissions, natural resource use and waste generation. There is an urgent need for the health care professions to prepare the current and future healthcare workforce to respond. During the planning of the Education for Sustainable Healthcare theme at the 2020 AMEE Conference, the need for a Consensus Statement (CS) on Planetary Health and Education for Sustainable Healthcare (ESH) was acknowledged.

**Summary of Work:** A multidisciplinary team of geographically representative health professional educators and students was invited to develop the CS. Over 12 months, three lead authors coordinated several iterations with input from all contributors. Two rounds of review involving three independent experts followed.

**Summary of Results:** The CS provides:  
• Learning outcomes and objectives (knowledge, skills, mindset, values, agency), with suggested educational strategies and assessment approaches  
• Recommendations for faculty development, including eco-ethical leadership  
• A focus on equity, inclusivity (e.g. Indigenous traditional knowledge) and human rights  
• A list of resources including curriculum competency frameworks, e.g. 2030 Sustainable Development Goals and planetary health projects  
• A glossary  
• A proposed road map (timeline) for ESH implementation at various levels  
• A discussion on the development of indicators to measure implementation.

**Discussion and Conclusions:** The CS offers a practical guide for health professional educators and institutions to take urgent action to develop a workforce that can promote planetary health, acting as eco-ethical leaders and reducing healthcare’s ecological footprint. It represents the collective vision of health professionals, educators and students from various health professions, geographic locations and cultures.

**Take-home Messages:** In the light of the ecological crisis, its impacts on health and well-being and the potential to reduce negative environmental impacts of healthcare, training of the future workforce and upskilling the current workforce to deliver sustainable health care is imperative. This CS will assist health professional educators to integrate planetary health and sustainable health care into their curricula.
#SC42: SC - Education Management - International

#SC42.2 Evaluating to maximise clinical placement effectiveness across language and cultural boundaries. The EMANCIPATE consortium (9182)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:15 to 18:30

**AUTHOR(S):**  
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Deirdre Bennett, University College Cork, Ireland  
Tim Dornan, Queens University Belfast, UK

**ABSTRACT:**  
**Background:** Various instruments are used to evaluate the quality of clinical placements, including the mixed-methods Manchester Clinical Placement Index (MCPI) for which strong validity evidence exists in the UK. Published research has concentrated primarily on the reliability and/or generalisability of instruments. Evaluation, however, is only of value in so far as it helps enhance students learning environments; there is a dearth of evidence about this (the consequential validity of instruments). The dual aims of the EMANCIPATE consortium are to: 1) explore the potential utility of MCPI in a wider range of sociocultural contexts; 2) to close the loop between evaluating learning environments and enhancing students education.

**Summary of Work:** University College Cork (Ireland) and Stellenbosch University (South Africa) have used MCPI in the original English language version. Semmelweis University (Hungary) and Atma Jaya Catholic University (Indonesia) have translated MCPI into Hungarian and Bahasa Indonesia respectively and confirmed the fidelity of back-translated versions. We performed confirmatory factor analysis on responses from 3602 students in the four sites. We are developing an analytical framework, which allows free text responses to be first analysed in the local language and then aggregated at consortium level.

**Summary of Results:** A comparative fit index (CFI) ≥ .95 across the dataset as a whole and in each of the evaluation contexts confirms the two-factor structure of MCPI. A pilot evaluation of the qualitative analytic framework has provided evidence of sufficiency from just 40 responses.

**Discussion and Conclusions:** These findings extend earlier evidence that MCPI, an 8-item mixed quantitative and qualitative instrument, is a parsimonious and informative evaluation instrument by showing that it is reliable across implementation contexts and languages.

**Take-home Messages:** This research supports the value of MCPI, not just for the evaluation of learning environments, but for cross-cultural collaboration in improving students learning experiences.
#SC42: SC - Education Management - International

#SC42.3 Enablers and barriers in developing an online adaptive international progress test with a transnational consortium (OAIPT) (9542)

Date of Presentation: 30 August 2021
Time of Presentation: 18:30 to 18:45

AUTHOR(S):
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EBMA Erasmus+ Project Team, EBMA, The Netherlands

ABSTRACT:
Background: There is an increasing requirement to assure the quality of medical training across borders to maintain excellence in patient care. Autonomous administration of many medical schools means that there is substantial variability in assessment systems. Whilst the task of assuring the quality of medical training programmes between European countries is complex, progress testing of applied medical knowledge has been shown to be feasible for international comparisons. Computerised adaptive testing enables assessments to be personalised to the learner, matching difficulty of items in a test to attainment levels of each student. Implementing progress testing requires significant resources and collaborating with international partners allows achieving this goal. Here we analyse the enablers and barriers in developing an online adaptive international progress test (OAIPT).

Summary of Work: As part of a three-year ERASMUS+ funded project involving eight partner institutions in Europe, over 2000 new items were generated. Pilot test administrations were implemented in English language utilising anchor items for test equating. Qualitative and quantitative analyses of the test administrations were completed.

Summary of Results: 1424 items were available for test administration. 327 students were recruited for the first calibration test. 29 nationalities were included in the sample. 99 participants declared English as their first language. The distribution of item difficulty parameters was able to cover the entire distribution of the latent test scores of the participants from this phase of the study. Unidimensionality and local independence assumptions were met. Measures of item fit were optimal with infit and outfit measures within the range between 0.8 and 1.2. SEM for item parameters were small. Challenges with test implementation included cultural differences affecting student interpretation of items.

Discussion and Conclusions: Developing high quality items for adaptive testing is demanding but advanced psychometric analysis such as Rasch modelling is effective in identifying items which would work well and directing efforts towards those that are flawed. From the students perspective there was high level of acceptance and understanding of the potential impact on the learning. The different cultural backgrounds did not show an impact on the psychometric proprieties of items. Being a native speaker showed an advantage.

Take-home Messages: Cultural variation can affect student interpretation of items.
ABSTRACT:

Background: Problem-based learning (PBL) is ever-present in medical education worldwide. In many countries, accreditation agencies set PBL as a required or recommended attribute of medical curricula to address needs for transforming medical education. Simultaneously, PBLs spread is criticized as a neo-colonial movement of educational approaches, based on the assumption that the flow of expertise and materials often runs from West to East and from North to South. However, both the favorable and the critical perspective on PBLs globalization may overlook alternative perspectives on how we might frame PBL around the world.

Summary of Work: Using a critical narrative review approach, involving a targeted literature search, we analyzed the dominant discourses currently framing the PBL literature to explore what is missed when the globalization of PBL is theorized either as a positive consequence of the standardization of health professions education, or as a problematic spread of Western educational values. We also identified papers that reflected marginal perspectives related to the spread of PBL.

Summary of Results: We identified two dominant global discourses, a universalist and culturalist discourse, that have emerged in the global proliferation of PBL. The first describes that PBL can and should be implemented everywhere in more or less similar ways. It trumpets PBL's superiority over other approaches and argues that students and staff across contexts need to adapt to the approach. The second describes that PBL reflects the cultural values of its original Western context, and therefore should be adapted when implemented in other contexts.

Discussion and Conclusions: Both discourses are limited in considering contextual and cultural diversity: the universalist discourse ignores diversity; the culturalist views it as a problem to be overcome. Furthermore, the discourses neglect the global origins of PBL aspects, such as collaborative and student-centered learning, and instead maintain that PBL is a Western approach. Transcending these limitations, we propose to no longer define PBL as a Western concept, nor to imply the existence of a universal standard.

Take-home Messages: Globally, we need to frame PBL as a plural construct, to genuinely acknowledge and learn from the contextual nuances of PBL versions around the world.
#SC42: SC - Education Management - International

#SC42.5 Global Health Framework for International Medical Student Exchanges (9554)

Date of Presentation: 30 August 2021
Time of Presentation: 19:00 to 19:15

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ABSTRACT:
Background: The International Federation of Medical Students Associations (IFMSA) is a student-run organization that promotes medical student mobility through the Standing Committee on Professional Exchange (SCOPE). One of the main objectives of this program is to create awareness about Global Health Education (GHE). Every year, approximately 17,000 students have the opportunity to travel to other countries and immerse themselves in the health system and education of their host country. For this reason, SCOPE created a three year Global Health Framework in order to ensure the sustainability of GHE in our exchange programs.

Summary of Work: The Framework consists of the goals, indicators, and progress made. The general goal is to increase the accessibility of GHE resources to all exchange students. Since initiating the framework in 2019, manuals, workshops, and an e-learning platform have been created. In addition to promoting GHE resources, IFMSA also conducted a campaign on Universal Health Coverage.

Summary of Results: We created the Universal Health Coverage (UHC) Simulation Manual, which is a role play educational activity that has been conducted in two in-person international student meetings with more than 200 participants each. Furthermore, we recently adapted the activity for one online event. We have increased awareness about GHE and UHC through two online campaigns, reaching more than 170,000 members. On average, we have dedicated four hours to explore global health topics during each of the IFMSA seven annual meetings. Finally, as an effort to increase accessibility for all students, we will be launching a GHE e-learning course this year and publishing a centralized health systems database with information from over 50 countries to be used as a valuable information resource during Pre Departure & Upon Arrival trainings in our program.

Discussion and Conclusions: With the GHE Framework for our exchanges program, more students have begun to unanimously work towards GHE issues. By creating awareness and materials for them to use, we have been able to expand knowledge on Global Health and shape more conscientious medical students worldwide.

Take-home Messages: With the help of a framework, medical student exchanges are an effective way to systematically expand knowledge about Global Health and change their vision towards a globalized future.
#SC42.6  Cultural influence on medical students’ perspectives on assessment in clinical placement in Japan and the UK (8778)

Date of Presentation: 30 August 2021
Time of Presentation: 19:15 to 19:30

AUTHOR(S):
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ABSTRACT:
Background: Understanding of cultural influences in assessments of clinical year medical students is necessary for an increasingly diverse educational environment. Based on constructivism, it could be considered the interpretation of feedback students form in clinical placement is influenced by their previous experience within the socio-cultural group they occupy. We analysed the students experiential reality and perception of assessment and feedback in a clinical placement in a different cultural environment, Japan and the UK. From comparing the extracted themes, we theorized how the socio-cultural factors influenced students experiences of assessments.

Summary of Work: This study has a qualitative study design. We interviewed medical students in Japan and the UK in their clinical years. Participants were recruited in Japan and the UK using the convenience method and snowballing technique. The interview focused on low stakes formative assessment. The primary pilot interviews were conducted and the data was discussed to construct the interview guide for second interviews. Secondary semi-structured interviews were conducted online. The audio was recorded and transcribed. Data were analysed based on grounded theory. 3 interview data from each country was coded to establish the analysis procedure. Then, the remaining data was coded. A team meeting was regularly held to review the analysed data and finalise the codes. The sharing and critical discussion were conducted to achieve investigator triangulation.

Summary of Results: Ten medical students and eleven medical students were interviewed in Japan and the UK respectively. While Japanese students viewed the assessment and feedback process as the correction of their performance, UK students viewed the process as a reflection on their internal values and clinical focus offered by clinical teachers.

Discussion and Conclusions: Differences between Japanese and UK students could reflect the influence of cultural values in each country. It could be due to the educational philosophies traditionally employed in the countrys educational system. Socio-cultural values influenced how students interpreted the feedback. This finding implies how clinical education should be applied to match the cohort in different countries.

Take-home Messages: The cultural difference between the Western and non-Western countries was shown to influence the learning context in higher education and the dynamics between students and assessments.
#SC43: SC - Simulation

#SC43.1 Preparing for On-Calls: Democratising Simulation in Undergraduate Medical Education (8925)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:00 to 18:15

**AUTHOR(S):**  
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Yuri Aung (Co-Presenter), Imperial College London, UK*  
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**ABSTRACT:**  
**Background:** Newly qualified doctors are expected to manage acutely unwell patients independently while on-call. Many feel unprepared for this, reporting high levels of stress. Simulation holds promise for improving preparedness. However, aspects of traditional simulation limit its effectiveness. Simulation typically occurs in expensive specialist suites with limited timeslots, this restricts access. It usually focuses on a single clinical encounter (e.g. anaphylaxis) which poorly reflects continuity of on-call work, this limits scope. We use Sequential Simulation (SqS), the longitudinal representation of different stages in patient care, and Distributed Simulation (DS), the use of portable low-cost medium-fidelity equipment, to recreate clinical environments in regular classrooms. This feasibility study explores the potential of SqS and DS to create affordable simulated on-calls reflective of clinical realities.

**Summary of Work:** 39 fourth-year medical students participated in a 90-minute simulated on-call. Students completed emergency or surgical on-call scenarios in groups of three. Each student was responsible for a different stage of patient care. These stages included initial assessment, results interpretation and consulting a senior, and management plan implementation. All sessions included a group debrief. Participants completed a mixed-methods questionnaire. Reflexive thematic analysis of qualitative data addressed the following questions. Does this novel simulated environment support the practice of relevant on-call skills? What factors facilitate this learning?

**Summary of Results:** Nine participants completed the questionnaire, 89% rated the on-call simulation as an excellent learning experience and 11% rated it as good. The following themes were identified: (1) integration of multiple skills to deliver care from beginning to end, (2) situated practice of complex clinical communication, and (3) interdisciplinary collaboration. The following characteristics of the simulation were identified as facilitating this: (1) continuity represented through SqS, (2) clinical realism and immersion, and (3) working under pressure.

**Discussion and Conclusions:** This study demonstrates that it is feasible to create affordable, immersive simulated on-calls reflective of clinical realities. It highlights the potential of SqS and DS to democratise simulation learning. We recommend more extensive investigation of the impact of SqS/DS based simulated on-calls on preparedness for practice.

**Take-home Messages:** SqS and DS offer a feasible alternative to traditional high-fidelity simulation which could democratise simulation and increase its use in undergraduate medical education.
#SC43: SC - Simulation

#SC43.2 The (Future) Doctor Will See You Now: Piloting a longitudinal virtual patient in medical education, simulating general practice (8306)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:15 to 18:30

**AUTHOR(S):**  
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Catherine Fenn, University of Warwick, UK  
Helen Gabathuler, University of Warwick, UK  
Sue Davies, University of Warwick, UK

**ABSTRACT:**  
**Background:** Simulated patients are an integral resource in medical education. Limited by availability, cost, diversity and variance in educational quality, simulated patients still provide students opportunity to develop competencies in a controlled learning environment. Virtual simulated patients additionally provide learning opportunities for medical students, without as many limitations as in-person simulated patients. However, literature surrounding virtual patients only evaluate one-off virtual patient interactions. To emulate general practice, allowing multiple encounters with a single patient, a new longitudinal virtual patient (LVP) was developed.

**Summary of Work:** The LVP was integrated as an optional component into 2nd year at a graduate-entry medical school, in the 2019/2020 academic year. The LVP was designed using Posels guidance on storyboarding and quality assured with clinician, academic and student input. Episodes were structured following the Calgary-Cambridge consultation model, and questioned students clinical reasoning with model answer guides, linking to curricula or reliable external resources. Students were asked about their prior experience and expectations of LVPs, before they engaged with two consultations and one results session. Data were collected from this survey and from the engagement with the LVP. Feedback was collected and thematically grouped.

**Summary of Results:** Survey responses indicated that 1.7% (2/120) had previous experience with virtual patients, and the majority expected the LVP to make a difference to their clinical reasoning. Out of the 142 students engaged with the LVP, 53% completed over 75% of the work. Informal feedback arose around accessibility, professional learning and development, and engagement with the LVP module.

**Discussion and Conclusions:** The data indicate that LVPs are agreeable to medical students, with good engagement and positive reports of clinical learning. Future work exploring reasons of engagement or lack of, will support refinement of the LVP to accommodate the learning needs of the medical students. An understanding of the impact the LVP has as a learning resource, matched to Kirkpatrick levels, will provide key insight into the true impact of LVPs.

**Take-home Messages:** LVPs may provide continually valuable, diverse, modifiable, high-quality clinical education, which can be mapped to curricula blueprints. Students find LVPs engaging and beneficial to clinical reasoning.
#SC43: SC - Simulation

#SC43.3 Guide, Intermediator, Facilitator, and Teacher (GIFT): Approaches to simulation debriefing (9790)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:30 to 18:45

**AUTHOR(S):**  
Amanda Roze des Ordons, Cumming School of Medicine, University of Calgary, Canada*  
Walter Eppich, Centre for Simulation Education and Research, Royal College of Surgeons of Ireland, Ireland  
Jocelyn Lockyer, University of Calgary, Canada  
Ryan Wilkie, University of Calgary, Canada  
Vincent Grant, University of Calgary, Canada  
Adam Cheng, University of Calgary, Canada

**ABSTRACT:**  
**Background:** Debriefing has been identified as essential for learning in simulation. Current approaches are guided by general guidelines and frameworks grounded in expert opinion and fields outside of medical education. Debriefers may benefit from having specific guidance on how to approach challenges that arise in the course of debriefing.

**Summary of Work:** The purpose of this study was to describe how debriefers approach challenges in post-simulation debriefing. Simulation educators with background in nursing (n=6) and medicine (n=5) participated in three simulated debriefings involving learners who were engaged, in conflict, and in distress, respectively. Participants were interviewed prior to and after the simulations to explore their planned and actual approaches to debriefing. All data were audio-recorded and transcribed and a constructivist approach was applied for qualitative analysis.

**Summary of Results:** The findings highlighted four debriefer roles: Guide, (Inter)mediator, Facilitator, and Teacher. There were specific goals associated with each role, as well as strategies that debriefers adopted within each role. Each role was associated with specific goals as well as actions that were adopted to achieve these goals. A common goal across all roles involved maintaining psychological safety.

**Discussion and Conclusions:** Previous debriefing models have focused on facilitation approaches to debriefing. Grounded in the actual practice of experienced debriefers, this work describes the multiple roles that debriefers perform and strategies within these roles that can help achieve the goals of debriefing within the challenges debriefers encounter. The GIFT framework may be useful to inform future debriefer education and mentoring programs.

**Take-home Messages:** The Guide, (Inter)mediator, Facilitator and Teacher framework provides debriefers with a general approach and specific strategies for approaching the challenges encountered in debriefing.
#SC43: SC - Simulation

#SC43.4 Assessing the impact of immersive simulation in undergraduate psychiatry training (9215)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:45 to 19:00

**AUTHOR(S):**  
Kenneth Ruddock, NHS Lanarkshire, UK*  
Kim Herbert, NHS Lanarkshire, UK  
Catriona Neil, NHS Lanarkshire, UK  
Karli Dempsey, NHS Lanarkshire, UK  
Neera Gajree, NHS Lanarkshire, UK

**ABSTRACT:**

**Background:** Over the last decade, there have been significant developments in the use of simulation for undergraduate medical education. Despite its diverse applications across the medical school curriculum, simulation has thus far been underutilised within psychiatry teaching. Simulation provides students with a safe, controlled environment to develop knowledge, skills and attitudes. Psychiatric simulation supports students to develop strategies to elicit psychopathology, de-escalate situations or perform a risk assessment. Such experiences can be difficult to encounter during clinical placements and may expose a student or patient to an unacceptable level of risk. We have developed a simulation course which aims to provide training in a safe learning environment.

**Summary of Work:** Our one-day course is delivered to groups of 6-8 medical students from the Universities of Glasgow and Edinburgh during their placements in NHS Lanarkshire, in a dedicated simulation suite. A bank of clinical scenarios have been written which are mapped to the universities intended learning outcomes; these include conducting a suicide risk assessment and managing a manic patient. A course handbook includes patient scripts and debrief guidelines. Students each take the lead role during a clinical scenario in which they will encounter a simulated patient. Live video is broadcast to other candidates, with playback utilised for debrief purposes. Each scenario lasts 10 minutes with a 20 minute group debrief immediately afterwards, facilitated by psychiatrists and medical education faculty. Evaluation data is obtained in the form of an anonymous post-course questionnaire.

**Summary of Results:** To date, the course has received universally positive feedback. Students report it has improved their confidence in approaching acute psychiatric presentations, as well as supporting their learning of key psychiatric diagnoses and relevant psychopathology. Detailed qualitative and quantitative feedback has been collected for presentation.

**Discussion and Conclusions:** The course complements the students existing educational programme of didactic lectures and ward-based teaching. It provides the opportunity to develop interview techniques and communication skills, whilst managing psychiatric emergencies in a safe, controlled environment.

**Take-home Messages:** Immersive simulation is an underutilised tool in psychiatry education. Our course highlights that it can be used effectively to build student confidence and support them in achieving their intended learning outcomes.
#SC43: SC - Simulation

#SC43.5 Promoting professional socialization of medical students in emergency medicine clerkship rotation through pre-course high-fidelity simulation - a qualitative approach (9315)

Date of Presentation: 30 August 2021
Time of Presentation: 19:00 to 19:15

AUTHOR(S):
Yu-Che Chang, Chang Gung Memorial Hospital and Chang Gung University College of Medicine; CG-MERC, Taiwan*
Chung-Hsien Chaou, Chang Gung Memorial Hospital and Chang Gung University College of Medicine; CG-MERC, Taiwan
Nothando S. Nkambule, Chang Gung Memorial Hospital and Chang Gung University College of Medicine; CG-MERC, Taiwan
Roy Y. L. Ngerng, Risk Society and Policy Research Center, National Taiwan University, Taiwan

ABSTRACT:

Background: Medical students reported that their learning about comprehensive clinical skills in real workplace is below expectation, one of the reasons is limited exposure to real clinical settings. Hence these newcomers felt intense stress and also considered themselves as outsiders. The study aims to explore how medical students experience professional socialization in emergency community of practice and how pre-course simulation promotes their transition in clerkship.

Summary of Work: A total of 151 medical students participated in a pre-course simulation of being a leader in charge of a scenario in a simulated emergency context. Sixty-two sessions of focus group discussions and interviews were conducted following simulation participation immediately and at the end of EM workplace learning. As newcomers for EM clerkship, participants were asked about how they negotiate the tension related to their positioning and whether the simulation works for their transition.

Summary of Results: Three major themes were identified with illustrative quotes: (1) tension of positioning and professional identity formation in workplace, (2) challenging teaching and learning in EM work context and culture, and (3) effectiveness and limitations of the pre-course high-fidelity simulation. Procedural skills dominant training curriculum compromises medical students learning opportunity of autonomous practice and building confidence for patient care, while pre-course simulation helps them to image the ideal future self.

Discussion and Conclusions: Medical students have difficult experience of their clinical positioning and professional identity formation during EM clerkship rotation. Pre-course simulation has been the role as a turn-on switch for preparing medical students to understand EM model of care and also acts as a Mock or test to validate their thinking process when the legitimate peripheral participant has moved to the center of EM community practice. Medical students can practice leadership and teamwork to shorten theory-practice gap and complement the learning experience lacking in EM workplace.

Take-home Messages: Learning in a busy and potentially uncertain circumstance will not be optimized in nature. Implementing pre-course simulation activity can not only provide EM clerkship practice opportunities toward becoming a doctor but also complementary educational impacts to clinical practice. Clinical teachers can understand medial students negotiation of tension in their professional socialization process of EM clerkship and develop strategies accordingly.
#SC43: SC - Simulation

#SC43.6 The Challenges and Successes of Implementing In-Situ Paediatric Simulation

(9398)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 19:15 to 19:30

**AUTHOR(S):**  
Karen Geddes, NHS Forth Valley, UK*  
Andrea Thomson (co-presenter), NHS Forth Valley, UK*

**ABSTRACT:**  
**Background:** The provision of safe and effective paediatric learning opportunities for medical students has long been recognised as a challenge. The Simulation of Paediatric Life-Threatening Emergency Scenarios (SimPLES) course uses immersive simulation to address this; and demonstrated significantly improved student confidence in managing acute paediatric cases. Therefore it was adopted, with the addition of being in-situ, in the paediatric department of Forth Valley Royal Hospital. In-situ simulation improves fidelity and offers exciting opportunities for multi-disciplinary learning. We explore the challenges and successes of implementing an in-situ simulation programme into a clinical department.  

**Summary of Work:** Challenges in setting up this program have included finding available clinical space, acceptance amongst departmental staff, planning for longevity, and training faculty. Work has been undertaken to build flexibility into the programme and nurture relationships with departmental staff. This included encouraging the senior nurse to end the simulation, at any point, if they felt it was impacting patient care and including the advanced nurse practitioner as a subject expert in the debrief. A pilot session with 3 students gathered pre and post-course questionnaires. Departmental staff were also asked to provide feedback. Programme delivery and evaluation is ongoing.  

**Summary of Results:** Analysis of pre and post-course student questionnaires have shown improved confidence in the majority of skill areas. Students also reported that the learning experience in-situ was better than prior experience in a simulation centre, commenting that it felt more realistic. All multi-disciplinary team members surveyed on the ward, at the time of the simulation, agreed that in-situ simulation: was an appropriate tool for education; did not impact negatively on patient care; and is something that they would be interested in taking part in.  

**Discussion and Conclusions:** Despite initial obstacles to in-situ simulation, piloting the SimPLES course yielded very positive feedback from students with acceptance from departmental staff. Results suggest that all team members would be interested in participating in interprofessional in-situ simulation, which is promising for a future departmental culture of using in-situ simulation as a team training tool.  

**Take-home Messages:** In-situ simulation is feasible in a busy paediatric department. Open communication and collaboration has been essential in building strong foundations for a robust in-situ programme.
#SC44: SC - Assessment - Feedback

#SC44.1 Structuring assessments to support preparation for future learning (8995)

Date of Presentation: 30 August 2021
Time of Presentation: 18:00 to 18:15

AUTHOR(S):
Naomi Steenhof, The Wilson Centre & University of Toronto, Canada*
Maria Mylopoulos, The Wilson Centre & University of Toronto, Canada
Nicole N. Woods, The Wilson Centre & University of Toronto, Canada

ABSTRACT:
Background: Preparation for future learning is understood to be a key capability of adaptive expertise. This experiment explored the extent to which we may use productive struggle to structure tests to support preparation for future learning within health professions education. We manipulated the sequencing of test-question difficulty during a learning through pretesting phase and measured conceptual knowledge development and performance on future learning assessments. In doing so, the study also expands on theories of testing to account for these measures, moving beyond backwards-facing assessment that emphasizes measures of retention and application.

Summary of Work: Year one and year two students (N=99) enrolled in the PharmD program at the University of Toronto were randomly assigned to one of three learning conditions: high-struggle, low-struggle, and a control condition. During the learning phase (comprised entirely of multiple-choice questions), participants answered a series of questions where the order was manipulated dependent on condition. Participants in the high-struggle condition had questions presented from most difficult to least difficult, participants in the low-struggle condition had questions presented to them from least difficult to most difficult, and participants in the control condition had a mixed difficulty order. Regardless of the chosen answer, each participant was given an in-depth explanation as to why each answer was correct or incorrect. Subsequently, all participants completed an initial assessment phase, a new learning phase, and a future learning assessment.

Summary of Results: For participants in year one, those in the high-struggle learning condition had a higher score on the future learning assessment than in the low-struggle and control condition. This pattern did not hold for participants in year two.

Discussion and Conclusions: This research demonstrates that not only can assessment function as a platform for learning, but we can leverage testing using theories of productive struggle to support the development of expertise. Furthermore, we discovered that the quality of the struggle experienced by the learner depends on the learners prior knowledge.

Take-home Messages: When educators utilize productive struggle methodologies in health professions education curriculum, attending to the students prior knowledge is of utmost importance if we are to reap the benefits of this form of instructional design.
#SC44: SC - Assessment - Feedback

#SC44.2 Enhancing Tele-Simulation during OSCE: Incorporating Feedback from Standardized Patients (8143)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:15 to 18:30

**AUTHOR(S):**  
Meghana Sudhir, Mohammed Bin Rashid University of Medicine and Health Sciences, UAE*

**ABSTRACT:**

**Background:** As COVID-19 impacted universities across the globe for over one year, the organization of OSCEs also demanded change. At our University, to maintain safety of everyone involved, the number of people in each station was reduced to 2. Only examiner and student inside the station and SPs in separate rooms doing Tele Simulation. Student and SPs met online through laptop rather than face to face interaction. The examiner made the scoring based on this interaction. As the pandemic continues, there is possibility that this approach may continue for some time, it is imminent to capture the feedback from the simulated patients so that we can explore ways to improve in future. **Objectives:** To gather feedback from standardized patients doing Tele Simulation in OSCEs To develop plans to improve Tele Simulation involving Standardized Patients based on the feedback gathered.

**Summary of Work:** 18 SPs took part in Foundations of Clinical Medicine OSCE. At the end of OSCE, a structured debriefing was conducted. Gibbs reflection model was used for debriefing. The information gathered from the debriefing gave immediate feedback after the OSCE. The Standardized patients also received an online questionnaire. Any further information which they missed in the debriefing was captured using that questionnaire.

**Summary of Results:** Some of the feedback were. The laptops provided had cameras at the left bottom corner. It was difficult to keep eye contact with the student as well as to look at the camera at the bottom. Need to have laptops with camera at the top center. The students also need to be briefed on how to position themselves for the tele OSCE and how to maintain eye contact during the interview. More feedback will be shared during the presentation.

**Discussion and Conclusions:** Based on the feedback, any further adaptations with regards to SP training and scenario playing during Tele OSCEs will be addressed.

**Take-home Messages:** • There are chances of unexpected technical glitches. Be prepared and adapt to best possible way of completing the Tele-OSCE. • Gather as much feedback as possible from everyone involved in Tele OSCE so that improvement or modification if necessary can be made.
#SC44: SC - Assessment - Feedback

#SC44.3 Medical Students’ Credibility Judgements of Patients as Feedback Providers in Project-Based Learning (9236)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:30 to 18:45

**AUTHOR(S):**  
Nicoline Maljaars, Utrecht University, The Netherlands *  
Charlotte Eijkelboom, Department of Paediatrics, University Medical Center Utrecht/Faculty of Medicine, Utrecht University, The Netherlands  
Renske de Kleijn, Center for Research and Development of Education, University Medical Center Utrecht, The Netherlands  
Marieke van der Schaaf, Center for Research and Development of Education, University Medical Center Utrecht, The Netherlands  
Joost Frenkel, Department of Paediatrics, University Medical Center Utrecht, The Netherlands

**ABSTRACT:**  
**Background:** Patient feedback on medical students performance can be a valuable contribution to their learning process. An important condition for this feedback to be effective is that students view patients as a credible source for feedback.

**Summary of Work:** We studied how medical students perceived the credibility of patients as feedback providers and how these credibility judgments were formed. This study was performed during a 6-week elective course, where students worked in pairs together with a patient in developing a knowledge clip. During this course, students received feedback from patients on their knowledge clips and cooperation skills. Eleven sixth year medical students were interviewed after completion of the course.

**Summary of Results:** For 10 students, the degree of credibility they assigned to the patient changed throughout the course: 5 students showed a fluctuating pattern, 4 an ascending and 1 a descending pattern. Compared to the start, 6 students assigned more and 2 students assigned less credibility to the patient at the end of the course. Remarkably, students rated the patients credibility for providing feedback on their knowledge clip higher than on their collaboration skills. Students mentioned 16 factors that influenced their credibility judgments. Most students mentioned the following factors: Role of being patient and thus belonging to the target group and having experiential knowledge (11), which increased credibility; Content of the feedback message (10), which mainly decreased credibility; Trust in the patients motives for providing feedback (8), which could both increase and decrease credibility.

**Discussion and Conclusions:** Students do not rate patients as credible or not credible, rather they assign credibility on a continuum, which varies over time and is influenced by multiple factors. How these factors influence credibility judgments varies between individual students, even when they work with the same patient.

**Take-home Messages:** Patient feedback should be an essential component of medical education. Insight in how students form credibility judgments regarding patients as feedback providers can help educators to shape educational environments that positively contribute to students engagement with patient feedback.
ABSTRACT:
Background: Supervisors in postgraduate medical education may deliver different assessments for the same quality of performance. Residents may struggle to make sense of inconsistent and sometimes contradictory information. We sought to explore how residents experience feedback from supervisors, how they process inconsistent information, and what factors influence their experiences.
Summary of Work: Eighteen residents participated in semi-structured interviews to explore their perspectives on feedback. Data collection and analysis occurred iteratively, informed by constructivist grounded theory, and sample size was determined by theoretical sampling to sufficiency. Constant comparative analysis was used to identify and define themes.
Summary of Results: We identified a central theme of reconciliation, which we defined as the act of processing inconsistent feedback and determining how to engage with it. This reconciliation is informed by the credibility of, and residents relationship with, supervisors and is achieved through conversation with others, observation of others behaviour toward their performance, and reflection on their own performance. Residents emotional responses and insight on the value of feedback for their own growth as professionals were important factors in feedback incorporation.
Discussion and Conclusions: The findings of this study show that while residents are regular consumers of feedback, not all feedback is used equally. Residents actively reconcile incongruous feedback and its incorporation falls on a spectrum of outright dismissal to significant reflection and impacts on learning. This work reinforces the importance of pedagogical relationships where there are shared goals of educational outcomes, and development of supervisors as credible feedback providers.
Take-home Messages: This study further clarifies the need for residents and supervisors to be supported in their delivery and receipt of feedback, and creating a feedback culture which optimises the potential for residents to grow into confident and competent independent practitioners.
#SC44: SC - Assessment - Feedback

**#SC44.5 LevelUp - keeping track through an integrative feedback tool (8910)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 19:00 to 19:15

**AUTHOR(S):**  
Ylva Holzhausen, Charité - Universitätsmedizin Berlin, Germany*  
Miriam Alexander, Charité - Universitätsmedizin Berlin, Germany  
Hannah Tame, Charité - Universitätsmedizin Berlin, Germany  
Harm Peters, Charité - Universitätsmedizin Berlin, Germany  
Mandy Petzold, Charité - Universitätsmedizin Berlin, Germany

**ABSTRACT:**

**Background:** High quality feedback helps medical students to set goals and structure their learning. Students receive feedback through a variety of channels, so it can be difficult to keep track and maintain motivation. In 2017, we set out to design a programmatic assessment tool that integrates multi-source feedback, with the aim of helping Charité medical students to keep track.

**Summary of Work:** LevelUp was released to students in November 2019. The tool integrates formative and summative results on a central platform in the form of attractive graphic visualizations. The tool was evaluated by students using a variety of qualitative methods. 1. Volunteers (n=22) tested the prototype, 2. A dashboard survey garnered feedback from active users (n=71) 3. We interviewed students on campus (n=9) about their use of the tool, 4. Matomo web-analytics software monitors the number of visits to the page and clicks on individual features. See tool-demo at levelup.charite.de.

**Summary of Results:** So far, 61% of students are registered users. 1. Prototype testing led to improved design and usability. 2. Active users rated LevelUp positively while emphasizing the need for speedy data import, 3. Interviews revealed that students requirements of the tool vary depending on semester. 4. Web-analytics revealed 57,000 visits to the site since release with peak times prior to assessments.

**Discussion and Conclusions:** Results suggest that students rated LevelUp positively overall, while also indicating several areas for improvement. In particular, data needs to be as up to date as possible. The number of users will grow as new students are introduced to the tool, while a communication strategy is needed to attract students in later semesters. Further development should take into consideration the needs of different semester cohorts, further integrate Entrustable Professional Activities, teacher evaluations, and a clerkship logbook.

**Take-home Messages:** Students welcome an online tool integrating multi-source feedback and with their input it can be further optimized to align with their needs.
#W43: Workshop 43

#W43 Effective Online Teaching: An interactive international perspective (8716)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**  
Catriona Bell, Advance HE, UK  
Kathy Wright, Advance HE, UK  
Ian Hall, Advance HE, UK  
Tim Hinchcliffe, Advance HE, UK

**ABSTRACT:**  
**Background:** Advance HE has delivered teaching development programmes in more than 20 different countries over the past 5 years, typically on a face-to-face delivery model. The onset of Covid19 led to a surge in interest from institutions for effective methods of online teaching, and for Advance HE to deliver this training online. This workshop will showcase a range of digital tools and our approach to online learning, based on pedagogic research and experience of what works delivering sessions for medical and non-medical educators in Bahrain, Thailand, Ukraine and the UK. Feedback from our online programmes indicates impressive impact with 96.7% respondents reporting changes to practice in online teaching in our most recent impact survey and high levels of satisfaction with the synchronous and asynchronous work. The workshop will particularly highlight approaches underpinned by general pedagogic theory that are effective in a medical context and will include case studies and examples from medical and non-medical educators. It will also indicate how these programmes can link to international recognition for teaching and learning.

**Who Should Attend:** Who should attend: Educators/Teachers and Senior University Leaders with an interest in online teaching practice, or medical students with an interest in teaching.

**Structure of Workshop:** Structure of workshop: An interactive workshop where effective online teaching techniques and tools will be modelled by facilitators and trialled by participants (a wifi enabled device is essential). The workshop will be interspersed with case studies and

**Intended Outcomes:** Experimenting with a range of online teaching tools; Summarising key considerations for applying and evaluating tools in different contexts; Identifying tools to use in your own practice.

**Level:** Intermediate
#W44: Workshop 44

**W44** The COLT-instrument on Teachers’ Conceptions Of Learning and Teaching: what do you think? (9143)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**  
Johanna Jacobs, University Medical Center Utrecht, Center of Education and Training, Expertise Center, The Netherlands  
David Irby, University of California, San Francisco, USA  
Lisette van Bruggen, UMC Utrecht, Center of Education and Training, Expertise Center, The Netherlands  
Marieke van der Schaaf, UMC Utrecht, Center of Education and Training, Expertise Center, The Netherlands

**ABSTRACT:**

**Background:** All teachers have conceptions of learning and teaching, often partly unconsciously, which influence their teaching behaviour and indirectly their students learning processes and outcomes (Gibbs & Coffey 2004). It is essential that faculty development pays attention to teachers conceptions, especially in curriculum innovations toward more studentcentred education (Jacobs et al. 2016). To realize enduring changes in teachers behaviour and to prevent curriculum erosion, an awareness and development in teachers conceptions of learning and teaching are needed (Calkins et al. 2012). In this development, international and cultural differences should be acknowledged (Jacobs et al. 2020). Aim of this workshop is to provide a theoretical and practical background on teacher conceptions of learning and teaching, including insight into the participants own conceptions and a discussion on this theme.

**Who Should Attend:** Teachers (both undergraduate and postgraduate), coordinators, program directors. All those interested in conceptions of learning and teaching, faculty development and curriculum innovations.

**Structure of Workshop:** 1. Introduction conceptions of learning and teaching, including teacher profiles. (15) 2. Participant fill out the 18 item COLT instrument. (10) 3. Discussion and (peer)reflection in three groups of five participants, on their conceptions and their person

**Intended Outcomes:** 1. Participants know the theoretical and practical background of conceptions of learning and teaching; 2. Participants know the 18 item COLT instrument and its relation with faculty development; 3. Participants reflected on their own conceptions and perso

**Level:** Intermediate
#W45: Workshop 45

#W45 Integrating Telemedicine into Undergraduate Medical Education using the EPA Framework (8642)

Date of Presentation: 30 August 2021  
Time of Presentation: 18:00 to 19:30

PRESENTER(S):  
Marguerite Costich, Columbia University, USA  
Marina Catallozzi, Columbia University, USA  
Suzanne Friedman, Columbia University, USA  
Samuel Quiah, Columbia University, New York, USA  
Jonathan Amiel, Columbia University, New York, USA  
Samuel Master, Columbia University, New York, USA

ABSTRACT:  
Background: During the COVID-19 pandemic, in-person visits were significantly limited to reduce transmission of COVID-19. As a result, use of telemedicine increased exponentially, and many medical educators struggled to develop curricula for learners. The AAMC began the process of developing a 14th Entrustable Professional Activity (EPA) for telemedicine services and has published expected telemedicine competencies. During this workshop, we will provide an overview of the proposed EPA and published competencies and discuss related curricula. We developed a virtual Objective Structured Clinical Exam (OSCE) to simulate telemedicine encounters and created a workplace-based assessment (WBA) based on EPA 14 to provide more directed, formative feedback to Pediatric clerkship students after the OSCE.

Who Should Attend: Faculty involved in UME interested in developing telemedicine curricula.

Structure of Workshop: • Introduction: Audience-response polling (ARS) to establish experience with telemedicine and medical student education in telemedicine. Provide a brief overview of telemedicine during the pandemic. • Review of AAMC Telemedicine Competencies: AAMC tel

Intended Outcomes: 1. Identify methods for integrating telemedicine into UME using an EPA-based framework. 2. Review AAMC published competencies related to provision of telemedicine services. 3. Share strategies for teaching telemedicine-related skills, identifying potential

Level: Introductory
#W46: Workshop 46

#W46 Management Reasoning: Practical Strategies for Teaching using the Example of a Struggling Learner (8878)

Date of Presentation: 30 August 2021  
Time of Presentation: 18:00 to 19:30

PRESENTER(S):  
Andrew Parsons, MD, MPH, University of Virginia School of Medicine, USA  
Emily Abdoler, University Michigan School of Medicine, USA  
Michelle Daniel, University of California San Diego, USA  
Karen Warburton, University of Virginia School of Medicine, USA  
Larry Grupen, University of Michigan School of Medicine, USA  
Steven Durning, Uniformed Services University, USA

ABSTRACT:  
Background: Recently, Cook et al. highlighted the need for greater focus on teaching management reasoning, defined as the process of making decisions about patient management, including choices about treatment, follow-up visits, further testing, and allocation of limited resources. Parsons et al. subsequently described the management script and the management script template as a tool for teaching management reasoning to learners at all levels of training. In this workshop, we will use the example of a learner struggling with management reasoning to apply key theories and empirical evidence from the clinical reasoning literature. We will convey the benefits of early education in management reasoning and provide novel strategies for teaching.

Who Should Attend: Clinicians or educators interested in clinical reasoning.  
Structure of Workshop: Introduction (15 minutes): Introduce concept of MR; brief literature review. Large Group Exercise (15 minutes): Short video of a learner struggling with MR; participants identify deficits and suggest how they might address. Table Top Discussion (20 minutes)  
Intended Outcomes: -Describe the concept of management reasoning, including a comparison to diagnostic reasoning. -Describe the benefits of teaching management reasoning to undergraduate medical learners. -Apply the core concepts of management reasoning, namely management s

Level: Advanced
#W47: Workshop 47

#W47 Working internationally: Strategies for bridging cultural differences in medical education (8274)

Date of Presentation: 30 August 2021
Time of Presentation: 18:00 to 19:30

PRESENTER(S):
Marjo Wijnen-Meijer, TUM Medical Education Center, TUM School of Medicine, Technical University of Munich, Germany
Monica Van de Ridder, Spectrum Health Office of Research and Education - Michigan State University, USA
Elizabeth Kachur, Medical Education Development, Global Consulting, USA
TJ Jirasevijinda, Weill Cornell Medicine, USA

ABSTRACT:
Background: A consequence of globalization in medical education is the international movement among medical students, residents, staff and faculty (Stevens & Goulbourne, 2012; Hodges et al, 2009). Working and studying abroad often leads to difficulties in collaboration and communication. A USA surgeon explained: My residents are afraid of my colleague who emigrated from Eastern Europe, the direct communication style scares them. My colleague feels bad about it too. Support for learners or faculty from abroad is often lacking. Working abroad requires a deep understanding of the national culture and the related traditions, (hidden) norms and values. Even when this is present, mistakes are often unavoidable, affecting progress in projects, a persons credibility, or lead to frustration. The goal of this workshop is (a) to provide an opportunity to discuss challenges, opportunities and dilemmas related to international communication, (b) reflect on learning from mistakes by analyzing cultural communication failures with Hofstede’s national culture model, (c) share five rules which can be applied in every international communication context, and (d) provide a network opportunity for those working abroad.

Who Should Attend: Administrators, faculty, staff, residents and medical students who have worked, are working, or planning to work in an international context.

Structure of Workshop: The introduction (20’) includes an interactive exercise in which participants share their challenges of working in an international context. A theoretical overview discusses Hofstede’s model and other perspectives (Stevens & Goulbourne, 2012; Hodges et al, 2009). In small groups (40’) participants discuss a personal dilemma or a vignette about a difficult collaboration scenario. During a large group discussion (20’) lessons learned will be reviewed. The session will be closed with take home messages (10’).

Intended Outcomes: -Know the six dimensions of Hofstede’s national culture model: Power Distance, Individualism, Uncertainty Avoidance, Masculinity, Long term orientation and Indulgence.
-Learn from, provide suggestions to, and receive input on other participant’s experiences (successes, failures and dilemma’s) with international collaboration.
-Apply Hofstede’s national culture model and analyze participant’s failures and dilemma’s encountered in international collaboration.
-Explore five generalizable ‘rules’ for international collaboration which apply to each national culture.
Level: All levels.
# W48: Workshop 48

**#W48 Shame in Medical Education: A Mindful Approach (7406)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 18:00 to 19:30

**PRESENTER(S):**  
Beth Whelan, Memorial University of Newfoundland and Labrador, Canada  
Patricia Luck, University of Rochester, USA  
William Bynum, Duke University, USA

**ABSTRACT:**

**Background:** The medical literature is replete with discussions about emotional challenges in physicians and medical learners; however, despite its ubiquitous nature, shame is rarely discussed. This is not surprising, given that it is shameful and humiliating to admit that one has been shamed and humiliated (Lazare, 1987). Bynum et al’s studies with medical trainees (2019, 2020) revealed shame to be a highly physical and emotional experience that can lead to significant social isolation, diminished physical and psychological well-being, unprofessional behavior and impaired empathy. This workshop will incorporate an empirically validated mindfulness approach to facilitate an exploration of shame and cultivate engagement, empathy and resilience. This Mindful Practice® (Krasner et al, 2009) approach utilizes contemplative practice and narrative-based dialogues within an appreciative framework to develop awareness of shame. Presenters will create a safe environment by modeling vulnerability, sharing their own shame experiences and ensuring confidentiality, similar to steps taken in a previous iteration of this workshop (Centile Conference 2019). Post-evaluation data from that workshop revealed positive outcomes, including reports of feeling psychologically safe.

**Who Should Attend:** This workshop is designed for interdisciplinary healthcare workers involved in medical practice and education.

**Structure of Workshop:**

1. Brief mindfulness exercise. (5 min.)  
2. Introduction: Didactic overview: shame psychology; how shame can manifest in medicine; the value of sharing shame experiences; an overview of Mindful Practice. (20 min.)  
   a. Participants will write about a shame event from their work that they are comfortable sharing with another person. (15 min.)  
   b. Participants will share this experience in pairs using the Mindful Practice approach. (20 min.)  
4. Discussion: As a large group, participants will discuss experience of sharing shame stories and the potential for mitigation through Mindful Practice strategies. (20 min.)  
5. Conclusion: Mindfulness practice. (15 min.)

**Intended Outcomes:**

- Define shame, differentiate from guilt, and articulate why this distinction matters  
- Articulate effects of shame on health professions learners and practitioners  
- Report increased comfort sharing shame experiences  
- Use Mindful Practice skills to promote personal well-being

**Level:** No prior experience with meditation or other contemplative practices is required.
#S20: Symposium 20

**#S20  Micromanagement during clinical supervision: Characteristics, causes, consequences and faculty development strategies (7566)**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:00 to 21:30

**PRESENTER(S):**  
Vijay Rajput, Nova Southeastern University, Dr. Kiran C. Patel College of Allopathic Medicine, USA  
Monica van de Ridder, Spectrum Health- Michigan State University College of Human Medicine, USA  
Anuradha Lele Mookerjee, Cooper Medical School of Rowan University, USA  
Rakesh Surapaneni, Texas A&M College of Medicine, USA  
Bhawana Arora, Spectrum Health- Michigan State University College of Human Medicine, USA

**Summary:** Entrustable Professional activities are roadmaps for growth and development of trainees in Graduate Medical Education. This is necessary to help them develop into independent, competent physicians while being adequately supervised. However, when supervision is untimely and excessive, the attendings might be perceived as micromanagers. Micromanagement is defined as a supervisory style of “hovering” and directly commanding all the details, rather than giving space to the trainee assigned to perform the task. The literature on micromanagement is scarce in medical education, and faculty development on this topic is hard to identify. The goal of this symposium is to identify characteristics of a micromanager, its causes, consequences on the learner and learning environment and to build faculty development strategies for micromanagers.

The consequences of micromanaging behavior could lead to poor supervisor-learner relationship, lower team morale and affect the wellbeing of a trainee. Micromanagers can be detrimental to learner’s autonomy, and their overall competence. They often impact the team in a negative manner. Various factors such as attending’s personal insecurities, their perceived overall responsibilities, fear of reduced patient safety and quality, or the organizational culture can turn them into micromanagers.

**What will they gain from participating:**  
After an introduction we will cover (a) causes of micromanaging behaviors in faculty. We have developed conceptual framework of micromanagement in clinical settings that describes a ‘static zone of safety’, that cannot be adjusted to the trainees’ needs. The adaptive attendings on other hand create a ‘flexible zone of safety’, which they can adjust based on their trust in the trainees’ accountability and autonomy. The (b) learner’s perspective will focus on the consequences on motivation, effect on supervisor-learner relationship and autonomy. The (c) organizational perspective will cover demand on quality, safety and efficiency in clinical care that allow micromanaging behaviors in faculty that can be a threat to learning environment. We will explore (d) strategies from management literature for faculty development to overcome micromanagement. The discussion will be stimulated through polls, questions, and micromanaging scenarios.

**Who should participate:** Junior, mid career clinical faculty, GME Deans, Administrator, postgraduate trainee.
#S21: Symposium 21

#S21 Vulnerability in access conditions, teaching and wellbeing: Training of health professionals in Latin America amid COVID-19 (7564)

Date of Presentation: 30 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
Mildred Vanessa Lopez Cabrera, Tecnologico de Monterrey, Escuela de Medicina y Ciencias de la Salud, Mexico
Cristhian Perez-Villalobos, Universidad de Concepción, Chile
Daniel Enrique Suarez Acevedo, Universidad de los Andes, Colombia
Isabel Cristina Rojas Gallego, Universidad CES, Columbia
Mary Jane Schilling Norman, Universidad de Concepción, Chile
Nancy de los Angeles Segura-Azuara, Tecnologico de Monterrey, Escuela de Medicina y Ciencias de la Salud, Mexico

Summary: This work is derived from an international inter-university educational study that involves five Latin American countries: Chile, Colombia, Mexico, Paraguay, and Peru. Considering the forced migration that universities had towards online teaching due to the COVID-19 health crisis, and which mobilized more than 220 million tertiary students, this group undertook the task of analyzing how this migration impacted the educational experience for both students and educators.

What will they gain from participating:
Latin American countries experience sharp social inequalities, which translates to a few opportunities in access to knowledge and skill development. Health education students in our countries, most from indigenous heritage, experience similar challenges than students from underdeveloped countries and disadvantaged backgrounds. Even before the pandemic hit, the social situation in the region was deteriorating, due to the rising rates of poverty, the persistence of inequalities, and growing social discontent.

Students in health professions have limited educational opportunities, and often lack the technological and social conditions to support their training. The symposium will build on some of the results of a study performed amid the pandemic, which involved 10 universities from these five countries, correlating academic satisfaction with teaching and the technological and social conditions of access that students and educators had to continue their training during 2020. One of the most important discussion is to analyze how these conditions affected their well-being.

This symposium will show Latin American experience, but the challenges addressed are shared with other countries, even developed ones. The participants are invited to reflect on the vulnerability of students and educators in this historic challenge. An objective of this session is to provide a safe space as well for learning in which we can discuss our journeys in this migration which were accompanied by curricular models that were not prepared for change.

Who should participate: We want to invite in this session our colleagues around the world: educators, researchers, and students, that were part of this challenge. We want to share experiences, lessons learned, and dreams about the future of health professional education.
#S22: Symposium 22

#S22  The right tool for the right job – choices for synthesis and review in medical education: A BEME Symposium (9816)

Date of Presentation: 30 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
Madalena Patricio, Lisbon School of Medicine, Universidade de Lisboa, Portugal
Michelle Daniel, University of California, San Diego, USA
Morris Gordon, UCLAN, UK
Geoff Wong, University of Oxford, UK

Summary: Medical Education constantly faces major challenges as a result of globalisation, changing public expectations, the need for greater accountability, rapid advances in healthcare delivery and the potential of new learning technologies. However, the COVID-19 pandemic has forced ongoing evolution to become a dramatic revolution in many areas. With a growing amount of primary educational research output, the role of secondary research and synthesis cannot be overstated. This can meet the need for evidence to support decisions in daily teaching practice, for those innovating and producing new interventions, for curriculum designers and policymakers. This symposium will explore different types of secondary research to support a move to evidence based teaching namely ‘the right tool for the right job’ – as well as the distinct and important meaning of the term ‘systematic’ in relation to health education reviews.

A BEME (Best Evidence Medical Education) panel of contributors committed to the development of evidence informed education in the medical and health professions will each present aspects of the programme:

- ‘Every review the BEME publish is a systematic review - Why systematic matters’
- ‘Lessons from Cochrane: where do methods converge and diverge’
- ‘The Scoping review _past rhetoric to synthesis’
- ‘The realist review – the pitfalls and the promise’

This will be followed by an interactive and hopefully challenging discussion between panel members and conference participants for 45 minutes. The session will conclude with a summary of key take-home messages.
ABSTRACT:

Introduction: Identifying predictors of success in post-graduate examinations can help guide the career choices of medical students and may aid early identification of trainees requiring extra support to progress in specialty training. Studies have already demonstrated the validity of academic performance during medical school in predicting ability during Foundation Training. However, there is little research on the association between medical school performance and performance during specialty training in the UK. This is an important gap in the literature as research from other contexts indicate that examination results taken during and shortly after medical school predict later performance on board certification examinations, patient outcomes and complaints. We assessed whether performance at medical school as quantified by the Educational Performance Measurement (EPM) and scores from the Situational Judgement Test (SJT) used for selection into Foundation Training predicted success at the Membership of the Royal College of Surgeons (MRCS) examination. Successful completion of the MRCS is mandatory for all UK surgical trainees and examination performance is known to predict future training outcomes within surgical specialties.

Methods: This was a longitudinal, cohort study analysing data from the UKMED Database for UK graduates who had attempted MRCS Part A (n=1,975) and Part B (n=630) between 2013-2017. Univariate analysis examined the relationship between performance and the likelihood of passing MRCS at first-attempt. Logistic regression identified independent predictors of MRCS success. Given success in medical education and training is related to socio-demographic factors as well as academic ability, we also examined the relationship between MRCS success and sociodemographic factors, including these in logistic regression models.

Results: For every additional EPM decile point gained the chances of passing MRCS at first attempt increased by 52% for Part A (odds ratio 1.52 [95% confidence interval (CI) 1.46-1.60]) and 27% for Part B (1.27 [1.18-1.38]). For every point awarded for additional degrees in the EPM, candidates were 29% more likely to pass MRCS Part A first time (1.29 [1.12-1.48]). SJT score was not a statistically significant independent predictor of MRCS Part A or Part B success after adjusting for sociodemographic factors including gender, ethnicity and graduate status (P=0.182 and P=0.125 respectively).

Discussion and Conclusions: This is the first study to investigate the relationship between medical school and foundation training selection performance with success at a high stakes UK postgraduate surgical examination. This study demonstrated the EPM’s independent predictive power and found that medical school performance deciles are the most significant measure of predicting later success in the MRCS. Whilst group-level attainment differences between sociodemographic groups have also been identified in other postgraduate examinations in the UK and United States, these require further investigation with differential item functioning analysis to rule out systemic bias as a cause. The findings of this study can be used by medical schools, training boards and workforce planners to inform evidence-based and contemporary selection and assessment strategies.
**ABSTRACT:**

**Introduction:** Student performance while in undergraduate medical or healthcare education may offer a guide to future performance once in clinical practice. It is known that performance on objective tests has significant predictive validity for later clinical practice. However, there are currently no demonstrated measures of personality-related performance with such validity. Our aim, therefore, was to explore the relationship between medical student Conscientiousness Index scores and indicators of later clinical performance held in the UK Medical Education Database to determine whether conscientiousness in first and second-year medical students predicts later performance in medical school and in early practice.

**Methods:** This was a Prospective correlational study set in a single UK medical school and early years of practice. Data was collected between 2005-2018 as part of the Conscientiousness Index (CI) project (1). Data on students’ performance of routine tasks such as attendance and submission of assignments, was assembled to form a single score, known as the Conscientiousness Index. Positive, statistically significant correlations were previously observed with CI and outcome performances such as examination scores and independent staff ratings of professionalism. The process has since been repeated in other health care settings (2). The CI scores represent the predictor variable for this study. In order for us to assess any predictive validity of the CI for future performance as a doctor, outcome variables data were obtained from the UK Medical Education Database (UKMED) on 858 students; scores on the UK Foundation Programme Office’s Situational Judgement Test (SJT) and Educational Performance Measure (EPM), the Prescribing Safety Assessment (PSA), and Annual Review of Competency Progression (ARCP) outcomes.

**Results:** Linear regression analysis shows Conscientiousness Index scores significantly correlate with pre- and postgraduate performance variables,: SJT scores (R=0.373, R²=0.139, B=0.066, p<0.001, n=539); PSA scores (R=0.249, R²=0.062, B=0.343, p<0.001, n=462); EPM decile scores for the 1st (lowest) decile are significantly lower than the remaining 90% (P<0.003, n=539), as are PSA scores (P<0.001, n=463), and ARCP Year 2 scores (P=0.019, n=517). The Odds Ratio that students in the 1st decile fail to achieve the optimum ARCP outcome is 1.6126 (CI 1.1400 to 2.2809, p=0.0069, n=618).

**Discussion and Conclusions:** Conscientiousness Index scores in Year 1 and 2 of medical school have predictive value for later performance in knowledge, skills, and clinical practice. This research is very likely to open the way towards recognizing factors during medical student training that might lead to performance issues at a professional, working level. This trait could be used either for selection or for targeted remediation to avoid potential problems in the future.

**References:**


#RP10: Research Paper - Predicting performance

#RP10.3 Will raters overcome their first impressions when learner performance changes? Implicit versus explicit first impressions in the workplace (7766)

Date of Presentation: 30 August 2021
Time of Presentation: 20:40 to 21:00

AUTHOR(S):
Timothy Wood, University of Ottawa, Canada*
Vijay Daniels, Department of Medicine, Faculty of Medicine and Dentistry, University of Alberta, Canada
Debra Pugh, Department of Medicine, University of Ottawa and Medical Council of Canada, Canada
Claire Touchie, Department of Medicine, University of Ottawa and Medical Council of Canada, Canada
Samantha Halman, Department of Medicine, University of Ottawa, Canada
Susan Humphrey-Murto, Department of Innovation in Medical Education and Department of Medicine, University of Ottawa, Canada

ABSTRACT:

Introduction: Assessment within a competency-based medical education framework relies on direct observations of learners in the workplace. To ensure results are accurate and enhance learning, understanding how various factors influence rater judgments is important. One factor is first impressions: judgments that are formed quickly and based on limited information. Previous work has demonstrated a relationship between first impressions of learners and a subsequent judgment but that raters are also willing to change ratings depending on learner performance.

A limitation to this research is that the studies were conducted in an artificial context. Judgments made in real-world settings may not be influenced by rater biases in the same way as they are in a laboratory and could influence the validity of judgments. Shifting to real-world settings, however, is not without risk. To study first impressions, the impression is made explicit and studies have shown that explicit judgments can anchor subsequent judgments. Because even low stakes assessments have consequences, it is important to ensure that explicit first impressions will not unduly influence subsequent judgments before studying in the real-world.

Methods: A total of 45 experienced physician raters from two medical schools volunteered for this study. Two variables were manipulated. For the performance variable, two videos showed a learner who started with a strong performance and then transitioned to a weak performance during a patient encounter and two videos showed a learner who started poorly but then transitioned to a strong performance. A third pair were control videos in which learners displayed a consistent performance throughout. For the second variable, 23 raters made a first impression global rating (FIGR) on a nine-point scale (Explicit) and then watched the remainder of the video and judged the learner’s performance using a six item Mini-CEX form (Mini-CEX) and a global rating (GR). Raters (n=22) in the second condition (Implicit) viewed each video in its entirety and then provided ratings on the Mini-CEX and GR. Raters were told to think of the learners as first year trainees interacting with patients in a workplace setting.

Results: For the Explicit condition, the FIGR was compared to the Mini-CEX and GR to determine if there is a change based on performance. For the Control condition, the mean ratings on the three measures did not differ (FIGR=6.6, Mini-CEX=6.6, GR=6.7, p=.91) For the Strong to Weak condition, the FIGR (M=5.9) was higher than both the Mini-CEX (M=3.7, p<.001) and GR (M=3.0, p<.001). For the Weak to Strong condition, the FIGR (M=2.4) was lower than both the Mini-CEX (M=3.9, p<.001) and GR (M=4.0, p<.001).

For the second analysis, the Mini-CEX and GR for the Explicit group was compared to the ratings for the Implicit group. In the Control condition, the Explicit Mini-CEX (M=6.6) did not differ from Implicit Mini-CEX (M=6.2, p=.25) nor were the differences significant in the Strong to Weak condition (Explicit=3.7, Implicit=4.1, p=.18) and the Weak to Strong condition (Explicit=3.9, Implicit=3.9, p=.88). An identical pattern was found with the GR.

Discussion and Conclusions: This study had two main findings. First, it demonstrated that raters were willing to adjust their judgements based on the learner performance and replicates previous work in area. Second, because judgments in the Explicit condition did not differ from those in the Implicit condition, this finding demonstrates that an explicit first impression does not anchor subsequent ratings.
Most studies of rater bias occur in laboratory settings so it is not clear to what degree these findings and methods can be applied to the real-world. There is also a risk to validity of applying laboratory methods to real-world assessments without understanding how best to transition methods. Our concern was that making first impressions explicit when judging learners, which is artificial, would anchor ratings and limit the ability to apply our methods to real-world settings. Finding that raters focus on overall learner performance and are not anchored by an explicit first impressions would be reassuring for studying rater biases in workplace settings.
What is the effect of a peer-teaching programme at medical school on student performance? A systematic review and meta-analysis (7802)

Date of Presentation: 30 August 2021
Time of Presentation: 21:00 to 21:20

AUTHOR(S):
Clarissa Brierley, Warwick Medical School, University of Warwick, UK*
Leila Ellis, Warwick Medical School, University of Warwick, UK
Emily Roisin Reid, Warwick Medical School, University of Warwick, UK

ABSTRACT:
Introduction: The delivery of peer-assisted learning (PAL) at medical school alongside the core curriculum is increasingly common practice. While it has been suggested that the learning environment peer-tutors and their students share allows concepts to be presented at the correct level, the efficacy of PAL relative to traditional teaching methods has not been clearly defined.

Methods: A systematic review of randomised studies of PAL conducted in medical school was completed. A literature search was conducted across Medline, Ovid EMBASE, Web of Science and Education Research Complete. Titles and abstracts were screened and records selected following strict eligibility criteria. The criteria included: a study population of medical students acting as both students and peer-teachers, an intervention related to peer-assisted learning, at least one comparator arm involving no peer teaching, and the recording of a measurable objective outcome in the shape of a final assessment. Two reviewers then independently extracted data from the selected publications. The impact size of the study outcomes was assessed using a modified version of “Kirkpatrick’s Levels of Learning” (1). Student test scores were standardised by calculating the standardised mean difference (SMD). All statistics were performed using RevMan and STATA.

Results: 25 randomised controlled trials met eligibility criteria, and 19 were included in the meta-analysis. Meta-analysis of the included articles identified a significant improvement in the academic performance of medical students who received PAL compared to those in the control group (SMD = 0.43 [95% confidence interval 0.07 – 0.80]; p=0.02). The impact of PAL was more marked amongst clinical medical students (SMD = 0.63; p = 0.02) than pre-clinical medical students (SMD = 0.15; p = 0.56), and when used to deliver practical skills teaching (SMD = 0.61; p = 0.01) compared to theory (SMD = -0.11; p = 0.21). PAL was also more effective than non-PAL methods in assessments run more than four weeks after course completion (SMD = 1.20; p = 0.04).

Discussion and Conclusions: The principal finding of this study is that peer involvement significantly improves medical students academic performance. The review identified that PAL is particularly useful to students in the clinical stages of their education, reflecting the fact that students are generally more independent at this stage and may benefit less from didactic teaching sessions. The success of PAL in this context implies that it is a suitable tool to support independent student learning. The study’s secondary outcomes demonstrate that PAL lends itself best to the teaching of procedural clinical skills, resulting in a significant improvement in practical assessment outcomes when compared to students assessed on theoretical knowledge alone. Evidently, clinical tasks lend themselves to small group, peer-assisted teaching, where students can learn both from the tutor and each other while practicing and honing their techniques. This study also identified that PAL has a longer-lasting impact on student performance: students participating in PAL performed significantly better than non-participants when assessed more than one month after the teaching end, while there was no significant difference between the interventions when students were assessed shortly after teaching occurred. The preliminary findings reported further underscore the importance of supporting PAL programs and continuing to assess long-term academic outcomes. Our results demonstrate that medical students taught using PAL derive objective benefit in terms of academic performance, relative to non-PAL teaching methods. PAL is of particular value in the clinical stages of training and for practical skills. The long-term outcomes of PAL are understudied and remain a priority for medical education research.
#SC45: SC - Transition

#SC45.1 The tips and tricks no-one tells you on the wards (8586)

Date of Presentation: 30 August 2021  
Time of Presentation: 20:00 to 20:15

AUTHOR(S):  
Sharon Wing Lam Yip, Buckinghamshire Healthcare NHS Trust, UK*  
Diluxshy Elangaratnam, Buckinghamshire Healthcare NHS Trust, UK

ABSTRACT:  
Background: Newly qualified UK doctors have reported feeling unprepared for foundation year 1 (FY1). Educational interventions to improve preparation typically focus on the acutely unwell patient, prescribing, and clinical skills. However, in comparison, there is a paucity of literature focussed on non-clinical tasks. This study explores the effect of a preparation programme for final year students which addresses tips and tricks for day-to-day tasks such as preparing notes for a ward round, prioritising a jobs list, time management and writing discharge summaries.

Summary of Work: We piloted a 2-hour foundation transition tutorial for all final year medical students placed at Stoke Mandeville Hospital (2020-2021), with 16 students rotating monthly from October to April. Prior to the programme, a mock-up session was used to collect student feedback via a semi-structured focus group, and recommended changes were applied for the pilot. Subsequently, post-session questionnaires were sent to all attendees. This collected quantitative feedback via Likert-scale questions and qualitative feedback via neutrally phrased open-ended questions. We generated descriptive statistics and thematically analysed qualitative feedback.

Summary of Results: There were 31 respondents out of 40 attendees (77.5% capture rate). 23/31 (74%) strongly agreed that the course was relevant to transitioning from a student to a foundation doctor. 31/31 (100%) agreed that the course improved perceived confidence in performing FY1 non-clinical tasks. Students found the session overall useful for their transition to FY1: felt highly relevant to the actual job (in a way that finals revision often doesn’t). Three core themes representing the aspects students found most relevant, including: clarification of the expectations of FY1, knowledge of practical running of the ward, practice of non-clinical skills.

Discussion and Conclusions: Research by the UK General Medical Council has highlighted FY1 doctors report administrative tasks such as retrieving results, clinical documentation, and discharge summaries as an integral part of FY1. However, undergraduate training often does not emphasise practical teaching of these non-clinical tasks. This study corroborates previous literature showing students value knowledge and skills directly transferable to the workplace.

Take-home Messages: There is a need for undergraduate teaching on practical aspects of non-clinical tasks and day-to-day running of a ward to ensure FY1 doctors are ready for practice.
The Interim Foundation Year 1 doctors (FiY1) - more prepared than prior and peer F1 cohorts? (7910)

Date of Presentation: 30 August 2021
Time of Presentation: 20:15 to 20:30

AUTHOR(S):
Clare Van Hamel, UK Foundation Programme, UK*
Connor Moore, Severn Foundation School, UK
Linda Hollen, Bristol University, UK
Natalie Blencowe, North Bristol NHS Trust, UK

ABSTRACT:
Background: Due to the COVID-19 pandemic placing extreme strain on the healthcare workforce, a new role of the Interim Foundation Year 1 (FiY1) was created to fulfil predicted rota shortages. Consequently, all final year medical students deemed eligible were offered the opportunity to be provisionally registered by the GMC. Of the 7588 eligible to work as an FiY1, 4662 (61.43%) were allocated to a foundation school. Uniquely a large proportion of final year medical students undertook FY1 responsibility before their first official posting.

Summary of Work: Questions in the national FY1 survey assessed self-reported preparedness in various key skills required for FY1s. A modified version of this survey was developed in 2020 and released to FY1s; including additional questions that categorise candidates into interim vs non-interim groups and explore variability in FiY1 experience that participants had in the coronavirus period. Anxiety levels were measured using the validated LAGS questionnaire.

Summary of Results: FiY1s in 2020 reported higher self-reported preparedness than non-FiY1s (p=<0.001). Non-FiY1s also felt significantly less prepared than the non-FiY1 2017-2019 cohort. There was a reduction in mean anxiety score between FiY1s (4.61) and non-FiY1s (5.80) (p<0.001). FiY1s were not significantly less anxious than their 2017-19 peers (17-19 = mean score 4.89 [p=0.14], pathological anxiety 32.3% [p=0.19]).

Discussion and Conclusions: Largest study of its kind examining factors which influence perceived preparedness for FY1. Evaluation indicates that respondents who spent time in an FiY1 role had higher levels of self-perceived preparedness & decreased level of anxiety when compared to non-FiY1s. The role of an FiY1 decreased anxiety levels in the context of the COVID-19 pandemic but did not significantly impact anxiety when compared to previous years. Interestingly, non-FiY1s in 2020 were significantly more anxious than FiY1s and the 2017-19 cohort.

Take-home Messages: The FiY1 opportunity appears to have prepared new doctors more effectively for their roles as F1s than the standard shadowing at medical school. Consideration should be given to the cost (paying the FiY1s) versus the benefits (better prepared F1s) on a UK wide level. It is likely that a better prepared workforce might deliver improved patient safety although this would be difficult to formally evaluate,
#SC45: SC - Transition

#SC45.3 The class of COVID-19: qualitative findings on work and wellbeing of UK trainee doctors during the pandemic (9135)

Date of Presentation: 30 August 2021
Time of Presentation: 20:30 to 20:45

AUTHOR(S):
Anna Goulding, Newcastle University, UK*
Daniele Carrieri, Exeter University, UK
Karen Mattick, Exeter University, UK
Bryan Burford, Newcastle University, UK
Gillian Vance, Newcastle University, UK
Nicola Brennan, Plymouth University, UK

ABSTRACT:
Background: In response to the pandemic starting March 2020, the UK authorities developed ways for final year medical students to graduate and start work as qualified, provisionally registered doctors earlier than usual. A new role - the Interim Foundation Year 1 (FiY1) - was created for them to support the existing medical workforce in a period of high workload and uncertainty. FiY1 had some protective measures, such as being restricted to daytime, weekday working, but had no regulatory restrictions. This study evaluated the FiY1 programme considering the work and wellbeing of these new doctors, and any implications for future medical training.

Summary of Work: The study involved multiple methods and stakeholders, and was undertaken between May and December 2020. This paper focuses on qualitative data from FiY1s journal entries and interviews undertaken between May and December 2020.

Summary of Results: Despite disruption to planned activity such as clinical placements, exams and graduation, graduates felt generally well supported by their medical schools in the early stages of the pandemic. On starting work there was considerable variation in experiences, and social isolation arising from covid restrictions was a problem for some. However, in general those who did FiY1 had a positive experience, being well-supported by colleagues during clinically challenging experiences. The experience gained boosted their learning ahead of starting their first normal postgraduate training job, and the support received eased their transition through FiY1 and beyond.

Discussion and Conclusions: The findings shed light onto nuanced features of transition pathways and training environments that support optimal medical training. Notably, challenging experiences were not necessarily negative, if they were accompanied by support from colleagues. FiY1 appears to have been a positive experience for new graduates in the context of the pandemic, and to have provided educational benefit in developing their perceived preparedness. Support for trainees should address the challenges of isolation, particularly for those living alone or moving to new places.

Take-home Messages: In general, those that did FiY1 had an overall positive experience. Our findings shed light into the features of transition pathways and of training environments that support optimal medical training.
#SC45: SC - Transition

#SC45.4 In-situ Simulated Ward Cover Work Improves Confidence in Final Year Medical Students (9534)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:45 to 21:00

**AUTHOR(S):**  
Sajan Khullar, Shrewsbury and Telford Hospital NHS Trust, UK*  
Sara Day, Shrewsbury and Telford Hospital NHS Trust, UK  
Thomas Thompson, Shrewsbury and Telford Hospital NHS Trust, UK  
Emily Khoo, Shrewsbury and Telford Hospital NHS Trust, UK

**ABSTRACT:**  
**Background:** Starting as a foundation year one (FY1) doctor can be a daunting experience, and previous studies have highlighted significant anxiety with starting on-call and ward cover shifts. The General Medical Council advises that transition interventions, such as simulation, can improve preparation for clinical practice. We have designed a simulated ward cover experience targeted at final year medical students.  
**Summary of Work:** The simulation took place on the medical wards in a district general hospital. Each student received a pager and was contacted by the facilitator who simulated being various members of the multidisciplinary team. The tasks were paper-based and consisted of common FY1 tasks which included prescribing requests and reviews of deteriorating patients. Students were expected to prioritise, manage and escalate patients appropriately. The session was concluded with a simulated medical emergency scenario and handover to the night team. Students were surveyed pre-session and asked to rate their confidence in several domains surrounding prioritisation, clinical management, working independently, communication, and prescribing. Students were then asked to re-evaluate their confidence in the same domains upon completing the simulation session.  
**Summary of Results:** Overall, there was an increase in confidence across all domains. Prior to the simulation session, students were least confident in making decisions independently, working independently and making effective referrals. The majority of students reported improvements in confidence across all domains.  
**Discussion and Conclusions:** All students who undertook the simulation found it useful in preparing for FY1 and many have suggested its inclusion as a mandatory part of the curriculum. Simulation provides a safe environment to increase confidence in clinical practice that may not be covered in our current medical curriculum and allows for experiential learning without endangering patient safety before starting as an FY1 doctor.  
**Take-home Messages:** The simulated ward cover experience can easily be integrated into a final year medical curriculum based on an apprenticeship model and can increase student confidence prior to FY1 as a transition intervention. It could also be incorporated into NHS Trust inductions for new FY1 doctors.
#SC45: SC - Transition

#SC45.5 How to support newly graduated doctors? The potential of a change laboratory process (8803)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 21:00 to 21:15

**AUTHOR(S):**  
Tine Lass Klitgaard, Department of Postgraduate Medical Education, Aalborg University Hospital, Denmark*  
Sofie Gjessing, Center for General Practice, Aalborg University, Denmark  
Mads Skipper, Postgraduate Medical Educational Region North, Denmark, Denmark  
Susanne Nøhr, Department of Postgraduate Medical Education, Aalborg University Hospital, Denmark

**ABSTRACT:**  
**Background:** The transition from medical school to working as a doctor has often been described as stressful and challenging. In a previous study, we found that the newly graduated doctors (NGD) are struggling with an overwhelming feeling of responsibility, lack of local knowhow, complex collaborations and difficulties in prioritising tasks. This raised the question: As a hospital organisation - what can be done about it?  

**Summary of Work:** As the NGDs challenges are complex and involve several stakeholders we, the research team, designed a Change Laboratory intervention (CL) aiming to rethink and challenge the current work procedures and developing possible improvements in collaboration with stakeholders. We conducted five CL sessions of 45 minutes involving NGDs, junior doctors, and consultants responsible for medical education across eight departments (on average, 19 doctors participated in each session).

**Summary of Results:** Several themes and contradictions appeared: 1) The NGDs find support in their junior colleagues, but often work isolated spanning different departments; 2) The NGDs depend on support from their collaborators, but opposing agendas and priorities exist and sometimes impede these collaborations; 3) The amount of information conveyed in the first weeks is vast and surpasses the NGDs capabilities to process it. In the CL process, the participants discussed these new insights which lead to two initiatives: A new introduction programme for all NGDs; and a monthly meeting forum.

**Discussion and Conclusions:** By working with contradictions within the hospital organisation in the CL process, the participants were able to develop initiatives focusing on mitigating the NGDs struggles. At the introduction day, the focus is on need-to-know. The NGDs meet their future collaborators, are introduced to important work procedures and are given the opportunity to establish a relationship with peers. This is followed up at monthly meeting forums with focus on nice-to-know where new topics are introduced; there is time for reflection and the community with peers is further developed.

**Take-home Messages:** The CL approach offered a unique opportunity for the stakeholders to challenge and rethink their work practices within the hospital organisation. The method provides insight, induces great commitment and a sense of ownership, which should not be overlooked when implementing new initiatives within organisations.
#SC45: SC - Transition

#SC45.6 Redefining Transition: Experience of Transition in the Pre-Clinical Years of Medical Education (8978)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 21:15 to 21:30

**AUTHOR(S):**  
Kenneth Hargreaves, University of Leeds School of Medicine, UK*

**ABSTRACT:**

**Background:** The work focuses on the recent increases in admission of medical students from widening participation backgrounds and their experience during the pre-clinical years of medical education at a research-intensive university. Additionally, the study aims to contribute to the theorisation of transition and consideration for future student learning and support.

**Summary of Work:** There have been continuous increases in the percentage of widening participation students in the school of medicine. Assumptions from pre-admission research (Reay et al, 2009 and Briggs et al, 2012) suggest that students lack both social and cultural capital (Bourdieu, 1973) impacting on their preparedness for higher education. This inspired an exploration of undergraduate medical education to illuminate personal transitional experiences on course, possibly contesting previously applied deficit models. The case study captures the personal lived experiences of first in family students to access higher education, over the initial two years from admission onwards. The existential methodology recognises transition as a phenomenon and narrative interviews are used to explore and interpret ongoing changes in learning and identity through the use of Jarvis (2006) model of the transforming person.

**Summary of Results:** The study is longitudinal over 2 years and preliminary findings suggest unique stories of transition in widening participation students reveal a higher level of academic preparedness for Higher Education than pre-access studies have suggested.

**Discussion and Conclusions:** Increasing agency in students through reflection and narration of their own story of early transitions, has the potential to create a sense of the transformative self. Recognising students individual subjectivities as a means of them owning the contextual situations in which they learn and become could be a step towards increasing wellbeing in the context of the current pandemic and beyond. A more nuanced conception of transition, which contests previous structural models, transition considered as a plural construct, might invoke new practices for the benefit of increasingly socially diverse students.

**Take-home Messages:** Transition is more usefully envisaged as a personal, life defining concept rather than structural definitions between levels of education. Support for students could be provision of opportunities to reflect, increase agency, and internalise personal adaptations to learning and the transitional process itself.
The validity of the BioMedical Admissions Test (BMAT) in predicting medical school performance (9205)

Date of Presentation: 30 August 2021
Time of Presentation: 20:00 to 20:15

AUTHOR(S):
Safiatu Lopes, Cambridge Assessment, UK*
Sarah McElwee, Cambridge Assessment Admissions Testing, UK

ABSTRACT:
Background: BMAT is an admissions test that is used, in the UK and internationally, for entry to medicine and related biomedical courses. To ensure that individuals selected for medical study will cope with the demands of training, selection assessments must be valid, fair and defensible. In particular, establishing predictive validity of selection methods is vital. This analysis examines the degree to which BMAT predicts on-course performance during medical training, compared to UK high-school qualifications.

Summary of Work: Grade data for pre-clinical phases of medical training were collected from six cohorts at a UK university, from 2013 to 2018. This was linked with BMAT and national school-leaving qualifications (A-Levels). Correlations and regressions were conducted, to explore theorised relationships between BMAT scores, A-Levels and marks achieved in the first two years of medical school.

Summary of Results: BMAT scores predicted first year performance and likelihood of getting Class I grades, beyond the extent to which A-Levels predicted performance. Section 2 (which assesses scientific knowledge and application) was the strongest predictor, followed by overall A-Level performance. Overall, A-Levels and BMAT accounted for a small proportion of variance in medical study performance, although this may be due to strong attenuating effects present when scores are used in selection, such as greater range-restriction.

Discussion and Conclusions: In this study, some BMAT section scores predicted more variance in early medical school performance than high-school achievement. Admissions tutors working in contexts similar to this study (e.g. where the applicant pool is already highly selected) may wish to weight scores from admissions tests more heavily than they did previously. In the UK context, where A-Level results are not available at the time of application, BMAT scores can be reliably used as a selection tool for medical study.

Take-home Messages: BMAT demonstrates incremental predictive validity over high-school qualifications, when using on-course performance as the criterion. Therefore, it can be a valuable tool to assist medical schools with differentiating between applicants.
#SC46.2 Can Behavior-Based Interviews Reduce Bias in Fellowship Applicant Evaluations? (9522)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:15 to 20:30

**AUTHOR(S):**  
Melissa Langhan, Yale University School of Medicine, USA*  
Michael Goldman, Yale University School of Medicine, USA  
Gunjan Tiyyagura, Yale University School of Medicine, USA

**ABSTRACT:**

**Background:** Selection committees use data from written applications and interviews to evaluate applicants and construct a rank list. Components of the application such as test scores and letters of recommendation may introduce bias based on race or gender. Behavior-based interviews (BBIs) rely on structured questions to assess an applicant’s past experiences as a way to predict future behavior. BBIs assess core traits such as professionalism, leadership, and integrity that may not emerge from typical sources. Our objective was to compare applicant scores and rankings by race and gender when using a standardized evaluation vs. a BBI specific tool.

**Summary of Work:** BBI questions and scoring rubrics were implemented in a single fellowship program over two consecutive application seasons. Six attendings performed BBIs. Nine attendings performed unstructured interviews. Each applicant was interviewed by 6 attendings, who used either BBI or unstructured interviews. All attendings completed a standardized evaluation composed of 7 categories derived from the written application and interview. Attendings conducting BBIs also scored applicants using a BBI specific rubric. Applicants self-identified gender and race was abstracted from their written application. Average scores were calculated applicants ranked into quartiles.

**Summary of Results:** Seventy-five applicants were interviewed; 71% female, 56% White; 28% Asian; 15% Hispanic or Black. There were no significant differences in scores or quartiles by gender for either evaluation method. There were significant differences in scores and quartiles by race with the standard evaluation (p=.04), but not with the BBI scores (p=.17). When examining scores of only the attendings performing BBIs, standard evaluation scores remained significantly different by race.

**Discussion and Conclusions:** Despite potential gender differences found in written applications, there were no significant differences in evaluation scores by gender using either tool. Significant racial differences were found using a standardized evaluation, however these didn't exist with the BBI-based tool. Revision of evaluation tools should target areas which contribute to racial disparities in applicant assessment.

**Take-home Messages:** Incorporating BBIs can help reduce racial disparities in the evaluation of fellowship applicants.
ABSTRACT:

Background: In 2018, the IUHIBA (Instituto Universitario Hospital Italiano de Buenos Aires, Argentina) implemented a major curriculum renewal influenced by the competency-based medical education (CBME) tendency in the last decades. A new integrated outcome- and community-based curriculum with an EPA-based structure was established. To be coherent, the admission process needed to be adjusted to the new curriculum philosophy. Previously, it involved participation in basic biomedical lectures and passing a test (MCQ) for defining a ranking. Since 2018, the admission process consisted of a PBL-based and case-based (short or long essay items) test. Although there is a substantial body of literature supporting the predictive value of the traditional medical college admission tests with medical school performance in other countries, this is the first research on the subject in our context. The study aims to explore the predictive validity of the students’ scores in the new admission process to their performance in the new curriculum.

Summary of Work: A retrospective analysis was conducted considering students admitted to medical school between 2018 and 2020. We reviewed social-demographic data including age, sex, race, language, educational background, and dropout rate. Absolute values and percentages were used for categorical data and means and standard deviations for continuous variables. Spearman’s rank coefficient was used to correlate admission test scores and the average scores of the students’ grades during medical school. A sub-group analysis was made by separating different years.

Summary of Results: 151 participants were analyzed (2018: 44; 2019: 54 and 2020: 53). Correlation analysis between the admission test scores and the students’ grades average scores of the three years was moderately positive (Spearman’s coefficient of 0.55; p<0.001). Sub-group analysis of separate years did not show any notable differences, neither the analysis of social-demographic data.

Discussion and Conclusions: The selection of students is a major issue in Higher Education. The availability of selection processes and tests that could predict the students’ performance during medical school is crucial. Though evidence for predictive validity exists, this is the first study in our context that provides some evidence of the predictive validity of this method of selection.

Take-home Messages: Selection process of medical schools should be coherent with the curriculum philosophy.
#SC46: SC - Selection - Undergraduate and Postgraduate

#SC46.4 What is known about the career outcomes of UK undergraduate and graduate medical students? A scoping review (9340)

Date of Presentation: 30 August 2021
Time of Presentation: 20:45 to 21:00

AUTHOR(S):
Emma Andrews, Warwick Medical School, UK*

ABSTRACT:
Background: The medical profession in the UK is currently facing serious workforce challenges with both shortages in specialties and in location. Anecdotally, it has been hypothesised that graduate medics may be more inclined to work in some shortage specialties and settle in under-doctored areas. Graduate entry medicine was first introduced in the UK in 2000. In the academic year 2018/19 9.9% of the students commencing medical degrees were studying on graduate entry programmes, with many more graduates on standard entry programmes.

Summary of Work: To outline the landscape of the current research a scoping review was conducted, using the framework proposed by Arksey and OMalley 2005. After duplicates were removed 5311 papers, from Medline, Web of Science and Education Research Complete, were screened by abstract and title. 55 papers were selected to screen based on full text, and 6 papers were chosen for inclusion in the review.

Summary of Results: Doctors from graduate entry programmes are more likely to enter directly into training than those on standard entry programmes, but are no more likely to enter GP training. Graduates from standard entry programmes, however, are more likely to enter GP training. Looking at specialty choice in general, graduates on both standard and graduate entry programmes are more likely to pick higher earning specialties.

Discussion and Conclusions: Those on graduate entry programmes have the same ambitions as undergraduates but are more confident in them. Moving directly into specialty training may be motivated by external responsibilities, but these additional responsibilities do not cause those on GEPs to choose more family friendly specialties such as GP.

Take-home Messages: - Those completing graduate and undergraduate medical degrees have the same career aims - Graduates are more likely to move directly into specialty training having completes Foundation Training. - Primary research is needed to fully elucidate these, and other, differences and to identify how career support can be suited to these different groups of trainees
ABSTRACT:
Background: The challenge within any medical educational setting is the tripartite balance between learner, patient and supervisor. Each is essential - educational needs of learner, sensitivity and requirement to deliver safe and effective care to patient and skill set with protected time for supervisor. These can be viewed as legs of a stool with equal weight, seat atop being a cross hatch of requirements of medical school (Qatar University) and delivery organization (PHCC). Family Medicine Clerkship student-led clinic aims to deliver a balanced learner-centered platform that bridges this gap, developing clinical knowledge, skills, competence and confidence of students and delivering needs of stakeholders, within an environment and culture that introduced the initiative for the first time within the Middle East.

Summary of Work: Two clinics within 4 PHCC health centers ran in parallel, allowing equity of education and service delivery, simultaneously delivering maximum learning for students with experienced supervisors. Managers and staff organized logistics, confidentiality and protocols for smooth running of clinics. Students were briefed on assigned patients, consultation timings and supervisors availability to discuss diagnosis and management plans. Patients were communicated with personal and cultural challenges. Student, patient and supervisor feedback are collected throughout, and formal feedback with full audit of all cases seen will be carried out.

Summary of Results: Clinics were actively led by 46 final-year supervised students. Assessment presentations on index cases focused on soft skills (consultation and communication skills) important in delivering patient-centered care. Skill set balance of medical knowledge to consultation skills were strongly reported by students.

Discussion and Conclusions: Most students have done well in assessments with positive feedback from patients and supervisors. Student-led clinic visually brought three legs and seat together to deliver useful and practical outcomes.

Take-home Messages: Student-led clinics are balanced practical learning tools, balancing the learner, patient and supervisor equally producing potentially well-trained doctors of tomorrow.
#SC47: SC - Student Engagement

#SC47.2 Comparison of Dental and Medical Student Selection of Online and Physical Learning Resources: A Preliminary study (7854)

Date of Presentation: 30 August 2021  
Time of Presentation: 20:15 to 20:30

AUTHOR(S):  
Jess Grundy, The University of Manchester, UK*  
Neil Patel, The University of Manchester, UK  
Cathy Sherratt, Edge Hill University, UK

ABSTRACT:  
Background: To establish skills required for lifelong learning, dental and medical students are encouraged to study and select learning resources independently.
Summary of Work: This study utilised a quantitative and qualitative questionnaire for 470 medical and 80 dental students, before the Covid-19 pandemic, to answer: 1. Which learning resources are Year 3 dental and medical students using to support their learning? 2. What factors influence dental and medical students decision to use particular resources?
Summary of Results: All dental students who took part in the study reported using physical textbooks, mainly on recommendation of faculty, compared to medical students, who used physical textbooks least often; instead all utilising faculty-provided on-line resources. Google was also used more than daily by almost half of the dental students and at least weekly by 88% of medical students due to being quick and easy to use. Both groups reported using trade or company websites to assist with their studies.
Discussion and Conclusions: It has been reported that students do not always use recommended on-line materials and resources [1], and that medical students can ignore resources provided [2]. The results of this study suggest that medical and dental students at The University of Manchester do use faculty-recommend resources, with those provided electronically being used by all medical student respondents. Search engines such as Google were used extensively, mainly due to ease and speed of use.
Take-home Messages: Year 3 medical and dental students at the University of Manchester report a high level of engagement with faculty recommended resources. There was a high use of Google, and a higher than expected frequency of use of trade websites, warranting further study into commercial websites.
#SC47: SC - Student Engagement

#SC47.3 A MedEd research community co-built by students and faculty members (8935)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:30 to 20:45

**AUTHOR(S):**  
Irma Elisa Eraña Rojas, Tecnologico de Monterrey, School of Medicine and Health Sciences, Mexico*  
Mildred Lopez-Cabrera, Tecnologico de Monterrey, Mexico

**ABSTRACT:**

**Background:** When students and faculty members co-construct a learning community (LC), bonds are strengthened, perspectives broadened, and the learning experience is boosted. A medical education (MedEd) research LC heightens learners understanding of the curriculum, faculty development, and educational technology. Members benefit from each other, fostering continued growth. This work aimed to build a LC of students and faculty focused on improving the quality of MedEd.

**Summary of Work:** A workshop was designed for students and faculty interested in MedEd research. The project-based 10-hour workshop balanced the theory and practice required when developing a research paper. The capacity was limited to 53 participants, distributed in clusters formed by a senior faculty, a junior faculty, two preclinical students, and a senior clinical student. In the end, each cluster presented their project and received feedback from the LC.

**Summary of Results:** In a relatively short time, students had their first experience in research and the projects sparked their interest in the behind-the-scenes activities for learning environments. Motivated on completing a publication, junior faculty got mentorship on their first educational research project. Five junior faculty members started new research projects with peers that did not enrol in the workshop and shared what they had learned. Senior faculty shared their expertise and promoted scholarship. Thirteen clusters continued to meet after the workshop finished, and nine of them presented their projects in an international conference. 61.5% were submitted for publication, three have been published, two are under review, and three were rejected but are working on resubmitting.

**Discussion and Conclusions:** The LC interest in working towards improving MedEd guided the mood of the interaction. Constructive and timely feedback contributed to enhancing the learning experience. To allow the participation of more students, some faculty members offered to guide two projects. Even if it seemed feasible, it affected the time they had to monitor and provide feedback therefore their projects lagged. Future studies should analyse the endurance and impact on the LC furthering collaborations.

**Take-home Messages:** Students participation in MedEd research broadens their perspective of the science behind it. Bonds on the LC surpass the workshop, motivating the development of fresh project ideas and new collaborations between clusters.
ABSTRACT:

Background: For many years, Brazilian medical students have understood their role in medical education as serving on medical school committees and contributing to the establishment of educational policy statements. They did not perceive their engagement as students in improving learning and participating in education quality assurance and enhancement processes. Brazilian medical schools programs prioritize social accountability, teamwork, and an outcome-based education model. These priorities suggest that current and future generations of educators and students should be aware and involved in this complex educational process. Teachers can find specific educational training opportunities; for the most part, students cannot. As a result, it was created an Student as educator development program to help develop medical education knowledge and skills for medical students at an early stage.

Summary of Work: The student as educator development program at the University of Campinas was an elective course offered in 2020 as a series of five workshops held weekly, co-created with faculty members and medical students addressing the following themes: teaching and learning theories, roles of the medical teacher, curriculum development, management/leadership skills and assessment. Following a short theoretical introduction of each theme, a problem-focused learning strategy is used. Students are encouraged to work in small groups on specific teaching and learning challenges (e.g. changing a curriculum). Participants share their reflections, living the student as educator experience and thinking about how they can engage more effectively in their educational process.

Summary of Results: In total 42 students from have participated. A post-workshop survey, completed by 37 participants, indicated that students valued the initiative. A retrospective pre-post questionnaire revealed that students gave higher importance to learning medical education after participating in the initiative. It also revealed an increase in their acquisition of knowledge and skills related to the workshop themes.

Discussion and Conclusions: Developing students to become involved in medical education can be an important strategy for empowering student engagement, promoting new partnerships aiming for medical education enhancement, and creating a sustainable workforce of educators.

Take-home Messages: Student as educator experiences can be an early step in enhancing their effectiveness throughout the educational continuum; they can also help spark interest in a medical education career.
#SC47: SC - Student Engagement

**#SC47.5 Learning with patients: What learning mechanisms are triggered when students design audiovisual patient information in collaboration with patients?**

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 21:00 to 21:15

**AUTHOR(S):**  
Charlotte Eijkelboom, UMC Utrecht, The Netherlands*  
Melanie Kalee, UMC Utrecht, The Netherlands  
Renske de Kleijn, UMC Utrecht, The Netherlands  
Roos de Jonge, UMC Utrecht, The Netherlands  
Marieke van der Schaaf, UMC Utrecht, The Netherlands  
Joost Frenkel, UMC Utrecht, The Netherlands

**ABSTRACT:**  
**Background:** Patient involvement in medical education can help students become more patient-centered. To successfully develop and implement meaningful education where students learn with patients, we need to know how patient involvement contributes to students patient-centeredness. We studied how medical students learn during a project-based course, in which they designed audiovisual patient information in collaboration with patients and communication students.  
**Summary of Work:** In this qualitative study, we used a realist approach to answer: How are learning mechanisms triggered by elements of a project-based-learning course where patients actively participate? Twelve sixth year medical students were individually interviewed after they completed the course. Data were analyzed according to the principles of qualitative template analysis.  
**Summary of Results:** Four learning mechanisms were found: Challenging assumptions about the information need, Raising awareness of the origin of the information need, Taking the patients perspective and Analyzing language. These learning mechanisms were triggered by three intervention elements: (1) making a tangible product, the knowledge clip, and (2) by doing this in collaboration with patients, and (3) in collaboration with communication students. Students experienced a real-life context and considered the patients knowledge legitimate. You are truly focused on the patient, while, during the bachelor, youre more focused on theory and books. During your internship youre obviously focused on patients, but now you… you really need to place yourself in the patients shoes, and.. as came up with the communication student: how do you communicate well? Yes, you can explain things in a medical way, but then the patient still doesnt understand. So, I think thats useful, yes  
**Discussion and Conclusions:** Collaborating with patients helped students to recognize and understand patients perspectives. On top of that, working on an authentic task stimulated students to move beyond just understanding the perspective. Students had to apply their understanding of the patients perspectives in making the knowledge clip, which made them analyze their language and the effect their language has on others.  
**Take-home Messages:** Our findings show the relevance and importance of involving patients in authentic teaching assignments, where students can directly apply what they learned from taking a patients perspective.
#SC47: SC - Student Engagement

#SC47.6 SCMED: Evolution of a national network of Student-led Committees on Medical Education Development in Iran (9178)

Date of Presentation: 30 August 2021
Time of Presentation: 21:15 to 21:30

AUTHOR(S):
Mehrdad Heravi, Zahedan University of Medical Sciences, Iran*
 Parsa Panahi, Iran University of Medical Sciences, Iran
 Omid Kheiry Avarvand, Ahvaz Jundishapur University of Medical Sciences, Iran
 Amirhossein Akbarzadeh, Tabriz University of Medical Sciences, Iran
 Azim Mirzazadeh, Tehran University of Medical Sciences, Iran

ABSTRACT:
Background: Student engagement has long been a challenging topic in medical education worldwide. Although there are some student associations where medical education issues are addressed, the need for a committee that students can apply their knowledge of medical education was necessary in Iran. Here, we will describe the evolution of a student-led committee named SCMED (Student Committee on Medical Education Development) in Iran where we tried to provide students with a chance to not only study but also to be involved in medical education research and development in their institutions.

Summary of Work: During this program, medical sciences universities were asked to establish SCMED in their Educational Development Centers (EDC). These local committees have also joined a network called National Network of Student-led Committees on Medical Education Development (NN-SCMED), under the supervision of the EDC of the Ministry of Health & Medical Education of Iran. Local delegates were provided with training courses like Basics in Medical Education, scholarship and leadership in medical education and writing educational innovative ideas tutorials by NN-SCMED. These delegates then had the opportunity to apply their knowledge and collaborate with local authorities to address educational challenges. NN-SCMED was also given a chance to hold the student section of Iranian Conference on Health Professions Education (ICHPE) 2019 and 2020 were it provided training workshops, symposiums and the Student Festival of Innovative Ideas in Medical Education Development (SFIMED).

Summary of Results: We have collected and analyzed different types of data such as number of local committees, student enrollments in training programs, innovative ideas received and local workshops by trained delegates between 2018 and 2020.

Discussion and Conclusions: Providing students solely with materials and courses hoping to be effective in forming future educational leaders will be unfruitful unless there is a chance for them to engage in medical education issues and story of SCMED is the example of an effort to move one step forward to solve this problem in our country.

Take-home Messages: Tell me and I forget, teach me and I may remember, involve me and I learn.
We Are Medics – Representing A New Era for Online Widening Access Initiatives (9506)

Date of Presentation: 30 August 2021
Time of Presentation: 20:00 to 20:15

AUTHOR(S):
Halimah Khali, College of Medical and Dental Sciences, University of Birmingham, UK*
Vaibhi Dua, College of Medical and Dental Sciences, University of Birmingham, UK
Kirsty Morrison, College of Medical and Dental Sciences, University of Birmingham, UK
Pratyusha Saha, College of Medical and Dental Sciences, University of Birmingham, UK
Souradip Mookerjee, College of Medical and Dental Sciences, University of Birmingham, UK

ABSTRACT:
Background: The COVID-19 pandemic presented unique challenges to medical school applicants; from cancellation of work experiences, to changes in the format of admissions tests and the closure of schools. Young people found themselves less able to access support from their career advisors; with students from groups historically under-represented in medical school cohorts particularly affected.
To address these challenges, we launched a new widening access Instagram initiative on 18th March 2020: ‘We Are Medics’ (https://www.instagram.com/wearemedics/) providing free support designed to widen access to Medicine and promote diversity.

Summary of Work: Through Instagram, we provide high-quality support for young people navigating the Medicine admissions process in the form of blogs, videos and livestreams. In recognition of cancelled work experience, ‘Speciality Saturdays’ were launched to showcase medical or surgical specialties weekly. Journal clubs, delivered as interactive Instagram livestream sessions, have provided opportunities for super-curricular learning. Our widely accessible, and engaging ‘Interview Crash Course’ designed to support young people preparing for their medical school interviews, has received over 18,000 views. Hosted on Instagram, approximately 100 young people tuned into each live episode of the 7-hour long course.

Summary of Results: ‘We Are Medics’ has grown to become the most popular widening access initiative on Instagram with over 10,000 followers, over 120,000 video views and an approximate average of 130,000 weekly impressions. Alongside maintaining an active social media presence, we have launched a series of eBooks amassing over 48,000 downloads thus far, with our ‘Ultimate UCAT Guide’ reaching over 12,000 downloads. Based on recent UCAT data, we estimate that this resource was used by more than 1 in 3 UCAT test-takers in 2020.

Discussion and Conclusions: We are proud to be leading the way in online, student-led widening access. What began as a response to the COVID-19 pandemic has evolved into a successful near-peer educational initiative that is providing knowledge and confidence to tomorrow’s doctors, today.
Take-home Messages: ‘We Are Medics’ demonstrates that social media used appropriately, can be an impactful tool for medical education. Widening participation efforts benefit widely from free, open-access digital outreach using novel approaches to address ‘geographical cold-spots’.
#SC48: SC - Widening Access to Medicine

#SC48.2 New Insights into Widening Access in Medical School Admissions (8188)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:15 to 20:30

**AUTHOR(S):**  
Fiona Patterson, Work Psychology Group, UK*  
Elizabeth Hughes, Health Education England, UK  
Charlotte Flaxman, Work Psychology Group, UK  
Jordan Buxton, Work Psychology Group, UK

**ABSTRACT:**

**Background:** In 2016, five new Medical Schools were opened across England, as part of the government’s plan to increase the number of medical students by 25% and ultimately, increase the number of UK trained doctors. These new Schools were asked to address objectives regarding widening access and workforce shortages through using more innovative approaches to selection and recruitment and seeking to attract and recruit a greater diversity of students.

**Summary of Work:** A qualitative methodology (including a rapid literature review) focused upon senior stakeholder interviews (n=11) with Medical School Deans and policy makers from the Office for Students, the Medical Schools Council and Health Education England. Outputs were used to develop a two-part, mixed-methods, longitudinal evaluation framework to support evaluation activities of the new Medical Schools approaches against the objectives set out regarding widening access.

**Summary of Results:** Interview data was analysed using template analysis (King, 1998), with seven key factors identified as important in ensuring the success of the widening access aims, including; (1) Approaches to outreach and attraction (including formal and informal activities), (2) Adjustment to selection methods and contextualised offers, (3) Institutional culture, (4) Leadership, (5) Educational initiatives for staff and students, (6) Institutional support for non-traditional students, and (7) Early educational placements for shortage specialties.

**Discussion and Conclusions:** Specific details of the evaluation framework will be presented, along with an overview of innovations and the mediating factors identified as important for success to address widening access. Practical implications and future recommendations in how to innovate in admissions processes to enhance widening access will be discussed.

**Take-home Messages:** Huge investment has gone into launching the new Medical Schools to support the ongoing widening access and workforce shortages agenda. Our results suggest that significant innovations have taken place at the new Medical Schools in relation to outreach and attraction, selection and recruitment and the induction/ongoing support available for non-traditional students. Our findings offer important new learnings for all Medical Schools (both in the UK and internationally) to continue to progress this important agenda.
#SC48: SC - Widening Access to Medicine

**#SC48.3** A cross-sectional questionnaire-based analysis of the motivational factors which influence students of diverse backgrounds to study medicine - Aston Medical School, UK (7629)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:30 to 20:45

**AUTHOR(S):**  
Shagaf Bakour, Aston Medical School, Aston University, Birmingham, UK*

**ABSTRACT:**  
**Background:** Historically, medical students have come predominantly from wealthy backgrounds; more females than males. To widen access to medicine from diverse social backgrounds, medical schools established carefully planned Widening Participating WP programmes. The career choice decision students make in their lives is a pivotal one. For medical schools, the data around what motivates students from different backgrounds to choose to study medicine is important to refine their selection process and admit the right students applying to medicine for the right reasons.

**Summary of Work:** At AMS 20 local students applied to study medicine via the 2018 widening participation route (WPS) and 49 students via the international route (IS). Research Questions: 2. What are the motivating factors influencing students to study medicine? 3. Do motivating factors differ for students of different backgrounds? Design: A quantitative cross-sectional questionnaire-based analysis. Methods: Questionnaires were disseminated to students electronically addressing their demographics including age, gender and ethnicity; plus the motivating factors to study medicine.

**Summary of Results:** Literature review identified six main motivating factors: Altruistic motives, desire of helping people, Intellectual satisfaction, Interest in science, Curing and preventing disease, Family/friends encouragement. Financial stability and employability, Prestige and great social status.

**Discussion and Conclusions:** Among the 6 motivating factors, financial stability and employability was the only one that showed: 1. a statistically significant difference (p<0.05) between the responses of younger students (median value= 2) and the older students (median value= 3), Mann-Whitney U= 42.5. 2. and a statistically significant difference (p<0.05) between the responses of WPS (mean value= 1.58) and IS (mean value= 2.2), t(30)= 2.06. For all other motivating factors, no statistically significant differences were observed among any of the studied groups.

**Take-home Messages:** To my knowledge, no previous study has examined motivational factors to study medicine in similar set up. When asked about motivating factors to study medicine, older and international medical students were significantly more motivated by financial stability and employability; compared to the younger and WP students respectively.
#SC48: SC - Widening Access to Medicine

#SC48.4 Contextualise everyone: How using relative attainment for selection could change medical school admissions (8440)

Date of Presentation: 30 August 2021  
Time of Presentation: 20:45 to 21:00

AUTHOR(S):  
Philip Chan, Kent and Medway Medical School, UK*  
Anna Anthony, Higher Education Access Tracker, UK  
Sharon Smith, Higher Education Access Tracker, UK  
Chris Holland, Kent and Medway Medical School, UK

ABSTRACT:  
Background: This study examines the effects of a novel method of contextualising medical school applications on widening participation (WP). There are always more medical school applicants than places, The largest reduction of applicant numbers in UK selection processes is shortlisting before interview, which differs between medical schools, but is usually based on metrics related to academic achievement. In most schools, some applicants are pre-identified as WP and are shortlisted according to less stringent academic attainment criteria.

Summary of Work: We studied 663 school leaver applicants to a single UK medical school, who met minimum requirements. They were all attending secondary school in England, with data from their public exams taken 2 years pre-application (GCSE) and recent admissions test (UCAT). Two shortlists were constructed, selecting 162 applicants for interview; one based on UCAT, and the other on contextualised GCSE. Applicants best 8 GCSE scores were contextualised against their schools average GCSE performance in 8 defined GCSEs (Attainment 8). A ratio of best 8/school Attainment 8 was calculated for each applicant. WP characteristics of applicants in the 2 shortlists was defined as quintile 1 or 2 in any of the POLAR4, Index of Multiple Deprivation (IMD) or Income Deprivation affecting Children Index (IDACI) databases, or categories 4 and 5 of the (CACI) ACORN database.

Summary of Results: A UCAT threshold of 2610 shortlisted 165 applicants. The contextual metric shortlisted 162 applicants, with a ratio >1.25 (around 40% above school average). Only 42 applicants appeared on both shortlists. There was a significant difference in the widening participation characteristics of the two shortlists; 51.2% by contextualisation and 29.7% by UCAT (Chisquare p<0.0001). The UCAT shortlist corresponds to the national average for WP admissions to medical school.

Discussion and Conclusions: Conventionally, contextual admissions identify individuals with certain criteria for preferential treatment but has led to slow progress in widening participation. Using academic metrics based on relative, rather than absolute grade attainment can produce a step change in selection of WP applicants, which more nearly represents their proportion in the population.

Take-home Messages: Changing the selection rules for everyone is more effective in widening participation than identifying and favouring a group of applicants with particular characteristics.
ABSTRACT:

Background: Concerns exist that student diversity in health professions education (HPE) is affected by selection procedures. This multi-site study examined the admission chances of different underrepresented subgroups to HPE programs that use various combinations of selection instruments, and their performance on these instruments.

Summary of Work: In 2020, 59% of the applicants (N=1935) to five Dutch HPE undergraduate programs (three Medicine, one Pharmacy, and one Technical Medicine) completed a demographics survey. Being underrepresented was defined as being male (30%), migration background applicant (38%), first-generation university applicant (25%), or non-direct school-leaver (20%). Chance of admission was estimated using multilevel logistic regression. Performance on four selection instruments - pre-university grade point average (pu-GPA, N=5 sites), trial-studying test (TST, N=3), curriculum vitae (CV, N=3), and biomedical knowledge test (BMKT, N=2) - was estimated with multilevel linear regressions.

Summary of Results: Migration background applicants (51% versus 54%, odds ratio [OR]=0.78) and non-direct school-leavers (45% versus 55%, OR=0.69) had significant smaller chances of admission than their majority counterparts. Especially non-direct school-leavers had smaller chances of admission when they had a migration background (41% versus 49%, OR=0.55). Female applicants had smaller odds when they were first-generation university applicants (49% versus 56%), unlike male applicants (55% versus 50%, OR=1.96). Migration background applicants scored significantly lower on TSTs than non-migration background applicants (β =-0.22). Migration background applicants performed particularly low on TSTs when they were non-direct school-leavers (β =-0.25). Non-direct school-leavers performed significantly lower on CV (β =-0.22) and pu-GPA (β =-0.49), but higher on BMKT (β =0.23). Male applicants performed better on TSTs when they were first-generation university applicants (β =0.43). Of note, the chances of being admitted (β =1.43) as well as the scores of the different selection instruments (β: 0.04-0.30) demonstrated a main effect for program, showing that admission to individual programs did not completely overlap with the overall findings.

Discussion and Conclusions: Overall, various underrepresented subgroups were admitted less often. However, not all instruments demonstrated negative effects for all groups, and variability exists between programs. These data contribute to a better design of selection instruments that retain student diversity.

Take-home Messages: Selection can, but doesn’t have to negatively impact student diversity in HPE. Effects depend on the composition of the selection procedure.
#SC48: SC - Widening Access to Medicine

#SC48.6  State school students report less support with applications to medical school (9459)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 21:15 to 21:30

**AUTHOR(S):**  
Luke Zhu, University of Glasgow, UK*  
Jun Yu Chen, University of Glasgow, UK  
Wentin Chen, University of Birmingham, UK

**ABSTRACT:**

**Background:** It has long been suggested that doctors should reflect the social and ethnic diversities of the communities they serve. In March 2020, the coronavirus pandemic and subsequent lockdown led to school closures. This reduced traditional routes of information and resources available to aspiring medical students.

**Summary of Work:** In response to this, we organised a free virtual conference in August 2020. We invited inspiring speakers as well as organisations involved in the medical school admission process. These included Dr Enam Haque, Professor Dame Parveen Kumar, and organisations including the MSC, GMC, UCAT and BMAT. We conducted an anonymous research questionnaire to better understand the concerns of a group of prospective applicants to medicine. We were interested in the differences between students from state and grammar or independent schools.

**Summary of Results:** There were 1,459 attendees at the conference with 1,271 responses to the questionnaire. Attendees mainly attended state schools (62%) and from a BAME background (63%), with 26.2% from the lowest 2 POLAR 4 quintiles. Students who attend state schools compared to grammar or independent schools felt significantly less supported by their schools in applying to medicine (mean difference (MD): -0.326, p<0.0001), and less supported during their medicine applications due to COVID19 (MD: -0.161, p=0.015). Students at grammar and independent schools also reported a better understanding of UCAT changes during the 2020-21 application cycle (MD: 0.23, p<0.002) and were more likely to plan to attend paid for UCAT preparation sessions (MD: 0.07, p<0.001). The students attending grammar and independent schools also reported they were more likely to receive interview preparation from their school (MD: 0.195, p<0.0001), from their friends or family (MD: 0.115, p<0.0001), and were more likely to have plans to receive paid-for interview preparation (MD: 0.09, p<0.0001).

**Discussion and Conclusions:** The coronavirus pandemic may have a lasting impact on the recruitment of medical students in the coming years. Our study demonstrates significant differences between the student reported university application support offered by non-selective state schools compared with selective state or independent schools.

**Take-home Messages:** This large study reports that students felt more supported with the medical school application process in grammar and independent schools compared to state schools.
#W49: Workshop 49

#W49  Digital Health Literacy - an Essential Competency in the Context of the COVID-19 Pandemic (9509)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:00 to 21:30

**PRESENTER(S):**  
Stella Goeschl, European Medical Students Association, Austria  
Philippa Lantwin, European Medical Students Association, Germany  
Felix Machleid, Imperial College London, UK  
Lina Mosch, Charité – Universitätsmedizin Berlin, Germany  
Irem Aktar, European Medical Students Association, Turkey

**ABSTRACT:**

**Background:** The COVID-19 pandemic poses an unprecedented challenge for healthcare systems with an increasing demand for digital health services. Thus, the pandemic is a window of opportunity to advance digitalisation and innovation in healthcare. Digital tools in the fight against COVID-19 such as mhealth solutions, contact tracing apps, telemedical services and video consulting have shown a great potential to enhance efficiency and increase patient safety. There is a need for a digital health-ready workforce, however there are significant gaps in education and training. Professional organisations and networks have identified different ways to fill the gaps through accreditation frameworks, cross-disciplinary training and platforms for best practice exchange. The European Medical Students Association (EMSA) has initiated a number of projects to address this need including surveys, toolkits and curriculum formats. In this workshop, we want to discuss lessons learned from the COVID-19 pandemic for digital health and envision the future of healthcare and how these aspects can be reflected in medical education, while presenting the students perspective on the topic.

**Who Should Attend:** All those interested in digital health and healthcare technologies implementation in medical curricula. Both students and academic personnel are welcome to join our session to take part in a fruitful discussion.

**Structure of Workshop:**

1. Introduction to implications of the COVID-19 pandemic for healthcare systems and implementation of digital health solutions.  
2. Presentation of evidence related to the medical students’ perspective on digital health in the pandemic context.  
3. Discussion: Challenges and changes in digital health - which needs of the health workforce highlighted by the pandemic should be reflected in the curriculum?  
5. Presentation of EMSA’s Digital Health Toolkit and Survey on Digital Health Literacy.  
6. Interactive small group work on the identified needs and challenges and identification of possible solutions to address these issues.  
7. Conclusions and an outlook on future work.

**Intended Outcomes:** - To learn about the implications of the COVID-19 pandemic for the digitalisation of health.  
- To understand the expectations and demands placed on healthcare workers and the need to address these through medical education.  
- To share best practices on integrating digital health into medical education across different countries.

**Level:** Introductory
#W50: Workshop 50

#W50 Use of Generalizability Theory in Designing and Analyzing OSCEs and Performance-based Tests (9396)

Date of Presentation: 30 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
David Swanson, American Board of Medical Specialties, USA / University of Melbourne, Queensland University, Australia

ABSTRACT:
Background: Performance-based testing methods (eg, OSCEs, MMIs, oral exams, workplace-based assessments) are commonly used in health professions education. Because these methods involve multiple sources of measurement error (eg, examiner stringency/agreement, station/case/task difficulty, content specificity), classical reliability theory does not furnish the tools needed to investigate their measurement characteristics. Generalizability theory (g-theory) provides the necessary tools for estimation of the reproducibility (reliability, precision) of scores and for evaluating the impact of alternate approaches to test design and administration.

Who Should Attend: The intended audience is health professions faculty and others (eg, members of Royal Colleges developing assessments) involved in designing and implementing assessment procedures. The workshop does not assume any familiarity with g-theory or classical reliability theory, though it is useful for participants to be comfortable with analysis of variance.

Structure of Workshop: The workshop will be structured in an interactive, seminar-style format, starting with a conceptual overview of generalizability theory as applied to performance-based tests, including both OSCEs and oral exams. The basics of generalizability theory will then be covered, starting with a simple example in which students are rated by faculty, working to more complicated assessments like multi-circuit OSCEs. Emphasis will be on the conceptual framework that generalizability theory provides for thinking about assessment situations, not on the statistics involved. Participants will be invited to describe assessments in which they are currently engaged and how generalizability theory would be used to analyze and improve those assessments. Each participant will receive a 25-page handout illustrating applications of generalizability theory for assessment methods commonly used in the health professions. The handout also provides an annotated bibliography for those who want to learn more about generalizability theory and discusses software available for doing the analysis work.

Intended Outcomes: What will they gain from participating?
1. Identify advantages of g-theory over classical test theory
2. View OSCEs and performance-based assessment methods from a g-theory perspective
3. Identify procedures/software for conducting generalizability analyses
4. Interpret indices of reproducibility (generalizability coefficients and standard errors of measurement) resulting from generalizability analyses and use them in designing assessments

Level: Intermediate
#W51: Workshop 51

#W51  ‘Once upon a time’... Using storytelling to capture one's research in an abstract or synopsis [Joint submission from the AMEE FACDEV and Research Committees] (8660)

Date of Presentation: 30 August 2021
Time of Presentation: 20:00 to 21:30

PRESENTER(S):
Susan van Schalkwyk, Stellenbosch University, South Africa
Diana Dolmans, Maastricht University, The Netherlands
Debbie Jaarsma, University Medical Center Groningen, The Netherlands
Ayelet Kuper, The Wilson Centre, University of Toronto, Canada
Pat O’Sullivan, University of California, San Francisco, USA
Yvonne Steinert, McGill University, Canada

ABSTRACT:
Background: While the foci of AMEE committees differ, the intention across committees is to strengthen the field of health professions education and scholarship. Both the Faculty Development and Research Committees offer grants to enable scholars, including emerging scholars, in the field to conduct research, and annually host calls for research submissions. Feedback from grant reviewers typically comment on the potential importance of the envisaged work and propose ways to optimize the work. Similarly, abstract submissions for research papers reflect opportunities to improve on focus, structure and argument. In this workshop, members of these two committees will join attendees to explore how we might best present our research stories within the word limits imposed by grant application and abstract guidelines. Using storytelling as a heuristic, participants will work with a tool designed to tease out the essence of a particular study in a clear, coherent, and succinct manner. During the workshop, participants will have the opportunity to craft their own abstract or research synopsis and to receive feedback to enable further refinement as needed.

Who Should Attend: Emerging researchers who have completed at least one research project. Experienced researchers are also welcome to join and try out the innovative storytelling teaching tool.

Structure of Workshop:
• Introductions and overview of the workshop
  • Setting the scene/Rationale: Why is it important to be able to concisely synthesise the essence of my research?
  • Group session: Why do submissions get rejected?
  • Group session: Thoughts on good writing: coherence, rhetorical devices, constructing arguments for the relevance and rigour of your findings or claims, minding the gap.
• Guided individual activity: the ‘once upon a time’ story which includes:
  o Once upon a time researchers believed that ...
  o But I thought that maybe ...
  o So what I did was ...
  o And what I found is ...
  o And this will change the way that we ...
• Group session: sharing stories and group feedback
• Wrap up and reflection

Intended Outcomes: Participants will be able to:
• Identify elements central to describing their research
• Employ a framework to guide the development of an abstract or research synopsis

Level: intermediate
**ABSTRACT:**

**Background:** Recent interest in the United States in addressing Lesbian, Gay, Bisexual, Transgender (LGBT) healthcare concerns, particularly obstacles faced by transgender individuals, has resulted in newly developed programming to address these concerns. Training students, faculty and simulated patients on the nuances of the LGBT patient, with specific focus on the transgender patient, is critical if outcomes for this population are to improve. This programming also addresses anxiety of healthcare practitioners when interacting with members of a marginalized community that frequently stems from inadequate training and infrequent direct experience with patients from that community. In this workshop, the presenters will cover fundamentals every healthcare professional needs to know about serving LGBT patients: inclusivity, rapport, effectively communicating without creating anxiety or offense, language to avoid, and other practical knowledge. The workshop will cover realities faced by the transgender patient and will educate about fluidity of gender identification as well provide an overview of various surgeries available to transgender individuals. Finally, this workshop will explore ways to successfully train a variety of standardized patients (cis- and trans- gendered) to effectively portray LGBT individuals in simulation encounters as a critical part of medical training, as well as ways to implement training in more advanced medical education settings such as forensic examiner certification requirements.

**Who Should Attend:** Anyone interested in learning information and data regarding the transgender patient as well as those interested in implementing programming at their own institutions.

**Structure of Workshop:**
1. Introduction
2. LGBT Overview
3. Data Review
4. Interactive Segments
5. Questions/Answers/Discussion
6. Conclusion

**Intended Outcomes:** At the conclusion of this workshop, attendees will:
1. Gain knowledge regarding specifics of the LGBT community
2. Understand realities that LGBT patients face when interacting with the healthcare community and reasons why these interactions cause anxiety in this population
3. Learn methods for informed communication with the LGBT community that are both inclusive and effective
4. Gain understanding of ways in which critical elements of successful communication with the LGBT community can be implemented into a wide variety of simulated activities, and how skills developed to communicate effectively with members of the LGBT community are universal to every patient

**Level:** Beginner to Advanced
#FR4: Fringe 4

#FR4.1 Challenging stereotypes and widening access to Academic Surgery Careers (9818)

**Date of Presentation:** 30 August 2021  
**Time of Presentation:** 20:00 to 20:20

**AUTHOR(S):**  
Abirami Kathiravelupillai, Brighton and Sussex Medical School, UK*  
Sinead Josephine Fanning, University Hospitals Sussex NHS Trust, UK  
Alyss Robinson, University Hospitals Sussex NHS Trust, UK  
Shameen Jaunoo, University Hospitals Sussex NHS Trust, UK

**ABSTRACT:**

**Background:** Introduction The clinical academic training pathway in the UK is offering an increasing number of surgically themed roles. However, due to their competitive nature early engagement and development of key research skills is required. Despite this, understanding of research and available academic opportunities is variable. The aim of this study was to capture the understanding and exposure to clinical academia in surgery amongst UK medical students. Methods We surveyed 100 medical students prior to them attending the inaugural Academic Surgery Virtual Conference based at Brighton and Sussex Medical school. Participants were sent a google survey via email the day prior to attending the conference to be completed anonymously. Results 52 students completed the pre-conference survey, of which 55.8% were female, 42.3% male, 1.9% preferred not to disclose gender. The mean ages for females were 21.4 and for males 23.5. An even distribution of students from different year groups responded, from 4 deaneries encompassing different UK medical schools. All participants had an additional degree with a BSc being the most common (n=36, 69.2 %). Overall, 61.5% (n=38) of students expressed an interest in an academic surgical career. Only 52.7% (n=30) had previous experience in research, and 36.5% (n=19) knew how to get involved in surgical research. The majority of students had not received any teaching in medical school on academic surgery (n=38, 73.1%). Conclusion This survey has identified that amongst a cohort of medical students interested in academic surgery, few had research experience or knew how to get involved in surgical research. Medical schools should provide earlier education on clinical academic pathways and local surgical research opportunities to meet the rising demand for clinical academics in surgery. All in all, the Fringe presentation will teach participants to positively challenge stereotypes and widen access for competitive careers such as Academic Surgery.
ABSTRACT:
Background: Real time is the new temporal standard. Enormous amounts of energy are expended for everything to be streaming live, so that we are not stranded in the past, in history, in the archive, where we might gather dust (or actually learn something). If you dare lift your eyes from the screen even for a moment, you might miss the tweet or the post or the update that promises to change your life. [...] Everything is in flux. And yet each day feels the same. These days, to adapt Heraclitus, you never step in the same live stream twice. - Dominic Pettman (2016). Infinite Distraction: Paying Attention to Social Media. Polity Press Without the ability to direct our attention where we will, we become more receptive to those who would direct our attention where they will. [...] While animals certainly have memory and the ability to learn, human beings are thought to be the only creatures who can deliberately recall something not cued by the environment. But we do this only in those stretches of time when the environment is not making urgent claims on our attention. Matthew B. Crawford (2015). The World Beyond Your Head: On becoming an individual in an age of distraction. Farrar, Staus and Giroux
# Short Communications (On Demand)

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ABSTRACT:
Background: A comprehensive clinical skills assessment (CSA) including hybrid and multimodality simulation will be newly implemented to Korean Medical Licensing Examination (KMLE) in 2021. To respond to these changes, our medical college developed and implemented a pilot formative CSA using hybrid and multimodality simulation to clerkship students in 2019. The aim of this study was to explore medical students’ perception and opinion on the assessment.

Summary of Work: During the internal medicine clerkship in 2019, 3rd-year medical students participated in a pilot formative CSA using hybrid and multimodality simulation sessions and had 1:1 verbal feedback. An anonymous survey was conducted to the students after the clerkship. The quantitative data of the survey were analyzed as descriptive statistics, and the descriptive data were analyzed using the theme analysis method. Six students also participated in a focus group interview. Two researchers independently conducted thematic analyses with the transcript and the field note and derived themes.

Summary of Results: Of a total 97 students, 78 (80%) participated in the survey. Overall satisfaction of the assessment was positive [very satisfactory (7.8%), satisfactory (68.8%), neutral (19.5%), and dissatisfactory (3.9%)]. Fifty-five (70.5%) students preferred the new formative assessment. The themes derived by the qualitative analyses were as follows: 1) increased sense of realism, 2) relevance to clerkship, 3) individual feedback, 4) questioning of new assessment, 5) difficulty in time management, 6) limited clinical usefulness. Enhancement of pre-course preparation, refinement of scenario and setting, and effective feedback were suggested as the solutions.

Discussion and Conclusions: Formative assessments using the hybrid and multimodality simulation could provide clerkship students with a complementary learning experience. Using the scenarios relevant to the clerkship and providing an effective 1:1 feedback could improve the clinical usefulness.

Take-home Messages: In order to enhance the educational effectiveness of hybrid and multimodality simulation, it is necessary to implement pre-course preparation using the best practice examples, increase in the sense of realism with clinically relevant scenarios and careful settings, and valuable feedback by facilitators and standardized patients.
#SCOD1.1: SCOD - Assessment - Clinical

# SCOD1.1.2 Addressing OSCE Examiner Variability: A Video-Based Benchmarking Approach (8682)

**AUTHOR(S):**
Rebecca Edwards, Keele University, UK*
Peter Yeates, Keele University, UK
Janet Lefroy, Keele University, UK
Robert McKinley, Keele University, UK

**ABSTRACT:**

**Background:** Observational assessment styles are vital to clinical education for monitoring and certifying clinical competency. OSCEs are a common assessment mode, advocated for their structured yet flexible nature, and purported objectivity and efficiency. Despite decades of research, validity and reliability issues pertaining to examiner variability remain. OSCE examiner training seeks to address judgemental variability, with limited success. Conversely, contrast effects demonstrate the influence of a preceding candidates OSCE performance on subsequent performance judgements. Therefore, examiner training may lack the specificity and proximity (i.e. time delay) to reduce variability. Harnessing this notion, we developed and investigated an intervention, termed Video-Based Benchmarking (VBB). Here, examiners judge and receive feedback on station-specific OSCE performances shortly before scoring the target OSCE station, enabling comparative processes and performance expectation adjustment.

**Summary of Work:** Using realist evaluation methods, we assessed how, why, and under what circumstances VBB may influence OSCE examiner scoring; and how we may develop VBB. We developed an initial programme theory from literature review and researchers assessment experience. We interviewed 16 OSCE examiners, where participants engaged with VBB and discussed their experience. We analysed interviews to identify Context-Mechanism-Outcome configurations (CMOcs) to test and modify our theory.

**Summary of Results:** Preliminary analyses suggest VBBs increased efficacy when examiners view and score the benchmark before receiving assigned scores (C), triggering reflective processes (M) to produce desirable outcomes. Scores given before viewing the benchmark (C) may reduce impact by leading to passive agreement (M), and little/no adjustment to internal scoring rubrics. Other identified procedural and examiner factors may influence which mechanisms are triggered, which may impact the efficacy of VBB to reduce variability.

**Discussion and Conclusions:** Various contexts and mechanisms may explain how, why, and under what circumstances VBB may influence examiner scoring. Preliminary analyses suggest that various procedural and examiner factors may influence VBBs efficacy. Procedural factors must be considered to maximise VBB efficacy, but practical factors may limit this.

**Take-home Messages:** Viewing a station-specific example OSCE performance near in time to the target station may reduce assessor variability by adjusting examiner internal scoring rubrics. Efficacy and practicality should be balanced with implementation. Follow on research will quantitatively assess VBBs impact on examiner variability.
#SCOD1.1: SCOD - Assessment - Clinical

# SCOD1.1.3 Mobile-enhanced Technology for Evaluation of Procedural Skills in the Clinical Setting (8768)

AUTHOR(S):  
Carmel Tepper, Bond University, Australia*

ABSTRACT:

Background: The evaluation of student-patient interactions in the clinical setting is a form of authentic assessment embraced by the medical education community. It is essential that medical schools are able to evidence that their graduates have attained sufficient standards in core procedural skills as indicated by their accrediting institutions graduating doctor competency frameworks. Bond University partnered with Osler Technology in the development of a clinical ePortfolio that digitally captures evidence of workplace-based assessments (WBA) including a suite of mandatory procedural skills using mobile-enhanced technology.

Summary of Work: Medical students were asked to complete ten (10) different core procedural skills on patients in any of their discipline-specific clinical placements across two years. Clinician supervisors were asked to observe the students conducting skills on patients in the clinical setting and to provide real-time feedback and evaluation online using an ePortfolio Entrustability rating scale. Performs independently but requires direct supervision was selected as an appropriate passing Entrustability rating for undergraduate medical students.

Summary of Results: 95% of students successfully completed ten procedural skills on patients in the clinical setting and received real-time feedback from observing clinicians. Faculty was able to identify the students at risk of not completing the required workplace-based assessment and was able to intervene to provide additional support. Survey data that explores the clinician experience of completing WBA digitally will be shared.

Discussion and Conclusions: Mobile-enhanced technologies are a convenient and efficient way for clinician supervisors to give real-time assessment and feedback on performance of procedural skills to students. Requiring students to conduct procedural skills on patient encouraged interaction with patients and resulted in enhanced student engagement on placement. Data captured by digital assessment can be used to remediate student performance as well as providing evidence for faculty of student skills development.

Take-home Messages: The evolution of mobile-enhanced technologies for real-time at the bedside evaluation of student clinical performance allows for efficient and convenient capturing of data that can be used to provide real-time feedback, evidence student achievement for accreditation and enhance decision-making on student progression. This technology was invaluable during the Covid crisis to evaluate and monitor our student clinical experience.
# SCOD1.1: SCOD - Assessment - Clinical

# SCOD1.1.4 Medical safety exam score and the lack of unprofessional recognition during clinical clerkship are predictive of the OSCE task sub-score upon graduation from medical school (8142)

**AUTHOR(S):**

Hiroshi Mihara, University Of Toyama, Japan*
Michikazu Sekine, University Of Toyama, Japan
Manabu Ishiki, University Of Toyama, Japan
Shinichiro Hirokawa, University Of Toyama, Japan
Hisashi Nagashima, University Of Toyama, Japan
Yuichi Adachi, University Of Toyama, Japan

**ABSTRACT:**

**Background:** The prediction of the high performance at graduation would contribute to the reform of entrance exam and curriculum. This study clarified the relationship between the score of National medical exam (NME) and Post clinical clerkship OSCE (PostCC-OSCE) (divided into clinical reasoning and medical practice), information at the entrance, course grades, and assessments during CC to establish priority endpoints for prospective studies. Study 1: NME. Study 2: PostCC-OSCE (clinical reasoning and medical practice).

**Summary of Work:** Study 1: 74 of the 76 students who entered in 2011 and graduated in 2016 with consent were included. Analysis: Sex, years from high school graduation, admission categories, scores of liberal arts, basic and clinical medicine, national CBT exam at 4th grade, assessments during CC, PostCC-OSCE (clinical reasoning), graduate exam, and NME score. Study 2: 101 of 110 students who entered in 2014 and graduated in 2019 with consent were included. PostCC-OSCE (clinical reasoning and medical practice) and graduate exam scores were also included. Medical practice tasks included vital signs, heart sound recognitions, and abdominal ultrasound exam. Pearson correlation coefficients and multiple regression analysis (MR) were applied.

**Summary of Results:** Study 1: NME score was correlated with graduate exam scores (correlation coefficient 0.783), CBT (0.589). PostCC-OSCE (clinical reasoning sub-score) was correlated with graduate exam scores (0.441), and CBT (0.396) and NME (0.355). Study 2: PostCC-OSCE (clinical reasoning sub-score) was correlated with PreCC-OSCE (0.36), external mock exam (0.32), and assessment during CC (0.32). PostCC-OSCE (medical practice sub-score) was correlated with Medical Safety subject score (0.29) and professional score during CC (0.28). MR showed the independence.

**Discussion and Conclusions:** Study 1 suggested that PostCC-OSCE (clinical reasoning), NME, gradua exam and national CBT assessed knowledge and its applying ability. Study 2 suggested that PostCC-OSCE (medical practice) might assess the attitude on attention and risk avoidance. Prospective study is needed to explore whether assessment of these attitude and intervention will lead to improved competence at graduation.

**Take-home Messages:** 1. PostCC-OSCE (clinical reasoning sub-score) measures mainly knowledge. 2. PostCC-OSCE (medical practice sub-score) might measure the attitude of attention and risk avoidance.
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ABSTRACT:
Background: As a complementary education and assessment during clerkship, our college has implemented a simulation-based performance assessment (SBPA) to 3rd year clerkship students since 2018. We have adapted a modified post-examination borderline group method (PBGM) for the SBPA. In 2020, we conducted two online standard setting workshops due to the COVID-19 crisis. The aim of this study is to evaluate feasibility of the online workshops, and to analyze the responses of the panelists.

Summary of Work: The SBPA comprised of 6 clinical performance examination (CPX) and 6 OSCE stations for procedural skills at the end of 4th year clerkship, and 9 CPX and 1 OSCE stations for procedural skills at the end of 3rd year clerkship. After examination, 12-15 experienced standard panelists have decided the cut scores through the online workshop with a modified PBGM. We have used the ZOOM as the workshop platform, and Google Spreadsheet was used for standard setting activities. On the day of the online workshop, there was a total of 3 rounds for each station, and feedback data was provided between rounds. After completing the online workshop, the opinions of the panelists were collected through a Google survey.

Summary of Results: The CPX cut scores of 4th year students ranged from 51.8 to 69.1, and the cut scores ranged from 44.5 to 70.1 in 3rd year students. In the survey, 91% and 100% of the panelists answered that they were able to fill out the rating tables according to the guidelines. The appropriateness of the cut scores that they rated and the cut scores that was finally decided were also high (91% and 87.5%, respectively). The positive response rate for feasibility of the online workshop was 100%. Time, space, and cost saving, convenience were suggested as the advantages of, while decreased attention and limited discussion time were suggested as the disadvantages of the workshop.

Discussion and Conclusions: Online SBPA standard setting workshops using a modified PBGM were feasible. Panelists responses to both the implementation methods and the results were very positive.

Take-home Messages: Online SBPA standard setting workshops using a modified PBGM are feasible and efficient.
SCOD1.1: SCOD - Assessment - Clinical

SCOD1.1.6 Designing a novel programme of national assessment for early career pharmacists: Painting a blank canvas (8815)

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ABSTRACT:
Background: In the UK, structured work-based training and assessment for early career (post-registration) pharmacists varies across sectors (community pharmacy, primary care, and hospital), geography and training provider. Increasing demands for pharmacists with enhanced clinical skills working within integrated multi-disciplinary teams across multiple settings has necessitated a review of assessment of relevant competence. The Royal Pharmaceutical Society has developed a national outcome-based curriculum for early career pharmacists which incorporates independent prescribing, with a parallel development of a new, national assessment programme.

Summary of Work: Using the principles of co-design, the stakeholder assessment group was challenged to design an innovative assessment programme, inclusive and flexible to the needs of learners and employers across all sectors and employment models (private and NHS). The group included representation from the regulator, statutory education bodies, academia, employers (all sectors), and learners. We report the key features of our assessment programme.

Summary of Results: The group had a shared philosophy, valuing programmatic design and using low-stakes formative assessments to optimise learning and decision making. The group explored a range of assessment approaches, rejecting a model of national licensing assessment, instead recognising the value of programmatic assessment. Consensus building produced an assessment strategy which uses supervised learning events to assess authentic real-life situations longitudinally, includes novel prescribing focussed entrustable professional activities, and uses digital technology to promote flexibility and inclusivity. The contemporary e-portfolio will: facilitate assessors triangulating information holistically from a variety of sources to make high-stakes decisions; support using assessment data to identify learners requiring additional support; and inform competency committee final summative sign off.

Discussion and Conclusions: The assessment group are confident the assessment programme allows robust assessment of the curriculum outcomes. The challenge for pharmacy is building a culture which values assessment for learning, including independent prescribing, and developing workforce capacity and assessment capability. Including diverse representation in the design phase supports developing an assessment programme inclusive to all work settings. A proof of concept study will test the feasibility and acceptability of the assessment programme with learners and supervisors across the different sectors to understand the spectrum of challenges.

Take-home Messages: Programmatic assessment supports learner centred flexibility as an alternative to inauthentic and cumbersome national assessment.
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ABSTRACT:
Background: Health professional education programs are responsible for equipping trainees with patient-centred competencies including providing care that respects patients values and needs. Hence, patient perspectives are crucial for enriching trainee knowledge and skill development. However, evidence of formalized patient roles in health professional trainee feedback and assessment is lacking.

Summary of Work: We searched MEDLINE, EMBASE, CINAHL, PsycINFO, ERIC, and Web of Science databases for studies that included descriptions of systems or experiences whereby patients received care from a health professional trainee in a workplace-based setting and participated in performance assessment of the trainee. We included full-text articles and conference proceedings published in English from 2009 to 2020, irrespective of study location or design.

Summary of Results: Of the 8,770 studies screened; 77 full-text articles were included. Inductive content analysis shows that aspects of patient participation in the workplace-based assessment of trainees are heterogeneous across health professions. It varies from association with trainee-related characteristics such as post-graduate year status, validating the feasibility of an assessment tool, and assessing the impact of an educational intervention (workshop or module) on trainees performance. Assessing patient satisfaction is the most common aspect of patient involvement, followed by the acquisition of patient perspectives as part of multi-source feedback or to compare with trainee self-assessment. Moreover, the majority of published experiences was conducted in North America and is found within physician-training followed by nursing trainees.

Discussion and Conclusions: Based on our analysis, patients involvement in the assessment of health professional trainees is underutilized which reflects their passive role in trainees education and learning processes. Despite some overlap, patients would not necessarily hold similar expectations of other health professional trainees owing to the differences in the nature of interactions as compared to medicine and nursing trainees.

Take-home Messages: Our scoping review points to the need for changes in the pedagogical techniques and a more inclusive approach to workplace-based assessment to ensure patient feedback of the health professional trainees who care for them are better represented.
#SCOD1.2: SCOD - Assessment - Written

# SCOD1.2.1 Assessing medical professionalism in clinical environments: What Can We Learn From Second-Year Students’ Narrative Reflection? (8488)

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ABSTRACT:
Background: Medical students capacity to define professionalism concepts can be assessed by multiple choice or essay tests. It is more challenging to assess students capacity to deeply understand and apply professionalism concepts. Reflection portfolios provide an opportunity to assess students deep understanding and application of these concepts in clinical practice. This study aimed to evaluate effectiveness of narrative reflections in assessing professionalism among second-year medical students while attending the first clinical rotations in primary healthcare settings.

Summary of Work: We conducted thematic analyses of these portfolios based on the learning objectives of the year 2 professionalism curriculum. These included professional behaviors, the 4 principles of medical ethics, empathy, confidentiality, and informed consent. Year 2 students were asked to write reflection portfolios of their experiences in their first clinical rotations in primary healthcare settings.

Summary of Results: Students reflections demonstrated understanding and application of the majority of professionalism learning objectives. Students appropriately classified professional and non-professional behaviors. Students demonstrated understanding of ethical principles as they reflected on how patients values and beliefs were incorporated into decision-making (autonomy), the importance of not causing pain or suffering (non-maleficence), providing care to vulnerable persons (beneficence), and equitable treatment of patients (justice). Students demonstrated empathy in reflecting on their responses to patients pain. Students described the informed consent process in their surgical experiences, and recognized confidentiality in how they described protecting medical records and reporting patients histories anonymously.

Discussion and Conclusions: Students portfolios provided concrete examples of students understanding and application of professionalism concepts. We believe that thematic analysis of students portfolios with an appropriate rubric is a good method to assess medical professionalism.

Take-home Messages: Narrative reflections from daily practices in the hospital were a good method to assess medical professionalism. This study also confirms that early exposure to concepts of professionalism and medical ethics can be meaningful to students, and their understanding and application of these concepts can be meaningfully assessed.
#SCOD1.2: SCOD - Assessment - Written

**SCOD1.2.2 Use of Progress Testing to Develop and Track Clinical Capabilities in Undergraduate Athletic Training Students (7765)**

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**ABSTRACT:**

**Background:** Health professions educators are required to document student competency in specific domains of knowledge and skill germane to their home fields; Athletic training (US) is no exception. As part of our ongoing assessment as learning approach, we have implemented no stakes formative progress tests to assess Miller's competency levels related to our nine programmatic clinical capabilities.

**Summary of Work:** Our domain specific progress modules relate to our desired clinical capabilities, and after one years implementation, has provided students with direct, domain specific learning feedback, driven student learning and remediation, assisted with curricular improvements, and demonstrated robust support for predicting student performance on national board examinations.

**Summary of Results:** In order to examine the predictive ability, we examined relationships between national board examination scores, overall grade point average (GPA), GPA from athletic training courses (AT-GPA), and the average progress test score. We used Pearson correlation to evaluate the magnitude of the relationship using the r-squared % variance explained for each relationship. In its first full year and a small cohort (n=11), our early results indicate a strong relationship between multiple formative assessments and national board examination results, a summative assessment. Correlations between overall national board examination scores and overall GPAs, athletic training only GPAs and average progress test were r=0.37, r=0.56 and r=0.82, respectively. The average progress test explained 67% of the variance in national board examination scores compared to only 14% (GPA) and 36% (AT-GPA).

**Discussion and Conclusions:** We developed nine clinical capabilities as our ultimate program outcome measures that represent the integrated clinical skills, knowledge and attitudes required for practice. Regular sampling has helped identify specific deficiencies in student learning that allow deliberate feedback prior to national board examinations. Programmatically, these early data points have helped us identify capability related gaps in our curricular content or delivery that require greater focus. Progress tests can provide specific performance feedback in many aspects of learning and professional development, can redirect and drive student learning and hold the potential to predict future performance on high stakes summative measures.

**Take-home Messages:** Intentional progress testing requires time and energy, but are an integral to well-designed assessment as learning approaches to programmatic evaluation.
#SCOD2.1: SCOD - CPD – Continuing Professional Development

# SCOD2.1.1 Dissemination of Knowledge on Child Protection in the Medical Field (8438)

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ABSTRACT:
Background: The persistently high prevalence and the possible consequences of child maltreatment are major challenges for those affected and the health care system. Physicians and other health care professionals have an important role in dealing adequately with (suspected) child maltreatment. In the medical field, however, there is often an extreme lack of time. Consequently, there is a gap between the current state of knowledge in the field of child protection in medicine and everyday working live. Therefore, a comprehensive treatment of the topic in continuing medical education is important. Dissemination of knowledge via multipliers is one opportunity in continuing medical education to build up knowledge among physicians as effectively and sustainably as possible. The aim of this work is to analyze the possibilities of knowledge dissemination on child protection in the medical field.

Summary of Work: Dissemination materials on the topic of child protection were developed for multipliers from the health sector. The dissemination materials and activities could be evaluated after using via an online questionnaire.

Summary of Results: The dissemination materials were evaluated very positively. By means of the dissemination activities, theoretical and practical skills on child protection could be imparted to health professionals. In addition, a large number of multipliers stated that without the materials no dissemination activity would have been offered.

Discussion and Conclusions: Due to the existing lack of time in the medical field, possibilities must be found to train as many health professionals as possible on the topic of child protection. Dissemination activities can help to spread knowledge effectively and sustainably among as many health professionals as possible via multipliers and dissemination materials. Those affected by child maltreatment can thus receive early and adequate support and possible serious and long-term consequences can be mitigated.

Take-home Messages: - Child maltreatment is widespread and has serious consequences - Knowledge on child protection among health professionals is too low - Dissemination activities can help to spread knowledge on child protection effectively and sustainably among as many health professionals as possible
ABSTRACT:

Background: Obstetric emergencies and high-risk deliveries (obstetric events) are potentially life threatening. These events are not always managed according to standards of obstetric care. To prevent avoidable harm the quality of managing obstetric events needs improvement. However, the rarity of events might challenge healthcare professionals in obtaining the necessary skills. We aimed to estimate how often midwives, specialty trainees, and specialist doctors in obstetrics and gynaecology experience specific obstetric events.

Summary of Work: We performed a national cross-sectional study including midwives (n=1300), specialty trainees (n=180), and specialist doctors in obstetrics and gynaecology (n=340) working in hospital labour wards (n=21) in Denmark in 2018. Obstetric events comprised Apgar score <7/5 min, eclampsia, emergency caesarean sections, severe postpartum haemorrhage, shoulder dystocia, umbilical cord prolapse, vaginal breech deliveries, vaginal twin deliveries, and vacuum extraction. Data on healthcare professionals were obtained through the maternity wards, The Danish Health Authority and The Danish Society of Obstetricians and Gynaecologists. Data on obstetric events were retrieved from the Danish Medical Birth Register, based on data from 465,919 deliveries (2008-2015). We estimated the average time between experiencing an obstetric event by dividing the number of events with the number of different healthcare professionals.

Summary of Results: Denmark had 61,273 deliveries in 2018. The time between experiencing obstetric events varied from nine days to 42 years. Emergency caesarean sections, which occur relatively frequent, were experienced every other month by midwives and every nine and 17 days for specialty trainees and specialist doctors, respectively. A rare event like eclampsia was experienced by midwives every 42 years and every six and 11 years by specialty trainees and specialist doctors, respectively.

Discussion and Conclusions: Some obstetric events occur extremely rare, hindering the ability to learn and maintain the skills through clinical practice alone. To enhance patient safety, reduce burnout, and minimise litigation, investing in supplementary training activities, e.g. simulation based training, to ensure that healthcare professionals have the required skills is essential.

Take-home Messages: Insufficient management of obstetric emergencies may result in adverse outcome. Obtaining and maintaining skills in obstetric emergencies through clinical practice alone is not possible. Supplementary training activities are essential.
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ABSTRACT:
Background: Transgender persons experience high rates of sexual assault and often encounter providers who lack the knowledge required to provide appropriate post-assault care and supports. To improve the response to sexual assault against trans persons, a multiphase program of research was undertaken to build an intersectoral network of trans-positive healthcare and community organizations. Prior stages of this work identified the creation of a knowledge mobilization portal as a priority area for Network focus.

Summary of Work: We administered a survey to inform the development of a WebPortal intended to provide freely accessible, reliable, and high-quality resources relevant to the provision of trans-affirming post-sexual assault care. This survey collected respondent and organizational characteristics and, using Likert scales, information on access, evaluation, and prioritization of online resources related to the care/support of trans survivors.

Summary of Results: 70 representatives from community and healthcare organizations completed the survey, of whom a small minority reported being able to access relevant online information (15%), trusting available information (17%), and feeling satisfied with existing resources (11%). Representatives rated a number of potential resources as important to include in the WebPortal (e.g., information/fact sheets, links to websites, guidelines, curricula/trainings), and provided recommendations for additional content (e.g., dictionary of terms, directory of trans-positive services, resources specific to the care of racialized survivors).

Discussion and Conclusions: There is a clear need for streamlined access to reliable, high-quality online resources relevant to the care and support of trans sexual assault survivors. In developing the WebPortal, it will be critical to integrate the array of resources rated as important by representatives of healthcare and community organizations as well as include those additionally recommended.

Take-home Messages: (1) There is a scarcity of accessible and reliable online resources related to the care/support of trans sexual assault survivors. (2) Providing centralized access to high-quality resources, such as information/fact sheets, curricula, and trans-positive service directories, among others, may help bridge existing knowledge gaps among healthcare and social service providers on the delivery of trans-affirming care. (3) This user-driven approach could be applied in other jurisdictions aspiring to enhance access to appropriate online resources for improving the supports available to trans survivors and those working with them.
#SCOD2.1: SCOD - CPD – Continuing Professional Development

# SCOD2.1.4 Codesign an interdisciplinary continuing professional development roadmap with and for assessors in making judgements of student performance (8444)

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ABSTRACT:
Background: Accountable and defensible assessment decisions are pivotal to ensure members of the public are supported by graduates in health professions who are safe and competent practitioners, justifying the use of Higher Education public funding. This study adopts a co-design approach to work with assessors across disciplines to facilitate their understanding of the factors that influence their judgements of student performance in both academic and practice settings, and co-design a fit-for-purpose continuing professional development (CPD) roadmap.

Summary of Work: We conducted three co-designed workshops and a feedback session with assessors across Medicine, Nursing and Midwifery, Pharmacy and Education. Participants brainstormed ideas for the roadmap focusing particularly on providing assessors with feedback on their marking behaviour, and identified the key signposts on the CPD roadmap during the workshops. The feedback session further refined the roadmap prior to implementation across disciplines.

Summary of Results: We analysed the prototype ideas using Cultural Historical Activity Theory (CHAT) (Engeström, 1987) and the Community of Practice (Lave & Wenger, 1991) theoretical framework. We consolidated the identified key signposts with supporting resources on the CPD roadmap. For example, establishing communities of practice of academics and practitioners, and supporting engagement with meaningful CPD in diverse social and cultural contexts. Ongoing user evaluation will facilitate further enhancement of the roadmap to better address assessors CPD needs.

Discussion and Conclusions: This study co-designed a fit-for-purpose CPD roadmap with and for assessors across disciplines in making judgements of student performance. The co-designed roadmap has incorporated the best practices in CPD and provision of feedback, which applies to both academic and practice settings. This study has the potential to transform the CPD practices for assessors which supports the provision of accountable and credible judgements of the level of achievement to students and employers.
#SCOD3.1: SCOD - COVID-19 & Assessment

# SCOD3.1.1 Strategies of conducting distance-online-exams as an alternative to face-to-face exams (8857)

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ABSTRACT:
Background: The COVID-19 pandemic has had a lasting impact on political, economic, legal and healthcare systems, as well as the educational system. For higher education new challenges and requirements concerning assessments had to be overcome in order to still guarantee high-quality education. In this context, the possibility of conducting written exams online from home has been and continues to be expanded.

Summary of Work: Due to globally introduced hygiene measures, spacing rules and increasingly lockdowns, it was and is no longer possible to conduct exams in a presence-based manner at many medical faculties. All faced the central problem of whether and how to use distance-online-exams. For this reason, this work aims to identify the individual difficulties and possibilities that must be eliminated or fulfilled in order to be able to conduct distance-online-examinations. Among other things, various strategies will be identified that can contribute to increasing the technical and security aspects.

Summary of Results: Aspects such as data protection, justiciability, reliability and equal opportunities are considered. In addition, some tools for conducting distance-online-exams and their individual features are presented. Since monitoring students in distance-online-examinations is more difficult to achieve than in face-to-face examinations, proctoring is shown as one option solution in this regard. Proctoring can be used, among other things, to counteract students attempts to cheat. However, there are several ways to cheat not detectable by proctoring. The aforementioned aspects represent various possibilities that can be used in individual composition for conducting distance-online-exams as safely as possible in order to obtain legally compliant exams and to avoid any subsequent legal disputes from the students.

Discussion and Conclusions: The progress that has been made with regard to distance-online-examinations is presented and the hurdles that still need to be overcome are discussed. Furthermore, a short insight into a new software for distance-online-examinations is given.

Take-home Messages: The COVID-19 pandemic has shown that through this exceptional situation it was indeed possible to lay the foundations for conducting distance-online-exams. It must be added, however, that they will probably never be an equivalent substitute for face-to-face exams regarding technical and security-relevant aspects.
#SCOD3.1: SCOD - COVID-19 & Assessment

# SCOD3.1.2 The Academic Integrity of Remote Examinations for Health Profession Education During the COVID-19 Pandemic (8340)

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ABSTRACT:
Background: Due to the risks created by the COVID-19 pandemic, social distancing measures in teaching and learning have disrupted education in the health profession. Despite concerns about academic integrity and the prevention of cheating, the new normal is for examinations to be held online. If students fear failure and possess insufficient self-discipline, the lack of physical contact during the invigilation of online examinations can lead to cheating. To uphold the professional standards of medical training, educators should explore alternative methods of holding online examinations. In 2020, advanced information technology offered the ability to set up synchronised online proctoring assessments. We tested the combined use of different technologies to remotely invigilate online tests.

Summary of Work: Under the new normal changes in the second term of the 2019-20 academic year, all online assessments continued in closed book mode in the Faculty of Medicine. To identify possible cases of academic misconduct, such as cheating and plagiarism, we summarised and compared various strategies for the arrangement of online examinations, namely (A) Blackboard system + Zoom invigilation, (B) Blackboard system + Respondus Lockdown Browser + Zoom invigilation, and (C) Blackboard system + Respondus Lockdown Browser + Respondus Monitor + Zoom invigilation.

Summary of Results: Under the real-time Zoom invigilation, the students were not permitted to use earphones, wear a smartwatch, or communicate with their peers. However, the students were allowed to chat with the invigilators in the Zoom meeting via mobile phones to solve problems. Under arrangement (A), the invigilators found four cases of suspected cheating and one case of suspected plagiarism. No students were found to have misbehaved in arrangements (B) and (C).

Discussion and Conclusions: This was the first time that the Faculty of Medicine had arranged online examinations with remote invigilation. The invigilators found it challenging to monitor the students from the device and respond when trouble occurred. The students experienced significant stress during the no physical contact assessment due to technical problems, such as becoming disconnected midway through the examination during the Zoom meeting.

Take-home Messages: The online examination environment with Blackboard + Respondus Lockdown Browser + Zoom minimised students opportunities to cheat, although there was no foolproof method of prevention.
SCOD3.1: SCOD - COVID-19 & Assessment

SCOD3.1.3 Promoting online communication skills among undergraduate medical students in response of COVID-19 – Tele-OSCE (8214)

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ABSTRACT:
Background: The COVID-19 pandemics induced the uncertain situation which arose new challenges for medical schools. Among them there were the performance of the teaching process online and the development of the professional competencies among students enrolled in medical programmes. Due to pandemics in March 2020 Petre Shotadze Tbilisi Medical Academy (TMA) shifted the teaching process to online mode. By the analysis of the curriculum, the competencies those can be developed during online teaching process have been underlined. Communication skills were among them.

Summary of Work: For the aim to address COVID-19 pandemics and ensure achievement of the most amount of learning outcomes by decision of the Curriculum Committee the teaching of the communication skills has been adapted to the online format: -During online classes, students were trained regarding the tips of communication with the patients with behavioral issues (depression, anxiety, aggression and etc.); - The checklists were upgraded considering the tips of online communication skills; - The standardized patients (SPs) have undergone additional trainings. In the frames of the final exam the principles of Tele-OSCE have been applied for the assessment of communication skills with difficult patients. Each student got a written feedback from the observer and the SPs along with the exam recorded videos.

Summary of Results: Most of the students (95%) noted that tele-OSCE in communication skills is helpful for their future practice. Although there was a note concerning necessity of more practice with SPs during the semester. Based on the statistical analyses of the students exam results, it has been revealed that expressing of empathy (emotional or behavioral issues, acknowledged patient frustration) is assessed with lowest scores by the observers and SPs.

Discussion and Conclusions: Tele-OSCE is a good tool to teach online communication skills to the students. As virtual communication is becoming the part of doctors everyday practice, developing the skills of virtual communication will be the mandatory part of curriculum.

Take-home Messages: Promoting online communication skills among students is essential for XXI century doctors
SCOD3.1: SCOD - COVID-19 & Assessment

SCOD3.1.4 A paradigmatic shift for final undergraduate medical students examination: The COVID-19 pandemic approach

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ABSTRACT:
Background: COVID-19 has made medical education delivery changed around the world. High stakes examinations have to take place despite the ongoing pandemic. Careful planning and considerations are mandatory in order to cater for the physical and social distancing new norms. The safety of everyone involved in the examinations is put at the utmost priority to prevent further disease transmission.

Summary of Work: The Universiti Sains Islam Malaysia (USIM) has made a drastic change in the conduct of its final undergraduate examination for the medical students. The traditional one long and three short cases clinical examinations were converted to objective structured clinical examination (OSCE) comprising sixteen manned and twenty unmanned stations.

Summary of Results: An OSCE coordinator was appointed by the faculty to lead a team of committee members to ensure a smooth running of the examination. A hybrid training of online and face-to-face was conducted for the faculty members encompassing the basic concept of OSCE, examination question design and marking concept to assist the lecturers in preparing for the examination. Students online learning was carried out using USIMs Moodle platform, Microsoft Teams, Google Hangouts or Zoom. Sessions of simulated patients training with the students were done by the lecturers, who themselves took the role as simulated patient. Prior to the final medical undergraduate examination, the students were also diligently exposed and get familiarized with the OSCEs through end of rotation examinations. Simulated patients pool was developed through advertisements in the social media namely Facebook, WhatsApp and USIMs mailing list. The simulated patients were screened for COVID-19 risks before being recruited into the pool. OSCE was carried out with strict COVID-19 SOPs and no outbreak of COVID-19 were reported after the examination.

Discussion and Conclusions: Despite COVID-19 pandemic, with careful planning, coordination and teamwork, the faculty managed to organize a well-structured clinical examination while still abiding the rules and SOPs laid out by the government.

Take-home Messages: The COVID-19 pandemic has brought new insights to faculty members on alternative teaching and learning methodologies as well as how assessments can be conducted in the faculty.

#SCOD3.2.1 From Face-to-Face to Online Asynchronous Training: Challenges and How to Overcome Them (8223)

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ABSTRACT:
Background: Drug packing competency in our pharmacy involves two days of face-to-face training followed by practice and assessment. Due to Covid-19 pandemic, face-to-face training was converted to online asynchronous training. Trainers noticed that online learners did not achieve expected learning outcomes. We aim to investigate why online training was not as effective and seek to improve it.

Summary of Work: Based on a review of learning materials, close observation of learner performance and feedback from both learners and trainers, we realized that the online training did not engage learners actively. To improve learning outcomes and knowledge transfer, we modified our online training to introduce teacher presence, incorporated authentic job examples, provided ample quizzes for practices and shared others work experiences. Among trainers, we created the awareness that online learning is different and emphasized the importance of applying facilitation and formative assessments.

Summary of Results: Twelve learners who went through the improved online training were found to meet the expected learning outcomes. It was easier for learners to follow through mathematical concepts with the teacher explaining her thought processes through chalk talk videos. With the narrative video on job processes, learners remembered and modelled after the steps. To further engage learners with informal yet informative learning, we had previous batches of learners and seniors sharing their personal experiences and advice through discussions in video formats. Quizzes were revised for their validity and expanded to cover all learning objectives. Passing scores for quizzes were revised to 100 percent and embedded throughout the training to ensure that learners check their own understanding and revisit the learning materials for clarification. On the other hand, trainers were reminded that online learners have different learning needs so they need to focus on formative assessments and respond appropriately to any observed learning gaps.

Discussion and Conclusions: Leveraging on teacher and social presence, contextualized learning, reinforcement through practices and timely feedback from trainers, we were able to improve on our online training.

Take-home Messages: Integrating active learning into online training is crucial to its success.

#SCOD3.2.2 What are students preferences for interaction in an online course? (9410)

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ABSTRACT:  
Background: A one week teaching skills course for undergraduate medical students has evolved during the COVID pandemic to emergency-remote-learning (March 2020) and then a re-designed online course (August 2020). It now includes synchronous and asynchronous elements with deliberate attention to interaction in both. Synchronous interaction included: student teacher (ST) with use of questioning, chat function, mentimeter and feedback on observed teaching. Student content (SC) interaction included videos, animations, cartoons, drawings, photographs. Student- student (SS) interaction included discussion of videos and personal experiences in teams and preparation of peer-teaching (asynchronous and synchronous). Asynchronous material included narrated powerpoints, quizzes, videos, and padlet walls. Students were asked for solutions to problems (ST), to complete written and drawing tasks (ST, SC), test yourself questions (SC), respond to questions on padlet walls alone and in groups (ST and SS) and respond to comments of their peers (SS). As part of our evaluation, we investigated student preferences for the different types of teaching.

Summary of Work: 97 students completing the course between Sept 2020-Dec 2020 were asked to complete an online, anonymous evaluation form. Students could select one or more answers to the question: which teaching method contributed most to your development as a teacher. The options were: asynchronous elements, synchronous SC, synchronous ST and synchronous SS.

Summary of Results: Of a total 164 responses (mean 1.7/student), 60 (37%) indicated synchronous-SS was the most helpful followed by 55/164 (34%) for synchronous-ST and 40/164 (24%) for synchronous-SC. The least helpful method was asynchronous teaching with 9/164 (5%) responses.

Discussion and Conclusions: Asynchronous resources were less valued than synchronous activities despite the flexible learning opportunities they provide and the attention given to making them interactive. A preference for synchronous-SS may reflect the powerful nature of constructivist approaches which facilitate development of learning communities, provide social support and allow students to benefit from cognitive- and social-congruence. It is notable that the synchronous-SS and synchronous-ST activities included the most time interacting and greatest variety. This may have underpinned preferences now that face-to-face interactions with peers and tutors are reduced.

Take-home Messages: This study highlights students preference for synchronous versus asynchronous presentation within an on-line module for teaching skills.

#SCOD3.2.3 Teaching in pandemic times: Unexpected "gifts" from COVID-19 (9260)

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ABSTRACT:
Background: Educational responses to COVID-19 involved rapid adaptations to existing educational practices. While many responses involved curtailing practices, we pondered whether advantages accrued from some changes.

Summary of Work: A group of academics from different undergraduate programmes in the health professions engaged in critical reflection on responses to COVID-19. Adopting an appreciative stance, we focussed on the unexpected gifts that COVID-19 has offered health professions education (HPE) and whether, amidst massive disruption, we recognise and capitalise on these gifts.

Summary of Results: Gifts emanated from all facets of HPE, from high-level relationships with local government to the granular process of individual student learning. Relationships changed. Those between healthcare providers and students transitioned to service through learning and learning through serving. Ongoing, shifting uncertainty granted leaders and educators permission for vulnerability and humility in a context where role-modelling invincibility, even omniscience, is often valorised. Entrenched power dynamics in educational processes shifted, facilitating collaboration and trust to co-create innovative pathways and novel content. Stronger educator-student relationships were catalysed. As disruption truncated curricula, letting go was imperative. Educators confronted what they valued as core. Adopting Emergency Remote Teaching compelled educators to reconceptualise teaching and learning. The affordances of technology-mediated learning became appreciated. Students had to embrace becoming self-directed learners. As COVID-19 re-emphasised power and race asymmetries, far more staff appreciated the vast disparities in the lived reality among students and staff. Simultaneously, everyones fragility was recognised, so too that resilience is a double-edged sword and that a caring environment is an imperative, not optional. Conversations about how we best serve students and staff were reframed, changing actions.

Discussion and Conclusions: Not all gifts were evident in the moment. Indeed, some gifts emanating from experiences during and responses to student protests in previous years, including teaching and personal resources currently standing educators in good stead, are only now evident.

Take-home Messages: Numerous positive impacts were identified that would benefit undergraduate HPE if retained. The question that vexes us is whether we will honour and act on COVID-19s gifts or squander them by lapsing back to previous ways of being and doing in HPE.

SCOD3.2.4 Measuring outcomes of an innovative COVID-19 elective: A collaboration with the Ministry of Public Health, Qatar (8928)

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ABSTRACT:
Background: Infectious disease outbreaks are a cause for serious public health concern. Currently, medical education is deficient in empowering students to manage public health crisis situations.
Summary of Work: With the onset of the COVID-19 pandemic, medical education was disrupted. The Institute for Population Health, Weill Cornell Medicine-Qatar developed and implemented an innovative four-week elective for medical students in collaboration with the Ministry of Public Health (MOPH), Qatar. The elective provided students with the knowledge and skills required to evaluate and manage infectious disease outbreaks including pandemics such as COVID-19. The elective focused on the epidemiology of infectious diseases; outbreak investigation, evaluation and management; and risk communication. The course was delivered by lectures (synchronous and asynchronous learning), and practical in-person experience at the MOPH site. The students were evaluated on attendance, participation in course activities, and a written reflection.
Summary of Results: Seven third-year medical students enrolled and completed the elective. Students observed how the MOPH dealt with the COVID-19 outbreak and understood the challenges associated with outbreak control. Students reported an increase in the knowledge of specific epidemiological terms such as flattening the curve, agent virulence, and reproduction number. Students acquired skills in surveillance, contact tracing, and analyzing geographical transmission. Students also engaged in online discussion boards exploring aspects of the outbreak investigation, control, and risk communication.
Discussion and Conclusions: The timely elective on responding to outbreaks during the pandemic provided medical students an opportunity to contribute to the national risk mitigation and outbreak control to contain the COVID-19 outbreak. It was an enriching experiential activity equipping them with the knowledge, skills, and training required to manage infectious disease public health crises. With COVID-19 revealing the criticality of public health, it is imperative that medical schools include critical public health components in their curriculum to train medical students and future physicians.
Take-home Messages: 1. Experiential learning in real-life situations is a great way for medical students to learn and understand public health. 2. Unique public health electives can be successfully established when a strong partnership exists between academia and public health agencies.
ABSTRACT:
Background: The COVID-19 pandemic forced medical schools worldwide to transition online. While there are reports about medical education adaptations to this crisis, there are limited studies evaluating the impact of these adaptations. This study demonstrates how SWOT analysis can help medical educators reflect on adaptations to the COVID-19 pandemic and future crises with a nationwide survey of how medical school deans in Taiwan maintained in-person medical education during the pandemic.

Summary of Work: This study consisted of two online surveys and a semi-structured interview. Eligible participants were deans or associate deans of all medical schools in Taiwan. The authors collected survey responses and conducted interviews about curricular adaptations in spring 2020. A follow-up survey on the impacts of curricular adaptation was conducted in fall 2020. The authors analyzed the data using a thematic analysis approach.

Summary of Results: All thirteen medical schools in Taiwan completed the surveys. Through a SWOT analysis, this study identified strong leadership, prior experience with SARS, and ability to rapidly adapt the curriculum as strengths; lack of faculty confidence in online education, limited numbers of administrative staff, and inability to rapidly add new topics as weaknesses; centralized anti-epidemic policies, inter-institutional collaborations, and educational innovations as opportunities; and threats from parents, patients, and teaching hospitals. The deans reported that the quality of education was maintained as students evaluations of courses, students performances in written exams, clerkship supervisors assessments, the national OSCE, and national board exams remained comparable to pre-COVID time.

Discussion and Conclusions: Strengths and opportunities, such as strong leadership and centralized anti-epidemic policies, can overcome weaknesses and threats, such as faculty lack of confidence in online education and parental pressure to stop hospital-based education. This study highlighted that another enabling factor for Taiwanese medical educators to continue face-to-face medical education was the experience of SARS.

Take-home Messages: This study recommends that medical school leaders conduct SWOT analyses as early as possible to plan strategies to continue safe and quality medical education during COVID-19 and future crises by leveraging strengths and opportunities to overcome weaknesses and threats.
#SCOD3.3: SCOD - COVID-19 - Online Education

# SCOD3.3.1 Synchronous Webinars during Covid enable active learning in large size senior/junior classes: Students' perceptions of learning comparing synchronous, asynchronous and face to face formats (7928)

AUTHOR(S):
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ABSTRACT:

Background: Lockdown preventing face-to-face classes mid March 2020 necessitated immediate adaptation to continue large size courses, mostly via asynchronous formats. A senior advanced elective converted to synchronous interactive webinars, more appropriate for preserving skills-based alignment. Student post-course feedback was elicited and informed refinements for fall delivery of a prerequisite junior foundational course with the same instructor, whom students had not met.

Summary of Work: The instructor transitioned to a live synchronous webinar for a senior class (N=178) to preserve course methodology and outcome alignment and to enhance teaching and foster interactivity. Two post course surveys evaluated the effectiveness of the enabling methods used in online teaching; and to assess perceptions of the administration of online exams. Refinements were made for online delivery of the junior introductory fall course (N=247) Perceptions were elicited from web-based surveys, interviews, focus groups and observations for each cohort. Comparison of perceptions for learning affordances or constraints in the emergent environment were explored for impressions of impact on teaching and learning.

Summary of Results: Quantitative and qualitative data from both cohorts affirmed synchronous webinars provide an appropriate, facilitative environment encouraging active, stimulating participation. Compared to face-to-face classes, students felt more confident, more anonymous (webcams could be disabled) and contributed more via chats. Webinars were preferred to asynchronous formats for operational and learning affordances. Logistically, they provided more focus, consistency, structure and organization to students routine with less work and time commitments; were less prone to distractions and a relief from the self-directed responsibility of asynchronous courses. Personal learning was amplified: students felt less isolation; were able to directly access the instructor, receive feedback, communicate with peers, observe role models, self-assess and readjust learning compared to peers and experience random polling quiz opportunities. Active situational judgement case scenarios with frequent practice tests increased engagement and concentration and prepared them for online timed exams.

Discussion and Conclusions: Positive perceptions focused on learning enhancements, feedback and active participation. Learning dynamics changed, solidifying retention. The primary limitation was variable connectivity.

Take-home Messages: Synchronous webinars were preferred to asynchronous formats and considered more engaging, facilitative pedagogy for individual learning.
ABSTRACT:

**Background:** Due to the Covid-19 pandemic, medical students education was affected, especially in the clinical training. To compensate for parts of the students training that were missing, this study was conducted to design, implement and evaluate an online internal medicine program for clerkship students before starting their rotations in Imam Khomeini Hospital Complex.

**Summary of Work:** A 4-week online program was developed and implemented, considering all stakeholders opinions. Besides providing multimedia educational materials, this program included 61 sessions such as morning reports, scenario-based and case-based classes, sessions to facilitate students transition from preclinical to clinical training, and interactive classes on approaching common diseases and clinical manifestations. Besides, Students took an online quiz and a self-assessment every two weeks. To have a comprehensive evaluation, process and product evaluation were conducted based on the CIPP model, using several tools like questionnaires, focus group discussions, and semi-structured interviews.

**Summary of Results:** Our Evaluation showed that most of the students were satisfied with this program, and they felt more ready to enter the clinical rotations after participating in it. They believed that the faculty members performance was successful, and they were able to interact appropriately using online platforms. The faculty members were also satisfied with the program. Although they had some troubles using the online platforms, they had finally adapted to these new methods. Based on their interactions with the students in the following months, they believed that they were knowledgeable and as competent as the students who took part in these rotations before.

**Discussion and Conclusions:** This program was an adequate substitution for the previous course, and both the students and faculty members were satisfied with it. One of the limitations of this study was not having a control group. Besides, this study only evaluated the short-term results. So further studies are required to investigate the long-term effects of this new way of education.

**Take-home Messages:** We applied several educational methods, some of which we had not tried before. So this pandemic can be seen as an opportunity to have new experiences. We believe that e-learning can be widely used as an effective way of education in clerkship programs, even in the post-pandemic era.
ABSTRACT:

**Background:** E-learning has increasingly become popular and has demonstrated advantages over traditional face-to-face learning in areas of learning enhancement and delivery. Instructors easily upload teaching content in different formats with tracking systems and personalized instructions, giving students control over the pace and path of their learning thereby, enhancing their learning experiences. E-learning offers a paradigm shift to a learner-centred model, however, is faced with challenges including students poor IT literacy and an unwillingness to adapt to unfamiliar technology especially in underdeveloped regions. The necessary switch to e-learning during the COVID-19 pandemic may have changed students perception of it.

**Summary of Work:** Collaborating with Lecturio - an e-learning platform which has over 1 million medical students as users, we assessed available data to note differences in student usage over time. We analysed usage of Lecturio’s content - videos, recall quiz questions and exam-oriented question banks by comparing these features within two periods of 6 months: base period from March 2019 to August 2019 and reference period from March 2020 to August 2020 calculating percentage changes in figures between these periods.

**Summary of Results:** There was a 283% increase in the number of new users and a 595% increase in the total number of hours spent on the platform in our reference period in comparison to the base period. There was also an increase in video-linked quiz questions and the question bank questions of 676% and 596% respectively.

**Discussion and Conclusions:** Students have had a higher need for external learning resources since some universities had to shut down as a result of the COVID-19 pandemic and were consequently forced to adapt to and learn how to navigate e-learning platforms. Our assessment also further proves the ability of e-learning platforms in analyzing data in different ways e.g. tracking student usage and progress which plays a major role in informing instructors how much of teaching materials are being viewed and how much time students spend viewing them.

**Take-home Messages:** Faculty members should take advantage of this period to create ways of thoughtfully integrating e-learning components to their curriculum thereby implementing evidence-based education through utilization of student performance data to improve learning outcomes.
#SCOD3.3: SCOD - COVID-19 - Online Education

#SCOD3.3.4 A realist evaluation of undergraduate medical teaching with remote (telephone and video) consultations in primary care (8052)

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ABSTRACT:
Background: Medical schools in the UK have implemented remote learning solutions to overcome the educational challenges Covid-19 has presented, including supervised remote consultations in primary care. Current evidence demonstrates effectiveness of this approach for clinicians and patients but highlights a paucity of guidance to facilitate this teaching modality. As we transition to remote models of care, creating optimum student learning experiences is imperative for maintaining clinical competencies. This study aims to evaluate the use of remote consultations to teach medical students in this setting.

Summary of Work: The study uses a realist evaluation, an approach used to evaluate real-world interventions which are not yet well understood. It will be used to explore features of this new teaching intervention, in order to consider what elements lead to success or failure. Medical students and GP tutors will be asked about their experiences through semi-structured interviews and questionnaires to explore how remote consultations are used for learning, and what features of this process affect students learning outcomes.

Summary of Results: Initial programme theory identified multiple contextual drivers for optimum teaching and learning outcomes. These are broadly categorised into five themes; engagement, motivation, perception, preparation and experience. These theories will be explored and tested in the second phase of data collection within a realist evaluation, which is currently under way.

Discussion and Conclusions: With a shortfall in students choosing a career in general practice, fostering a positive learning experience is important, particularly in the current climate where learning has been significantly disrupted. It is known that medical students exposure to learning opportunities in general practice impacts their future career choices. It is intended that managing the identified facilitators and barriers to learning with remote consultations will help to ultimately to improve learning and teaching experiences for medical students and GP tutors.

Take-home Messages: Remote consultations are here to stay. Understanding their role and effectiveness in undergraduate medical education is important, particularly how to optimally teach using this modality and its role in meeting clinical learning outcomes.
ABSTRACT:
Background: Covid-19 pandemic has imposed great changes in everyday life worldwide. In the first semester of 2020 academic year, Humanitas University proposed to students digital instruction for continuing medical education as planned, in particular concerning practical activities. The latter, defined by our University as Professionalizing activities were transformed into complete online learning due to the level 4 lockdown imposed in the previous months.
Summary of Work: From September 2020, in accordance to the new rules imposed by the Government, we decided to modify the approach to Professionalizing activities making the practical part feasible in person. Although following the new imposed constrains, concerning social distancing, we came up with a blend online and face-to-face education program; students learn from e-learning platforms prior to an in-person session on the same topic. The Kirkpatricks model have been followed for the development of the project.
Summary of Results: Two ad hoc satisfaction questionnaires, one for students and one for tutors, with both open and closed questions, have been proposed. According to students the overall satisfaction of the course was rated 6,8, while tutors evaluated it with 7,4. The qualitative analysis of data, derived from comments and suggestions proposed by our undergraduates and faculty, confirms the advantage of the blended learning activities in order to guarantee a continuation of the clinical curriculum, although it highlighted the necessity for an increased technical support for connection problems and an improvement in organization of the meetings.
Discussion and Conclusions: Studies have reported that hybrid learning is becoming more accepted among academic communities because it combines the best of both worlds. However, the effectiveness of hybrid learning depends on several factors, mainly adequate faculty training and institutional support. With our approach to blended learning we propose a method, specifically designed to make effective this kind of teaching which can be considered essential in the pandemic era we are facing.
Take-home Messages: The conventional medical education has to be replaced, at least momentarily, and we would like to share our experience hoping it contributes to increase the mastery of the blended learning method.
#SCOD3.3: SCOD - COVID-19 - Online Education

#SCOD3.3.6 Medical education during the Corona pandemic: The eTutor project for high level online teaching (8883)

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ABSTRACT:
Background: Due to the epidemic situation caused by the infections and the risk of infection by the coronavirus SARS-CoV-2, universities were forced to implement a digital summer semester 2020. Students and lecturers at RWTH Aachen University had to adapt to an almost fully digital semester in a very short time. Lectures were held in video conferences or as prerecorded videos, but the lecturers faced various technical and didactical challenges. Based on the identified needs in the summer semester, the eTutors project was developed to provide the required lecturers support in the implementation of both synchronous and asynchronous digital education. The aim of the project is to ensure increased quality of the online teaching and therefore to plan, develop and implement a training concept for the eTutors.

Summary of Work: The training concept of the eTutors, a group of selected students, includes a training phase, a practical phase, and a supervision phase. First, the eTutors are trained in different digital teaching tools and their didactically meaningful use. Zoom, the elearning platform Moodle, basic video production, copyright and privacy protection are covered in phase I. In the practical phase courses are supervised and the knowledge is contributed by taking over the technical support, the meeting generation and the lectures recordings. The reflection phase covers the entire duration of the eTutor program as the practical implementation during the semester is continuously reflected by the media center and medical didactics at least once a week. Also, the peer teaching approach is applied. The connection of the eTutors allows a fast possibility to receive or give assistance concerning the faced challenges.

Summary of Results: The eTutor project has a main part in the uninterrupted progress of the online semesters and more than 2000 digital courses and approximately 720 videos for asynchronous learning were already enabled in the last semester.

Discussion and Conclusions: The integration of eTutors in the coping strategies of the pandemic challenges is reasonable if a proper training concept exists.

Take-home Messages: The eTutor project is an elegant strategy to enable an unobstructed online semester and high-quality lectures.
#SCOD3.3: SCOD - COVID-19 - Online Education

#SCOD3.3.7 Teaching psychosomatic medicine in times of COVID-19 (9771)

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**ABSTRACT:**

**Background:** Due to the COVID19 pandemic, medical education faces enormous challenges. Any kind of face-to-face teaching had to be transferred into an online format; a purely virtual equivalent to in-person classes. Whereas theoretical teaching units can easily be adapted for online learning (e.g. recorded lectures), practical aspects of academic medical education - like communication training with patients - had to be suspended.

**Summary of Work:** The aim was to adapt the practical course Psychosomatic Medicine and Psychotherapy to an online format integrating interactive and practical learning aspects. First, lecturers with extensive teaching experience were asked to advice on the courses design. The content derived from these questionnaires was then further developed using the curriculum development cycle by Kolb (1984). The course design was presented at different stages and assessed in various curriculum committees.

**Summary of Results:** Students were separated into groups of 20. The course consisted of both a synchronous and an asynchronous phase, with the synchronous part comprising two online lectures, which marked the start and end of the course plan respectively. In between, students worked on patient cases asynchronously, both in writing and a virtual hospital (INMEDEA). Furthermore, a forum for questions and discussion was introduced on a digital learning platform accompanying the course. For additional support, short patient videos were recorded and an information sheet was provided for each disorder covered in the course. Also, a virtual OSCE training was offered before exams. Students awarded the course with a teaching prize.

**Discussion and Conclusions:** The course Psychosomatic Medicine and Psychotherapy has been completely adapted to an online format. The greatest challenge was to cover the practical aspects, which was accomplished by video examples and work on patient cases. The course format was well received by students, for which reason elements of the new course concept will be retained even after the pandemic.

**Take-home Messages:** Practical aspects of academic medical education like communication training with patients can be adapted into an online teaching format.
ABSTRACT:
Background: With the advent of COVID-19, telemedicine has been increasingly utilised as a method for medical student learning. Peer teaching has been shown to be an effective way of advancing learning of both junior and senior students. Developing teacher feedback processes is essential to maximise learning in the virtual learning environment. The aim of this study was to develop a tool which could be used to formatively assess the quality of feedback given by the teacher and also act as a learning aid to improve near-peer feedback in the virtual environment.

Summary of Work: One initiative developed during COVID-19 lockdown involved peer-senior students observing and feeding back to junior-students conducting a Zoom consultation. These sessions were recorded. Observations from these recordings, melded with expert opinion, resulted in the development of a paper-based feedback tool. The tool comprised of several criteria. The feedback tool was then utilised by medical education experts and recently graduated doctors to rate the recorded Zoom videos. Inter-rater reliability was calculated by percentage agreement and Fleiss Kappa. Raters also evaluated the tool in respect to usability and feasibility.

Summary of Results: Several of the feedback criteria resonated with previous research and included: introduction and rapport, feedback content, feedback delivery and goal setting. The criteria virtual learning environment was specific to the virtual learning session, for example appropriate background with limited visual distractions, engendering positive body language and empathy. The evaluation and statistical analysis allowed the refinement of the tool. Some of the terminology was changed and the use of the tool in an electronic form was advised.

Discussion and Conclusions: Giving feedback to a teacher on their ability to feedback is important whether the learning is face to face or in the virtual environment, or whether the teacher is a student or member of staff. A feedback tool not only offers formative direction for improvement but may also offer a framework for the teacher giving feedback. Engendering crucial feedback techniques in the virtual environment needs to be highlighted.

Take-home Messages: Similarities exist between a virtual and face-to-face feedback tool but there are differences that need to be considered.
ABSTRACT:
Background: The teaching of anatomy; specifically, cadaveric dissection/prosection is a key component of undergraduate education at Brighton and Sussex Medical School. In March 2020, national lockdown resulted in anatomy teaching moving to pre-recorded and live online sessions. As part of educational evaluation, 44% of 113 students felt less motivated to study anatomy when it was delivered in this asynchronous fashion.
Summary of Work: When restrictions were lifted and to help address concerns over motivation, it was decided that a blended learning provision would be delivered to ensure the continuation of high quality learning. This included face to face socially distanced dissection/prosection sessions as well as live streamed anatomy sessions to 500 students using 4K streaming through an operating theatre light and 4K camera via MS Teams. At the same time the ability to deliver surgical education became restricted by travel and a Virtual Reality in Medicine and Surgery course was created to use 360 live streamed content to present out VR headsets to 470 participants from 26 countries.
Summary of Results: Over 32 hours of live broadcasted content, 1260 live views and 304 hours watched in total for surgical training. A further 8 hours of live streamed content was delivered to Year 1 and 2 medical students. A student evaluation focus group highlighted in the first wave of the pandemic their motivation suffered, however, a live streamed brain removal made them feel invigorated to carry on. One student stated: if [BSMS] had provided an overview for the previous terms material, like they did with the live brain removal, I wouldnt have felt like I was starting on a back foot and absolutely clueless.
Discussion and Conclusions: Live streaming creates a positive and inclusive environment during times of restricted access and may have a role in the future of undergraduate and postgraduate anatomy education.
Take-home Messages: During this time of uncertainty, a true blended learning provision is a suitable alternative.
SCOD3.3: SCOD - COVID-19 - Online Education

SCOD3.3.10 EndoFlix: Enhancing student engagement and connectedness through gamification in an online Endocrinology course (8613)

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ABSTRACT:
Background: Engaging students to enhance learning and promote knowledge retention is a continual challenge for medical education, amplified by distance learning in the COVID-19 pandemic. As the necessary transition to an online curriculum occurred, we explored ways to keep learners engaged in our Endocrinology course. We created the online EndoFlix game seeking to use gamification to increase learner engagement through a knowledge competition.

Summary of Work: We created the EndoFlix game using Kaizen-Education, a software platform used to imbue gamification in education developed at the University of Alabama at Birmingham. All second-year medical students were invited to participate by downloading the app (iOS/Android). Participation was voluntary. Our game (knowledge competition) used a Harry Potter (HP) theme, and students were randomly sorted into four Hogwarts houses. The badges and team trophies were themed on HP. We created 68 questions that emphasized high yield content to foster clinical reasoning and consolidate complex concepts. The questions and explanations mirrored the content taught on the same day and referenced the lectures and class textbook to integrate the knowledge in the existing matrix without increasing cognitive load.

Summary of Results: 148 (85%) of the students answered >1 question, and on average, 40 students answered questions daily. Participation was higher 48 hours before weekly exams. Collectively, students answered 79% of all published questions, and overall answer accuracy was 77%. The median badges earned were 12. EndoFlix was rated the highest among other activities on the final course evaluation (N=160). On the survey (n=52), 92% were satisfied with the knowledge content offered in the game, and 84% found it useful to their learning. Students provided positive comments such as EndoFlix was awesome to stay on task and quiz what I was learning in the lectures.

Discussion and Conclusions: EndoFlix fosters self-directed learning, knowledge acquisition, and application in clinical scenarios and formative assessment. It had the three cornerstones of autonomy, mastery, and relatedness of self-determination theory. Relatedness was vital and uplifted morale during social distancing.

Take-home Messages: The COVID-19 pandemic underscored the need to maintain student engagement as the curriculum pivoted to virtual learning. Making learning fun through gamification can encourage medical student engagement and promote self-directed learning.
ABSTRACT:

Background: The COVID-19 pandemic forced veterinary educators to adjust the delivery and assessment of curriculum in spring 2020. While didactic courses moved online, laboratory courses were less amenable to this shift. In particular, deliberate practice of surgical skills in the clinical skills laboratory had to be suspended, and the typical progression hurdle of performing mock ovariohysterectomy surgery on a model was inadvisable.

Summary of Work: This presentation describes decisions made for second-year veterinary students (n=122) at one U.S. college, including the remote completion of a surgical skills curriculum using instructional videos and models. During the learning process, students uploaded a sample assessment video for instructor feedback. After getting feedback, the students submitted an assessment video, which was evaluated using the examination rubric used in a typical year. As in other years, students who did not perform satisfactorily on the examination were offered a second chance to pass by repeating the examination on remediation.

Summary of Results: The presentation highlights areas of difficulty for the students and college, including the timely delivery of surgical supplies, student motivation, and videography deficits. Two second year students failed their remediation examination. This rate of student failure did not differ from a non-COVID year. The typical consequence for failing remediation is failure of the course; however, the course directors chose to be lenient given that students had learned surgical skills in their own home. Students were offered additional faculty tutoring and another remediation attempt upon their return to school in fall semester, at which time both students passed their examination. All students performed live surgery in the fall with similar skills as previous cohorts.

Discussion and Conclusions: After having only one in-person surgical skills laboratory, students learned surgical skills successfully at home by practicing on models and receiving feedback on video recordings of their skills. Students passed their surgical skills examination at a similar rate to previous cohorts.

Take-home Messages: Students were successful at learning and practicing surgical skills at home when appropriately supported by faculty feedback remotely. Video-recorded surgical skills examinations appeared feasible and fair in this context when in-person testing was not possible.
ABSTRACT:

Background: Within days, the corona crisis has forced the Lernzentrum, as well as all other places of training and further education, to discontinue classroom teaching at German universities and vocational schools. In order to start teaching online, tutors had to face the challenge to develop new digital learning formats (virtual classrooms) for the peer teaching of practical skills within a short time. This contribution aims at outlining the project of developing e-tutorials with regard to the teaching of practical skills.

Summary of Work: After analyzing the classroom lessons (n=30), some of the tutorials were transformed into digital formats. These so-called e-tutorials were held via a digital platform. They have been evaluated continuously with a standardized online questionnaire. The results of this evaluation have been analyzed descriptively.

Summary of Results: From 27/04/2020 to 17/07/2020 eleven different e-tutorial formats were offered on 246 dates. The evaluation revealed a high degree of acceptance with these course offers as well as with the implementation by the tutors.

Discussion and Conclusions: During the pandemic crisis the substitution of peer teaching into forms of e-tutorials was considered valuable; however, these learning formats present challenges, especially with regard to the interaction between teachers and students. They cannot therefore fully replace the peer teaching of practical skills.

Take-home Messages: 1. Peer Teaching can also create an atmosphere conducive to learning at a distance. 2. Tutorials cannot and will not replace Peer Teaching of practical skills. 3. At the same time, eTutorials in and outside of pandemic times will continue to be a useful addition in the future. 4. Tutorials present teachers and learners with new pedagogical challenges.
#SCOD3.3: SCOD - COVID-19 - Online Education

#SCOD3.3.13 Online and confused: Japanese medical students’ learning experience during the COVID-19 pandemic (8802)

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ABSTRACT:

Background: During the early stages of the COVID-19 pandemic, medical students experienced unprecedented circumstances due to university closures, stay-at-home orders with travel restrictions, and an inaccessibility to mental health services. At Okayama University, medical students also deviated from the normal learning environment by having their classes shifted online. The purpose of this study was to qualitatively clarify how the pandemic affected medical students learning attitudes, methods, and environment.

Summary of Work: A qualitative study was conducted including three focus groups consisting of first-year and third-year medical school students at Okayama University Medical School. The focus groups interviews were recorded and transcribed, and the transcripts were analyzed based on Steps for Coding and Theorization (Otani, 2008), which is a sequential and thematic qualitative data analysis technique.

Summary of Results: There were two main findings on how the COVID-19 pandemic affected medical students learning: First, students preferred on-demand lectures, although they were originally forced to learn remotely. Second, factors such as friendships and interactions within study groups substantially affected students study habits and attitudes toward learning during the stay-at-home study period. Furthermore, these factors impacted the learning of first- and third-year students in different magnitudes.

Discussion and Conclusions: The COVID-19 outbreak has advanced the online learning environment in Japan. In our medical school, most of the classes offered on-demand lectures, which allowed students to manage their time more efficiently than they had been able to in the pre-pandemic time. In addition, the establishment of surrounding learning communities can help students to develop interdependent self-construals. It is traditional for Japanese to self-identify interdependently; therefore, it is critical for students to place themselves in an acquaintance community.

Take-home Messages: It is crucial for educators to set up a learning environment online to create spontaneous interactions between students and teachers in order to conserve the preexisting face-to-face class dynamics. The current findings can allow teachers to refine teaching objectives and methods in the context of forthcoming pandemics and social conditions that may prevail in the future.
#SCOD3.3: SCOD - COVID-19 - Online Education

#SCOD3.3.14 Impact of introducing online interprofessional education to health professionals: A systematic review and meta-analysis (9257)

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**ABSTRACT:**

**Background:** The COVID-19 pandemic has caused extraordinary disruptions to the medical education. Therefore, the online IPE has provided learners with opportunities to learn interprofessional collaboration during the pandemic. However, the evidence suggested impact of online IPE activities on learners is limited. We aimed to use this study to objectively evaluate impact of online IPE on professionals.

**Summary of Work:** The databases of Embase, Cochrane library, PubMed and ProQuest were searched for the fulltext without language limitations using following associated terms; interprofessional education, online learning and impact up to December 2020. We handsearched the Journal of Interprofessional Care (1995 to 2020), abstracts from medical education conferences and websites of IPE organizations. The quality of studies was evaluated according to the risk of bias and MERSQI. Only pre-post studies were included to compare the impact of IPE. Two reviewers working independently selected studies and extracted data. Meta-analysis was performed by the R software version 3.6.3.

**Summary of Results:** We included 20 studies with 2549 professionals. 15 were before and after studies, and the other 5 were RCT. In addition to lecture-based learning, there were 4 different types of teaching methods: team-based learning, case-based learning, simulation-based learning and problem-based learning. Also, online programs can be grouped into two categories: synchronous and asynchronous format. The overall methodological quality of studies was moderate and the Z test showed a significant positive change in knowledge ($Z = 3.88, p < 0.001$) and a moderate increase in attitudes ($Z = 1.53, p < 0.01$). For teaching methods, team-based learning learners benefit more from online IPE. Both synchronous and asynchronous formats showed significant positive changes in attitude and knowledge. However, there is no results published about improvements in clinical outcomes.

**Discussion and Conclusions:** Despite the wide variation in online IPE programs, evidence suggests a positive impact to foster learners knowledge and attitudes on IPE. For further applications, well-designed studies with follow-up data are needed to evaluate the long-term impact.

**Take-home Messages:** To minimize effects of the COVID-19 outbreak on medical education, the online IPE programs could provide an alternative to professionals. In the long run, more studies should be conducted to evaluate the long-term effects of online IPE.
ABSTRACT:

Background: Tokyo Medical and Dental University (TMDU) launched an undergraduate medical and dental integrated curriculum in 2012 with goals of improving interprofessional collaboration and patient care. It has been found beneficial for broadening students viewpoints and learning team-based medical care. The coronavirus pandemic has had a large impact on how education has been conducted globally, and new instruction methods also needed to be found to continue this program.

Summary of Work: Under TMDUs integrated curriculum, an interprofessional education (IPE) workshop where graduate-year students across eight health professions discuss treatment plans for a simulated clinical case including systemic, oral, and social issues was held. In AY2020, around 340 participants were divided into 48 multidisciplinary groups to facilitate discussion. A new IPE curriculum was also started for younger undergraduate students early exposure to interprofessional learning.

Summary of Results: Under pandemic restrictions, it was difficult to provide regular opportunities for face-to-face learning sessions. Thus, a new style IPE workshop was conducted utilizing the video conferencing system Zoom and its virtual breakout rooms. Students in each multidisciplinary group worked together in this format as effectively as in prior face-to-face workshops, meeting collaborative competencies such as communication, teamwork, and roles/responsibilities. The remote learning, trial session of a new curriculum for younger undergraduate medical, nursing, and dental students also revealed a good opportunity to realize patient viewpoints and increase motivation. Analysis of the students post-participation questionnaires revealed that, even online, this workshop brought about desirable effects, such as realizing the roles and responsibilities of one’s own profession and broadening patient care perspectives.

Discussion and Conclusions: Remote learning advantages included, avoiding viral transmission risks, comfortable environment, and accessibility, while limitations involved nonverbal communication difficulty among participants, and time management, student evaluations by faculty. Faculty evaluations were reinforced by peer evaluations, and time management was enabled by manual preparation, including protocol for using Zoom. Even with online learning, TMDUs undergraduate integrated curriculum for healthcare professionals can lead to effectively assisting student acquisition of the IPE competencies, cultivating self-affirmation within a profession, and clarifying learning goals.

Take-home Messages: This trial supports use of online learning in health professional education, considering the various advantages of broadening students patient care perspectives.
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ABSTRACT:
Background: Enhanced social distancing measures due to the COVID-19 pandemic has transformed the delivery of education, from physical lessons to online ones. Since then, there has been increasing number of publications describing the perception of medical students learning experience in virtual platform. However, the longer term effect of learning in an online environment, in particular one that uses Team-Based Learning (TBL) pedagogy, on students motivation and hence, engagement and perception of learning remains elusive. We leveraged on Self-Determination Theory (SDT) of motivation, and its underlying key psychological needs satisfaction, to explore the longitudinal effect of online learning environment on students motivation. Given that learners characteristics including curiosity, resilience and growth mindset have been shown to correlate with basic psychological needs satisfaction and motivation, we aimed to elucidate the dynamic interaction of learners characteristics, satisfaction of the basic psychological needs, engagement and perceived learning in online TBL, and the effect of learning over time.

Summary of Work: 53 preclinical medical students completed the same questionnaire about 6 months apart, at the beginning and end of first semester. The questionnaire measured basic psychological needs satisfaction that encompasses autonomy, competence and relatedness, learner characteristics such as resilience, curiosity, growth mindset and motivation, perceived engagement and perceived learning. Paired t-tests were performed to identify any significant changes in the assessed behavioural measures.

Summary of Results: The paired t-tests showed no significant changes in motivation, curiosity, resilience, and growth mindset of the preclinical medical students over time. There was also no significant difference in the basic psychological needs satisfaction of the students. Lastly, the levels of engagement and perceived learning showed no significant differences across the two timepoints.

Discussion and Conclusions: A 6 month-long period of online TBL classes did not seem to change the learners characteristics or basic needs satisfaction of our preclinical medical students. More importantly, the levels of engagement and perceived learning in an online class remained unchanged across time.

Take-home Messages: Hence, our preliminary results suggest that the engagement and perceived learning in an online learning environment was not affected by the 6-month period during which the students underwent exclusive online TBL learning.
The transition to online learning during the pandemic has emphasised the need to develop fit-for-purpose systems to evaluate these courses. Amongst different evaluation methods, peer observation has been reported as a powerful formative tool to enhance educators professional development. Despite becoming an established practice, this has been almost exclusively restricted to face-to-face activities with lack of peer observation forms designed for online courses. Therefore, the purpose of this study was to seek consensus and develop a feasible and rigorous reporting form specifically aimed for peer observation of the design and delivery of online courses.

An e-Delphi technique was employed to gather consensus on categories/items, and process/structure of the peer observation form. A total of 24 international, expert online educators from clinical and Higher Education backgrounds were recruited through a targeted invitation. The e-Delphi comprised three rounds of online anonymous closed and open-ended questions derived from a literature review. A 75% consensus was considered as the minimum agreement level.

Response rates for each round were 88%, 58% and 50%, with a total of 88 closed-ended and 16 open-ended questions in all rounds. All questions referring to the design and delivery of online courses met the agreement cut-off criteria, while one question achieved consensus regarding process/structure. The resulting form contains eight categories on the design and four categories on the delivery of online courses, presenting their items as a rubric with additional free-text entries and with specific guidelines on how to conduct the peer observation process.

The study was able to identify relevant categories and items regarding the design and delivery of online courses with good level of consensus using the e-Delphi technique, and to therefore develop a feasible and rigorous peer observation form. This form expands the options for peer observation to online courses and contributes to the process of quality assurance and professional development of educators. The next phase of this study will be to pilot-test the developed form in authentic contexts.

The consensus and resulting peer observation form provides educators with a tool to support the sharing of good practices, and to ensure that online learning innovation is evaluated systematically.
#SCOD3.3: SCOD - COVID-19 - Online Education

#SCOD3.3.18 Using Simple Web Technologies to Create a Platform for Teaching on Air During COVID-19 Pandemics: An Experience Shared (8639)

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ABSTRACT:
Background: COVID-19 pandemics brings a massive challenge to institutions lacking a developed e-learning platform. Creating an institutional e-learning platform is a time-consuming task. Using simple web technologies to build small online classrooms might be a low-cost and temporary solution to fulfill the needs of e-learning during this window period. The study aimed to report our experience of designing and implementing an online flipped classroom (FC) via a small e-learning platform created with web-creating software, google forms, YouTube, and web-conferencing software during the 2020 COVID-19 outbreak in Taiwan, and also the participants perceptions.

Summary of Work: To maintain the education in our surgical clerkship during the 2020 COVID-19 outbreak in Taiwan (from March to May), the authors promptly converted a traditional lecture course, Fetal circulation and congenital heart disease: An introduction to an online FC. The pre-class materials were displayed on the instructors website. Three consecutive groups of clerks (n=20 in total) were notified via e-mail with the class information and invited to attend the online class when they visited our cardiac surgery department. In the class, the instructor discussed the online materials with the participants first then started an oral quiz competition to evaluate the individual learning outcome. The quiz content was seven related multiple-choice questions selected from the Database of Taiwan Medical Licensing Examination. An individual perception report was requested after class and thematically analyzed.

Summary of Results: The participants opinions on the pre-class lecture video were high quality, reliable due to the known creator, easily accessed, and flexibility in learning. The oral quiz competition caused anxiety, but most participants were content with their presentations under pressure and expressed an increase of confidence in passing the Licensing Examination after the class. Nevertheless, the participants still showed a strong desire to learn in a hospital environment.

Discussion and Conclusions: Building small online classrooms was a practical strategy to maintain clinical medical education during the pandemics. However, the demand for workplace education is still indispensable.

Take-home Messages: Using simple web technologies to build small online classrooms might be a low-cost and temporary solution to maintain clinical medical education during the pandemics.
#SCOD3.3: SCOD - COVID-19 - Online Education

##SCOD3.3.19 Redesigning a 600+ students course on interprofessional teamwork, human rights and equality as an online course (9563)

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**ABSTRACT:**

**Background:** In the past years, a one day course on interprofessional teamwork, human rights and equality has been conducted at the School of Health Sciences (SHS), University of Iceland. In the morning, first year students from the five departments would meet and listen to 5-6 lectures. In the afternoon, they would meet in groups of 8-12 with a facilitator to go through activities which required them to move around the classroom, as well as to discuss cases and access to health care.

**Summary of Work:** Because of Covid, this course had to be conducted online. The lectures were all prerecorded and made available for students on Canvas before the online group meetings. The 70 group facilitators used either ZOOM or TEAMS to meet their groups. Students returned a feedback survey on how well they thought the course worked. The survey had 13 questions, responses rated on Likert scale, accompanied by spaces for open comments. Answers were coded to hide participants identities.

**Summary of Results:** Participants were 621 students from SHS. Of them, 98% thought the day had worked either well (39%) or very well (59%). Particularly, they thought the exercise on equality was useful to their learning (98%). Open answers supported the quantitative results and indicated that they thought the groupwork as a whole was very successful and expressed surprise on how well the course worked online. The recorded lectures were also highly rated and open comments indicated that students liked being able to watch them at their leisure. Comments for improvement mentioned minimal technical issues (Teams) and some suggested the continuation of the course as an online course.

**Discussion and Conclusions:** Adjusting a large campus-based course to an online course can be a challenge. I will explain the process of redesigning this course to being online in the hope that our experiences can help and inspire other teachers in similar circumstances.

**Take-home Messages:** This last year, we have made large strides in our use of educational technology. We have discovered new possible ways to design our teaching that will guide us forward. We have also learned that usually, the solutions are out there.
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ABSTRACT:
Background: With the onset of the COVID-19 pandemic, social media users have grown by half a billion. Social media is undoubtedly, a key mechanism for communication. Health professions educators must engage with their learners utilizing appropriate social media platforms.

Summary of Work: The Institute for Population Health (IPH) at Weill Cornell Medicine - Qatar uses social media platforms to promote health awareness, educate, and transfer credible health information to the community. Utilizing a strategic approach, a content calendar is planned and relevant content created using best practices. Hootsuite is used to distribute and monitor the content, as well as engage with both local and international audiences.

Summary of Results: IPH has social media presence on 5 platforms. A significant growth has been seen in our virtual reach, brand awareness and virtual engagement across all platforms since 2019. Most of this growth has been obtained with no paid promotions or advertising. Currently, the IPH LinkedIn page has the highest following and the IPH Twitter handle, the least. YouTube has few subscribers but has proved useful by virtue of its flexibility to host video content.

Discussion and Conclusions: Social media use is ubiquitous. Evidence shows that social media platforms are being used for education in several medical specialties such as anatomy, electro-cardiology, dentistry, and nursing. Additionally, the use of social media platforms in interprofessional education (IPE) is known to help overcome many challenges associated with IPE learning activities such as schedules, meeting locations, limited faculty and financial resources. The IPH framework can be used by health professions educators to use social media platforms for teaching, engagement and active learning. Popularity of the platforms varies among age groups and each platform distributes information differently with text/visual combinations. Effectiveness of content should be monitored to guide and plan content creation, distribution, and engagement with the learners.

Take-home Messages: Healthcare professions educators should prudently utilize social media to increase personal awareness of news and discoveries, develop a professional network and leverage social media platforms for active, learner centric activities for their learners. However, success stories require planning, patience, perseverance, commitment, and due diligence.
#SCOD3.4: SCOD - COVID-19 - Postgraduate & Continuing Education

#SCOD3.4.1 Exploring the experiences of shielding medical trainees during the Covid-19 pandemic (9431)

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ABSTRACT:
Background: During the COVID-19 pandemic some 2.2 million people in the UK, identified as clinically extremely vulnerable to severe complications from COVID-19, were advised to shield (Office for National Statistics, 2020). This encompassed those with health conditions or on medication that made them vulnerable to severe disease, as well as pregnant persons (Public Health England, 2020). Shielding individuals were advised against any contact with others outside of their household and were required to remain in their home or garden (Office for National Statistics, 2020).

Summary of Work: The above instruction presented a particular challenge to medical trainees who had to find ways to work clinically from home such as conducting remote consultations. Or to change their duties including suspension of their clinical duties and diversion to new types of work (Miller, 2020). Qualitative interviews will be conducted with medical trainees who shielded during the pandemic to explore the impact of this experience. This will be followed by thematic analysis of transcripts.

Summary of Results: Data collection is ongoing at the time of writing. There is a paucity of research available on this topic. Adding to empirical research in this area would offer valuable insight into the positive and negative implications of shielding to medical trainees with respect to several factors such as training, career progression and health. That which is available highlights feelings of exclusion from their teams, as well as concerns about their safety and return to work (Rimmer, 2020). There are some articles available on the impact of shielding in different patient groups (Radtke et al, 2020). However with this project I hope to specifically highlight the demands unique to medical trainees.

Discussion and Conclusions: Outwith the pandemic the findings are potentially transferrable to other situations where medical trainees are away from their role for a protracted period of time such as maternity leave. This project aims to inform our understanding of the experiences of these trainees during the pandemic and how we might best support them.

Take-home Messages: 1) All medical trainees can make a valuable contribution, 2) It is important to understand the impact of the pandemic on shielding trainees as well as frontline trainees.
#SCOD3.4: SCOD - COVID-19 - Postgraduate & Continuing Education

#SCOD3.4.2 Embodied teaching: Practical sense as a basic pedagogical condition in times of Covid-19 (8106)

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ABSTRACT:
Background: The Covid-19 pandemic redefines how we think about teaching and our self as teachers. Before the pandemic, the majority of teaching at universities was still organized as face-to-face activities. During Covid-19, teaching contexts became more - if not entirely - digital and remote, and teaching via digital platforms became the new normal. As teacher identity develops in a dynamic interplay between changing teaching contexts and personal interpretative frameworks, we assume that teacher identities may be disrupted by the new normal. Studies on the effect of the Covid-19 pandemic have largely focused on students learning and well-being. Little attention has been paid to the impact Covid-19 have on teachers. Consequently, this study raises the question: How does the change in teaching contexts during Covid-19 affect teacher identity?

Summary of Work: Interviews with 19 experienced health science educations teachers were analyzed through a systematic text condensation method, where longer pieces of text (meaning units) were assigned different codes. The codes were compared across the interviews to identify crosscutting themes, which were then synthesized into descriptions of the phenomenon under investigation.

Summary of Results: Analyzes indicate that a form of practically embodied teacher identity constitutes a basic condition and a resource for the teachers, and that the sudden change in the teaching context has meant a loss of teacher identity. The loss relates to an incorporated use of, understanding of, and response to: 1) non-verbal cues from the students, 2) mutual visual relationships between the students and the teacher, and 3) the spatial sense of the teaching context. The results vary depending on the teachers self-understanding as a bearer of knowledge or a facilitator of learning.

Discussion and Conclusions: The results raise questions about an overlooked basic condition in teaching, namely that teachers use their practical sense (Bourdieu 1998) - an incorporated knowledge that refers to ways of doing and handling things using knowhow and a feel for the game (Bourdieu 1990) - in navigating and adjusting the teaching. Moreover, the actual use of the practical sense is highly motivating for the teachers.

Take-home Messages: The new normal of digital and remote teaching disrupt teacher identities by dismantling the practical sense of teaching.
ABSTRACT:

Background: The Covid-19 pandemic limited the usual development of residency programs. Today the IUHIBA is responsible for the management of 49 residencies with more than 600 professionals in training. In this context a plan for academic continuity was designed with the collaboration of the university rector who participated in both the hospitals and universitys crisis committees.

Summary of Work: This work describes the action plan implemented to ensure academic continuity and reduce the impact of confinement in the residency training programs. This plan involved: continued consults to teachers and residents on the effects of the pandemic on teaching and learning, the use of online platforms to promote educational exchange, the development of teacher training and wellness programs.

Summary of Results: Of the 481 residents and 43 teachers consulted, most mention that the mandatory reduced stay and the decreased number of patients in the hospital context diminished the formative opportunities and hindered the completion of the training program. However, the increase in online academic activity was highly valued and the use of synchronous (Whatsapp) and asynchronous (Moodle) delivery channels allowed for fluid bidirectional communications. The plan for academic continuity enabled: weekly meeting with the infection control committee, the participation of 658 teachers in 4 teacher training modules, 13 training activities at the simulation center, 2 courses on curriculum adaptations for 100 chiefs of residents. Through individual and group interviews, a confidential direct line was established to offer support to residents.

Discussion and Conclusions: This integral plan favored residents and teachers necessities through a synergic approach between different actions that allowed for academic continuity in the residency programs and the mitigation of missed learning opportunities.

Take-home Messages: The Covid experience evidenced the lack of emergency contingency plans in education. Faced with uncertainty, the adoption of interdisciplinary approaches and a reconfiguration of institutional actions is required for a rapid response. The strengthening of hospital–university bonds and new ways of teaching and learning in residency programs will be accomplishments that remain.
Virtual interviews in a resident selection process: The interviewers’ experience (9777)

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ABSTRACT:

Background: The resident selection process includes an exam for knowledge assessment and a on-site interview. Each interview committee is composed of two internal interviewers, the director and coordinator of the residency, and a third interviewer external to the program. During the pandemic this process was redesigned to allow virtual interviews in 47 specialties.

Summary of Work: This work aims to explore interviewers perceptions on the strengths and weaknesses of virtual interviews through a quantitative and qualitative cross-sectional study. Two different electronic questionnaires were sent to internal and external interviewers with an average of 20 open and closed questions. The results were analyzed using descriptive statistics and iterative thematic analysis for the open ended answers.

Summary of Results: The survey was answered by 42 interviewers (29%). Over 90% used the structured interview guide provided by the university and 100% stated that the interviewees word was respected. The interviewers highlighted the process was well organized allowing to get to know candidates and their technological skills, and a following exchange between interviewers. Many indicated that through virtual interviews body language was lost. The main aspects to improve were: explicit rules on the use of camara, microphone and interview recordings; the regulation of number of interviewers per committee; technical support. Although the increased number of interviews conducted per day was viewed as a positive aspect, interviewers also pointed out exhaustion and lack of concentration as issues to consider.

Discussion and Conclusions: The virtual interviews allowed for a well organized process in which the voice of interviewees was respected and a deeper knowledge of them was gained. In future selection processes: a technical guide will be issued, less interviews will be scheduled per day and only 3 interviewers will be permitted per committee.

Take-home Messages: Although interviewers indicated a preference for face-to-face interviews, the virtual modality enabled the completion of the resident selection process.
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Sheng-Jean Huang, Taipei City Hospital, Taiwan

ABSTRACT:  
Background: There is limited research focusing on how an institution knows the knowledge gaps among different healthcare workers. After that, the hospital can build an integrated continuing education program to improve the health workers ability from infection and keep the updated knowledge during this rapidly changing pandemic era. This study aimed to identify the knowledge gaps experienced by healthcare professionals in different specialties and develop an integrated continuing education model to educate different hospital staff categories on the basics of COVID-19.

Summary of Work: We validated ten multiple-choice questions to identify knowledge gaps among healthcare workers. Within one month of the online test and curriculum offering, 5,533 staff had completed the test, with a completion rate of 84.97%. There were 2,618 healthcare workers who answered the pre-test 100% correctly. Those who did not answer the pre-test 100% correctly took multiple tests after learning through the online teaching materials. Eventually, 5,214 staff passed the test (pre-test or post-test with 100% correct answers).

Summary of Results: The result showed that all staff had a low correct rate for personal protective equipment (PPE) use recommendations. The Infection Control Center conducted training sessions on how to wear protective clothing. Information on the selection and use of PPE for infection prevention was provided, and participants were allowed time to practice and familiarize themselves with the correct way to wear PPE. Moreover, the Department of Education and Research continued updating the online learning materials based on the most important updated peer-reviewed published articles. The attending teaching physicians helped to search, translate, and take notes on articles in the local language (traditional Chinese) for other colleagues to read easily.

Discussion and Conclusions: We expect to increase learning opportunities for healthcare workers, even during uncertain times such as the current corona-virus pandemic through (1) the hospital wide course announcements, (2) the continuous placement of test questions and learning files on the digital learning platform, (3) the placement of journal highlights in cloud folders, and (4) the use of the digital learning platform on mobile phones accessible outside the hospital.

Take-home Messages: This study has identified knowledge gaps regarding COVID-19 and developed an integrated educational program for healthcare workers.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.1 The BeTeR Project: BEside TEaching Remotely for Students in Paediatrics (9443)

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ABSTRACT:
Background: The COVID-19 pandemic significantly reduced medical students’ time in clinical paediatrics, particularly when self-isolating. Remote classroom teaching and video clinics are now routinely attended by medical students and provide important education. However, ward-based bedside teaching sessions remain an unmet student need when isolating. Adult medicine ran a pilot of remote bedside teaching in our hospital. We recognised specific information governance (IG) and practical considerations when introducing this activity to paediatrics. We present our model to address these paediatric considerations.

Summary of Work: Working with a variety of clinical and non-clinical stakeholders in the Trust and University we designed an agreed schema for delivering hospital-based bedside teaching remotely. Adapting existing resources, from primary care remote consultations, we created a Facilitators Guide, Student Etiquette Guide, and an adapted student IG and Confidentiality Agreement to support maintenance of good practice. Informed consent is supported by a bespoke Patient Information Sheet combined with a standard Trust Medical Illustration Consent Form. The session uses Microsoft Teams to securely stream an Education Fellow with a paediatric patient, and parent or other legal guardian, teaching at the bedside. A small group of students join the Teams call remotely and can ask questions directly to anyone involved. An additional Education Fellow joins the call remotely to supervise the students. Data will be collected, looking at patient, family and stakeholder acceptability, and student feedback, focusing particularly on knowledge and skills gained, and comparison with conventional bedside teaching.

Summary of Results: Student, patient and family experience data awaited.

Discussion and Conclusions: This work has shown that using or adapting existing documents (e.g. University remote teaching agreements) can facilitate design and approval of a novel teaching activity. However, it also demonstrated a requirement for development of novel documents (e.g. Facilitator Guide). The detailed facilitator guide was also important in gaining approval from various stakeholders and concisely communicating how we had mitigated for potential pitfalls. Our findings may help others seeking ways to improve medical education during the pandemic.

Take-home Messages: Use, or adaptation, of existing education, IG, and consent documents aids the approval process when designing novel teaching activities in paediatrics. Detailed Facilitators Guides communicate risk reduction strategies concisely.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.2 Logging Clinical Teaching During the COVID-19 Pandemic: Keeping Students Safe While Recognising Clinical Teaching (8554)

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ABSTRACT:
Background: The initial wave of COVID-19 saw swift changes to the medical education landscape as universities were closed, clinical rotations cancelled, and learning moved online. To facilitate the safe return of medical students to the clinical setting, a robust method of contact tracing for clinical and educational interactions to isolate any outbreaks and interrupt the chain of transmission was described. Here a quick response (QR) code system for comprehensive contact tracing is described and its use in the quantification of clinical teaching during a pandemic reported.

Summary of Work: Following institutional approval, a prospective, observational study utilising a secured web-based form with a QR code to log all interactions and clinical teaching was designed by a shared partnership team of final year medical students and academics. This QR code was distributed to all clinical staff and students so as to capture all clinical-teaching encounters and enable contact tracing if necessary. From September to December 2020, 144 students returned to clinical practice. Every clinical interaction with staff or lecturers was logged using the QR code.

Summary of Results: All students participated in the project. In total 5,803 hours of clinical teaching were logged from 3,453 encounters, with a median of 31.9 hours per student. Of the 212 clinicians logged as educators, the median hours teaching were 27.3. The log was not required for contact tracing during this time.

Discussion and Conclusions: The response to the Covid-19 pandemic requires practical solutions and medical education should be no different. The QR code system enabled the safe reintroduction of students to the clinical environment and for the first time quantified the amount of teaching students receive on clinical placements. The continued commitment to teaching from all levels of staff and each discipline within the hospital was evident.

Take-home Messages: Despite some of the benefits to online teaching, it would be an unrealistic expectation that online content could replace the 5,803 hours of in-person clinical teaching that the students received. We believe that this work supports the safe return of medical students to the hospital setting.
#SCOD3.5: SCOD – Response to COVID-19

#SCOD3.5.3 Debates in the medical curriculum promote essential higher order communication skills (9738)

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ABSTRACT:
Background: Undergraduate medical students need strong skills in communicating information to their clients. Competencies and skills acquired as undergraduates must be transferable into evidence-based medical practice grounded in both effective communication skills and socio-cultural and behavioral proficiency. Controversies related to health have long existed: tackling them is intrinsic to public health practice. The COVID-19 pandemic makes it imperative for all health professionals to have excellent communication skills in order to gain support for necessary public health policies and interventions.

Summary of Work: At the College of Medicine and Health Sciences, UAE University, debates are included in Professional Practice and Communication courses in the early undergraduate program. Students suggest social, cultural, ethical and health topics. Their instructors develop motions. Students prepare arguments in teams, and formal debates follow. Post-debate reflection tasks are required. We recently adapted the debate format for smaller groups in Public Health clerkships to encourage development of skills in addressing controversial health topics. We analyzed debate topics and student reflections on debates. We surveyed students views of the benefits of debates for their learning outcomes and future practice, for senior students focusing on how debates may improve their communication competencies and ability to discuss health messages with patients and families.

Summary of Results: First year student reflections focus on freedom to discuss controversial topics. Enjoyment of the activity is also key. Second year students focus on topic and communication skills learned, including seeking evidence. Some find preparation onerous; nevertheless, they enjoy the debates.

Discussion and Conclusions: Debates promote development of communication skills and critical thinking, and encourage students to synthesise data and present arguments - skills and competencies essential for future medical professionals and public health practitioners. Formal debates are beneficial educationally, and judicious use within the curriculum engenders student enthusiasm. With senior students, an adapted debate format facilitates discussion of public health issues and development of skills to present evidence to the public in a convincing way.

Take-home Messages: The COVID-19 pandemic has highlighted the need to improve medical and health students readiness to address emerging controversial public health issues. Debates engender student enthusiasm while promoting high-level integrated communication skills. Worth trying!
ABSTRACT:

Background: The current COVID-19 pandemic sets unique challenges for medical clinical education. The current hospital policies restrict the maximal persons allowed in a room leading to limitations in exposure for medical students during their clerkships. The daily clinical rounds are a main aspect of the clinical work of junior doctors. During the clerkships, the clerks gradually transform from an observer into an active player in managing the patient, requiring integration of the skills observed. Although many aspects of the clerkships can be substituted with digital methods, we currently did not have an alternative to reach the learning goals met during the rounds.

Summary of Work: The goal is to implement a learning activity that is a substitute for live clinical rounds for clerks in the internal medicine clerkship. For optimal resemblance, the activity should comprise live view and sound, options for observation and active learning and supervision, to provide numerous learning goals, including communication with patients and colleagues, decision making, constructing a patient file, and consultation with the supervisor.

Summary of Results: Using a head-mounted camera, one of the students physically joins the clinical rounds. The other students digitally attend in real-time, while interacting. The head-mounted camera provides a first-person view, enabling a real-life experience. Furthermore, the digitally attending students use the electronic patient records to directly note the findings, review medical information and execute the medical plans. After the rounds the resident evaluates the rounds with the physically and digitally present medical students. For evaluation, qualitative questionnaires will be used to evaluate the experience and learning goals of the students. A comparison will be made within students to assess the experience while being physically or digitally present during the rounds.

Discussion and Conclusions: This approach is currently piloted in one of the internal medicine wards. The first impressions are that the virtual rounds an important addition to the clerkships. The feedback, which mainly encompassed technical issues, is used to further improve the method.

Take-home Messages: The implementation of digital rounds within the clerkship provides students the possibility to achieve the learning goals of observing and participating with the rounds.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.5 Virtual Morning report: IKHC Department of Medicine Experience to cope with COVID-19 pandemic (9465)

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ABSTRACT:
Background: Morning report is a mainstream of clinical education at Department of Medicine of IKHC. All face to face teaching sessions has been banned after the first cases of COVID-19 on early February 2020 in Iran. Despite all challenges it seemed necessary to maintain the MR as main venue of educational activities and a symbol of the commitment to educational mission.

Summary of Work: After the first phase of shocking situation passed, the education committee of Department has decided to revitalize MR by transforming it to a virtual enterprise. It has been take place in several steps including clear decision for restarting the MR in virtual format, developing a guideline for conducting the MR in virtual format, selection and familiarization with appropriate online platform, Orienting the faculty members and trainees to participate and present cases in online platform, preparing the required infrastructure. From late April until now, the MR of Department of Medicine has been hold regularly and 5 days a week. Besides continuous monitoring, it has been evaluated by an online survey by 25 closed questions with 5-likert scale options and one open questions on January 2021.

Summary of Results: The average response rate was %70. More than %90 of respondents agreed with having VMR during COVID-19 pandemic. More than %90 agreed that the most important mission of MR is cased based teaching.. The satisfaction rate of case diversity was %56 and %59 among residents and interns respectively while it was only 48% for faculty members. The satisfaction rate about the quality of case discussions was %69, %72 and %64 for residents, interns and faculty members respectively. The satisfaction rate about the quality and quantity of interaction during VMR was significantly lower.

Discussion and Conclusions: Despite some dissatisfaction among faculty members and trainees about the quantity and quality of interaction during VMR, the overall satisfaction rate is high. The department education committee proposed a plan for improving the quality of VMR.

Take-home Messages: COVID-19 is a real disaster for clinical education, but it should be considered as an opportunity to show the resilience, innovation and commitment of academic departments to their educational mission.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.6 Virtual Early Clinical Contact: An oxymoron? (9023)

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**ABSTRACT:**
Background: As a result of COVID-19, the number of students allowed to be present in clinical areas at any one time has been limited, for good reason. However, this has disproportionally affected students earlier on in their medical school studies, especially those with early clinical contact as part of their curriculum, as more senior students are often prioritised to be present in clinical areas. Therefore, innovative ways to provide clinical contact to students towards the start of their studies were required.

Summary of Work: Virtual clinical contact sessions were delivered over virtual videoconferencing platforms to all year 1 and 2 students at a single medical school across two hospital trusts. Sessions included the use of history taking from expert patients, interactive clinical vignettes, multiple choice polls, reflective discussions and observed examinations. Clinical teaching fellows ran the sessions, and fifth year medical students were also involved in the delivery of sessions focusing on clinical examination. Feedback was collated from students after each session using electronic forms made on Microsoft Forms. The feedback forms included Likert scales, ratings out of 10 and free text comments.

Summary of Results: Student response rates to feedback forms ranged from 18-58%. Mean rating for sessions was 8.35 out of 10. Areas that were commonly commended were the interactive nature of sessions and being able to talk to patients and doctors. However, students at times felt sessions could be improved by having smaller breakout room sizes for expert patient sessions. It was also challenging for a small number of students without a reliable internet connection.

Discussion and Conclusions: We have shown that it is feasible to have a form of clinical contact in a virtual environment and continue clinical contact sessions during the COVID-19 pandemic for junior students. Sessions were overall well received and included patient contact. But technical issues and group sizes did sometimes hinder the approach. It is important to be mindful of group sizes for breakout rooms.

Take-home Messages: Virtual clinical contact is not an oxymoron- it is possible and well received by students.
ABSTRACT:
Background: Given the inherent limitations of hospital training in developing non-traditional outcomes such as leadership, nationalism, and social accountability, e-Service Learning Elective was offered for the first time to the Junior and Senior Medical Interns of the College for the academic year 2020-2021. This was done through three tracks: Community Health, Public Health Informatics, and Global Health, which were independently held for one month. This project aims to design an innovative course that promotes critical thinking, problem solving and the application of knowledge to real-life situations utilizing the framework of service learning.

Summary of Work: Guided by the principles of outcome-based and transformative education, the evaluation of this program will be done through the review of student outputs, performance, reflections, and evaluations.

Summary of Results: The data gathered will allow us to determine if this new approach enables us to provide opportunities for our students to identify real-world problems and collaborate with stakeholders to find solutions and, in so doing, to enrich the student experience and promote deeper, more effective learning, particularly for the non-traditional and non-clinical program outcomes.

Discussion and Conclusions: As the CoViD-19 Pandemic resulted to shifts in teaching methods, the activities for this elective are designed to meet its objectives using online and/or remote access methods. Despite the current restrictions, the course aims to deliver the essential lessons the students should learn without compromising significance and quality. Service learning is a structured, deliberate and purposeful approach to both community service and learning. It integrates learning goals, reflection, and community engagement such that both the student and the community will benefit from the process. This non-traditional elective aims to enrich the students academic journey by providing opportunities to address real-world problems and promote authentic, experiential learning.

Take-home Messages: Recognizing the transformative potential of education, it is our aim to realign medical pedagogy to not only develop clinical competence, but also non-traditional (and less tangible) outcomes like professionalism, the systems-based approach to healthcare, nationalism, and social accountability.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.8 Virtual peer role-play during COVID-19 pandemic for teaching medical students how to break bad news (9533)

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ABSTRACT:
Background: SARS-CoV-2 pandemic has led to public health measures to prevent the virus spreading that significantly impacted medical students curriculum. In particular, the directed studies to teach communication skills on how to break bad news (BBN) are challenging as they require simulation-based face-to-face peer-role play.

Summary of Work: We set up webex-based virtual peer role-plays (VPRP) to train 237 medical students for BBN. Students satisfaction on VPRP session regarding quality (realism, organization), interest, perceived benefits was very positive. VPRP are feasible, of low cost (no material is required), applicable to other healthcare students and is relevant to the growth of teleconsultation.

Summary of Results: A total of 237 students received the training (10 VPRP simultaneous sessions). Before the VPRP session, each students was asked to complete a 5-item self-questionnaire (response rate: 89%). Two-thirds of the students had never participated to any peer role-play session. Most students had a low level of confidence (level 1-3, 70%; median=3) in BBN but were motivated to participate to the VPRP session (level 4-6, 58%; median=5). A post-VPRP session self-questionnaire (7-item) was proposed to students (response rate: 48%). Most students (94%) rated the teaching as good to excellent and the scenario as very realistic (79%). Most of them (67%) reported a great interest in VPRP session participation. Indeed, 79% of students stated that VPRP session was a helpful training in BBN communication. In particular, most of them (79%) felt better prepared for BBN communication after the VPRP session and recommended that the VPRP training session being maintained in the curriculum of future students.

Discussion and Conclusions: VPRP sessions are low-cost, easily applicable, allowed teaching continuation and are relevant the challenges associated with teleconsultations and telephonic conversations. Overall, while the 48% rate of response to the post-VPRP questionnaire may be associated with a potential bias, we feel VPRP sessions are realistic, valuable and an effective method for learning BBN communication skills.

Take-home Messages: VPRP is an innovative approach to teach BBN communication skills associated with students satisfaction; is feasible, low cost, and relevant to the growth of telemedicine; it does allow teaching continuation in the context of SARS-CoV-2 sanitary crisis.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.9 Experiences of patient death: Voices of Foundation Doctors in the coronavirus pandemic (9675)

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ABSTRACT:
Background: The transition from student to doctor places new doctors under physical, emotional, and mental strain. A key point of stress identified is exposure to patient death, with doctors feeling under-prepared and emotionally uncertain as they care for patients at the end of their life. Their workplace, and interaction with peers, play a crucial role in such experiences. In the UK, the coronavirus pandemic has accelerated foundation doctors exposure to patient death. With some of the highest excess death figures in Europe, those tasked with caring for Covid patients have been particularly impacted. The challenges faced provide an opportunity to understand how professional identity develops with patient death experience, and have important implications for support provision. This is a crucial time to hear from foundation doctors themselves, in order to understand their experiences and the lessons we can learn for the future.

Summary of Work: Semi-structured interviews are currently being conducted with 15 UK foundation doctors from the Northern Foundation School who have had experiences of patient death, before and during the pandemic.

Summary of Results: Thematic analysis is ongoing, and will explore the changes that foundation doctors identify in themselves over a period of exposure to patient death, the impact on their professional identity as they transition from medical student to doctor, and the support they value. Initial observations of the data indicate that the pandemic has challenged foundation doctors views on professional detachment and how they can best provide a good death. Early findings suggest that they have felt required to step up in family members absence and carry more of the emotional burden, heavily relying on support from peers and the clinical team to cope.

Discussion and Conclusions: The findings will aim to inform support following patient death and how this is best provided, both in the context of the pandemic and more generally. It will also seek to explore the impact of patient death experiences on empathy and professional identity development.

Take-home Messages: The coronavirus pandemic has presented our most junior doctors with an unprecedented level and intensity of exposure to patient death. These experiences have likely been transformative with important implications for support going forward.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.10 Virtual consultation with Supervisor On Wheels as a solution for medical education during the COVID-19 pandemic (8985)

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**ABSTRACT:**

**Background:** The current pandemic restricts physical interaction between physicians in the field, their patients and medical students potentially limiting achievement of certain learning goals linked to the internal medicine clerkship and residency. It is however paramount to develop alternative methods to guarantee a solid basis for future doctors and consultants. A potential interesting alternative and solution could be virtual consultations which have been introduced at the Leiden University Medical Center.

**Summary of Work:** Our goal with virtual consultations is to create an active learning environment in which medical students and/or residents can be supervised remotely. This allows amongst others direct assessment and observation of both communication and clinical skills, lowering psychological barriers for the student/resident, and increasing patient-doctor interaction due to the physical absence of the supervisor. Hence, time-efficient assessment, evaluation, and feedback on medical skills is still guaranteed by a superior, albeit remotely. With appropriate informed consent of patients, recordings could also be made for training purposes.

**Summary of Results:** We have implemented a Supervisor On Wheels by using a tablet, linked safely to the hospital network, with a live voice- and sound connection enabling three-way interaction between the supervisor, patient and medical student if needed. Formal evaluation is ongoing to improve the virtual experience for all parties.

**Discussion and Conclusions:** Remote virtual consultations offer a good alternative to continue clinical medical education and prevent significant backlog in the development of medical skills during the pandemic. Presumably these applications continue to be of additional value in different aspects of medical education in the period thereafter. Virtual consultations could be the basis of new innovative learning methods which should be further explored in future research.

**Take-home Messages:** The current pandemic accelerated development of new learning methods of which virtual consultations are promising.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.11 Adaptation of rural rotation for final year medical students in response to Covid-19 in South Africa (9449)

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ABSTRACT:
Background: University of Cape Town (UCT) suspended all activities in response to Level 5 lockdown, including final year medical students. This included a week rotation in rural Family Medicine: a single site that the whole class visits in groups of 3-6. Often this is the only time they train in District Health care: a smaller hospital with only a Family Physician as specialist and surrounding nurse-led PHC clinics. Majority of RSA is service by this system and after internship the young doctors are allocated by the government to specific institutions to complete a year of community service, often within the District hospital system. Yet, even if a doctor remains within an urban setting, it is important to have a concept of the ability, facilities, and skills in district care in order to render optimal care i.e., whether to advice or accept the patient.

Summary of Work: The Deanery reduce all rotations to 3 weeks and all activities revised and remodeled. Blended learning methods with synchronous and asynchronous activities were developed but further refining had to be applied to this rural rotation as infrastructural constraints led to a weeks exposure being reduced to 3 days. Alternatives for onsite visits had to be found in case a local spike in Covid-19 shuts down the site. The introduction, orientation and tutorials were all recorded and placed on UCTs teaching platform for asynchronous access. The local lecturer additionally did telephonic check-ins on arrival, and ensured preparation in order to optimize their clinical time. Before visiting sites, she updated them on the latest local statistics, protocols and managed their fears and expectations and also did a debriefing before departure.

Summary of Results: Despite a 3-day rotation, all the limitations imposed by Covid protocols and limited physical interaction, the students still identified this a powerful rotation with specific mention of personal interaction: informing, reassuring, mentoring them into action.

Discussion and Conclusions: above

Take-home Messages: Despite the limitations imposed by the pandemic, personal engagement, out-of-the-box thinking and being opportunistic allowed this to be a highly successful rotation: achieving the outcomes it set to meet and being deemed as a critical component of their student training.
SCOD3.5: SCOD - Response to COVID-19

SCOD3.5.12 An adaptation of Peytons 4-stage approach to enable the delivery of remote clinical skills teaching (8469)

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ABSTRACT:
Background: Students on our MBBS course are taught clinical skills during their early years, prior to clinical placements later. Clinical skills teaching is delivered through a comprehensive programme covering the entire breadth of medicine, surgery and specialties. The teaching is led and supervised by lecturers and delivered by peer tutors in small group sessions. In March 2020 the UK government enforced a nationwide lockdown to curb the spread of Covid-19, which has resulted in medical schools having to close and deliver teaching remotely through online platforms. This presented a number of challenges, especially for clinical skills teaching which is usually very hands-on.

Summary of Work: We adapted Peytons 4-stage approach to devise a tool that can be used to structure and deliver clinical skills teaching remotely to small groups, aided by online videos. Our framework preserves the most important aspects of the 4 stage process and allows teaching to be delivered remotely providing a unique learning experience that replicates conventional face-to-face teaching practices as closely as possible.

Summary of Results:
SUMMARY OF OUR REMOTE 4-STAGE APPROACH FRAMEWORK
1) DEMONSTRATION: Demonstration of skill with video, at normal speed without commentary
2) DISCUSSION: Discussion of skill with teacher, augmented with multiple short video clips which are time-stamped, and linked to relevant teaching material in a structured, focused way
3) COMPREHENSION: Narration of skill by students, with help from other students- going around the group in MS Teams
4) CONSOLIDATION: Q&A and clinical contextualisation

Discussion and Conclusions: Our remote Peytons 4-stage approach framework enables educators to deliver clinical skills teaching remotely using online platforms, providing a unique learning experience that replicates the most important aspects of conventional face-to-face teaching practices.

Take-home Messages: The Covid-19 pandemic has compelled universities across the world to deliver teaching remotely instead of face-to-face. This presents a significant challenge. Our adapted Peytons 4-stage approach framework enables educators to deliver clinical skills teaching remotely using online videos, in a way that retains the core principles and structure of conventional face-to-face methods, whilst exploiting the advantages and functionality of online platforms. This tool also preserves the most important aspects of the 4 stage process within the limitations of a remote set-up.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.13 Construction of the illness script of COVID-19 (8270)

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ABSTRACT:
Background: Illness scripts acquisition and enrichment relies on clinical practice, and less on education. They are organized mental representations of a disease. They are built on the triad of enabling conditions (e.g. age,), fault (pathophysiology), and consequences (e.g. signs, symptoms) and are organized for action. Our research aimed at understanding how the script of COVID-19 developed amongst physicians.

Summary of Work: The qualitative design of this study was based on grounded theory. The analysis of data collected during these focus groups allowed us to contrast the usual construction of clinical scripts versus that of COVID-19. We conducted focus groups and interviews with physicians with different levels of experience and involvement in clinical settings.

Summary of Results: Our results show that the illness script of COVID-19 varies greatly amongst physicians, and notably in terms of richness (i.e. the capacity to generate relevant information on all 3 illness script components). Interns, had more direct (frontline) exposition to patients, enabling them to create script that were particularly rich in the consequences component. Attending physicians, instead, had a more global view of the situation including the effects of the pandemic on the institutional landscape; their illness scripts were richer in the Fault and the Enabling Conditions components. These features depend on physicians exposition to patients with COVID-19, as well as on the range of illness severity of patients (asymptomatic to critical). ICU physicians, mainly dealt with intubated patients, and communication with families was reliant on video- phone-calls, and devoid of nonverbal-cues since families were not allowed in the hospital. Primary care physicians on the other hand had a more longitudinal approach to the care.

Discussion and Conclusions: This study allows us to deepen our understanding on what influences the construction of illness script and how it is enriched over time. Further studies should assess how this illness script will evolve and its impact on clinical reasoning.

Take-home Messages: The illness script of COVID-19 was one that was and still is changing, as the situation is constantly evolving. New guidelines are continuously implemented and therefore the script is rooted in uncertainty.
Could Narrative Medicine escalate empathy for young physicians? Implementing a workshop of Narrative Medicine to foster empathy in PGY1 Orientation in COVID-19 Pandemic (8079)

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ABSTRACT:
Background: When it comes to professionalism, empathy is one of the leading attributes. Studies reported physicians with empathy were associated with higher diagnostic accuracy, patients satisfaction and lesser patients stress. Empathy encompasses cognitive and affective components. Past studies showed empathy declined as medical school students and residents started their clinical encounters and practices. Toronto's empathy questionnaires (TEQ) has been validated for both cognitive and emotional empathy in Mandarin-speaking from a study in 2020. This study aims to learn whether a narrative workshop could lead to higher empathy during this pandemic of COVID-19 for young physicians.

Summary of Work: Twenty-five postgraduate year one (PGY1) physicians attended a scenario-based cases narrative medicine workshop for their core competencies orientation. TEQ was translated into Mandarin and was accessed as online google form by the PGY1 during the workshop to evaluate PGY1s empathy scale before and after workshop.

Summary of Results: The mean and standard deviation of TEQ pretest was 42.32, 3.58 while 43.28, 4.15 for that of posttest. The scale was higher for the posttest of TEQ. While deploying the paired t test to examine the differences between the pretest and posttest of TEQ, the P value was 0.126, and so there was no statistically significant difference. Among each item analyses, most items showed increased figures, yet most items didn't manifest statistically significant differences.

Discussion and Conclusions: The narrative medicine workshop for PGY1 showed posttest TEQ scale increased slightly as compared to that of pretest. But there was no statistically significant difference. The results were encouraging as this narrative medicine scenario-based workshop might lead to increased empathy for PGY1 even though the differences were not statistically significant. In the future, we might renovate the narrative workshop with a reflective essay writing to enhance empathy.

Take-home Messages: To deploy narrative medicine workshop through a case-based scenarios (extracted from a piece of mind in Journal of American association to escalate PGY1 empathy in their core competencies orientation course seems feasible. As the results showed the mean posttest TEQ scale 43.28 increased slightly as compared to that of the pretest 42.32. Further enhancement such as reflective seminar might be implemented for bettering the professionalism for these PGY1.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.15 Near peer video consultations: A viable learning modality during and after social isolation (8247)

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ABSTRACT:
Background: The COVID-19 pandemic presented many difficulties for teaching medical students. Social distancing requirements considerably reduced medical students opportunities to engage with patients gaining important interactive skills. In addition, physical isolation reduced students connection and interaction with each other. The aim of this project was to determine the viability and acceptability of developing students skills in explanation using peer tutors and peer-simulated patients via a video conferencing system.

Summary of Work: Junior students (tutees) were allocated two of 10 cases, one as simulated -patient and one as a simulated-general practitioner (GP). The tutee ran a consultation with the peer -simulated patient focusing on explanation and planning. Sessions were facilitated by a more senior student (tutor) who ran a de-briefing session after observing the consultation, focusing on a feedback conversation with the student GP. After the activity an electronic evaluation was circulated to all participants. Questions were asked regarding the logistics of the session in addition to perception of learning, their views of the student tutor and also the value of simulating a patient.

Summary of Results: Over 50% of tutors (11/18) and tutees (35/59) responded to the survey. Ninety four percent of participants (43/46) felt that zoom platform worked well technically. All students agreed (41%, 19/46) or strongly agreed (59%, 27/46) that the interview went well. Nearly all students, irrespective of seniority, agreed (30%, 14/46) or strongly agreed (65%, 30/46) that the experience was valuable for their learning. All students agreed (4%, 2/46) or strongly agreed (96%, 44/46) that this video conferencing session was a valuable learning activity during social isolation. In addition, 78% (36/46) thought this would be valuable even when there was no isolation.

Discussion and Conclusions: The success in both feasibility and acceptability suggests that this type of learning opportunity should become more prevalent in medical education. It not only develops the practice-based skills of the students but also enhances familiarity of using telemedicine to deliver health care, a modality that may become more customary in the future.

Take-home Messages: Simulated Zoom consultations could be considered as a mainstream learning tool to develop student skill and familiarity with use of telehealth to deliver health care.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.16 Impact of Rapid Digitalization on the Medical Faculty (8765)

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ABSTRACT:
Background: The St Lukes Medical Center College of Medicine embarked on digitalization a few months prior to Covid19 pandemic. Once the lockdown was declared on 15 March 2020, the Commission on Higher Education and the Department of Education subsequently suspended all face-to-face delivery of classes on all levels, suddenly the Covid19 pandemic caught up with the early preparation, and it set the pace for the rapid digitalization that followed in the medical school. While it helped that the direction was clear to the stakeholders pre-Covid19, the speed of implementation meant that there was no time to get used to digital teaching. It also meant that the faculty had to struggle along the 4 defined themes of adjusting their teaching: 1. Content 2. Pedagogy 3. Technology 4. Mindset

Summary of Work: As part of Faculty Development, and Quality Assurance, a survey is conducted on the effect of transition to online teaching on the stakeholders, as well as the impact on each, and on the quality of learning. The survey is followed up by a series of focused group interviews with the faculty grouped along Basic Sciences and Clinical Sciences groups to see if there are differences in their responses.

Summary of Results: The faculty have adjusted well to the current circumstances and there is 100% uptake of online teaching. All the didactics have been converted to online mode. Clinical skills is more of a challenge, but new methods are being explored. The study is ongoing.

Discussion and Conclusions: The results will be interesting from the point of view of the medical education administrators and other faculty as it may reveal a niche sentiment from medical educators, or possibly, a more pervasive perspective on how they were impacted by the Covid19 induced changes in teaching. The support from the medical education administration, hospital administration, students, educational technologists and other ancillary staff towards the medical faculty are important in facilitating and upholding the high quality teaching in any medical school.

Take-home Messages: The faculty has shown extreme resilience through this major transition in medical education teaching. It is imperative that we understand how best to support them.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.17 Learning Lessons From a Rapid Transfer to Online Clinical Skills Teaching (8832)

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ABSTRACT:
Background: The COVID pandemic has caused considerable disruption to medical education across the world (1). Nottingham early years clinical skills course was previously delivered as small group sessions, COVID restrictions have prevented this. A blended learning approach was rapidly developed featuring pre-recorded video demonstrations and narrated PowerPoints, followed by a live Microsoft Teams session delivered as a flipped classroom for students to seek clarifications. Finally, students were allocated a short face to face session for practice.

Summary of Work: After each online or face to face session, students were asked to complete an online evaluation.

Summary of Results: Students reported an average of 4.2 (of 5) for sessions being relevant, useful and interesting. The number of students reporting technical difficulties decreased from almost half for the first session to very few by the last session. Moving to hard-wired teaching equipment reduced technical issues. Students were generally appreciative but felt online learning was not a substitute for traditional face to face teaching. Several commented that a regular opportunity to speak to staff was beneficial to their mental health. Students valued the opportunity to seek clarification, but many found the less didactic approach of a flipped classroom difficult and felt the needed for more staff support. As each session progressed the number of students engaged decreased. Staff felt after face to face sessions most students skills were close to the expected levels.

Discussion and Conclusions: Online sessions can support clinical skills, but care should be given to ensuring that both staff and students have suitable internet connections. Students valued the chance to ask questions but felt they needed better preparation to engage with a flipped classroom. This supports ideas that students existing preferences for teaching must be considered. Greater use of demonstrations in online sessions (similar to prior teaching) improved satisfaction. Exploration of the long-term effects of these curriculum changes will be needed and will be available by the time of the conference after assessments.

Take-home Messages: Whilst online skills teaching has promise consideration must be given to the use of best practice to adapt to online teaching. Equitable access to good wifi connections is crucial for both staff and students.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.18 Qualitative study of medical student experiences of clinical education following Covid-19 (8579)

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**ABSTRACT:**
**Background:** Following a pause in clinical placements during the Covid19 pandemic, students engaged in placements designed to offer clinically focussed catch-up teaching, to consolidate the theoretical learning that was done remotely. The aims of the project are to assess perceptions of students returning to clinical education. The secondary aim is that these data will provide themes which educators can transfer into their own local teaching practices.

**Summary of Work:** Participants were recruited into 4 focus groups, using a purposive sampling strategy. The focus groups followed a semi-structured inductive topic guide, with freedom for further questioning. The discussion was audio-recorded, transcribed and analysed using an inductive thematic analysis framework, as per Braun and Clarke (2006).

**Summary of Results:** Four major categories of perceptions have so far been identified; however, analysis is ongoing. The four major categories, with themes and sub-themes underneath them were i. Clinical Placement during Covid19 Preparation, patients, positive experiences, clinicians, placement worries, difference between perceptions and reality. Prior placements, introduction day, prior information, reduced clinical load, pre-placement worries, negative experiences, clinical placement worries. ii. Wider Implications of Covid19 Lockdown, media, transmission, future Working during lockdown, location, coverage of doctors; Covid19, transmission worries, future worries iii. Education during Covid19 Virtual learning, exams, expert teachers, experiential learning, didactic, near-peer teachers Logistics, positives, negatives, motivation, revision, worries. iv. Restrictions imposed by Covid19. PPE, interacting, social distancing, restrictions, adaptations Guidance, interacting, familiarity, PPE adaptations, adaptations, personal safety, PPE worries, personal safety worries.

**Discussion and Conclusions:** Though the specific situation with catch up placements is unique, Covid19 will likely cause continued adaptions to medical education. Furthermore, shifts in medical education to reduce clinical exposure of undergraduates due to constraints of infection control measures will necessitate optimisation of the yield of learning in clinical encounters, which this study will be able to contribute to.

**Take-home Messages:** The findings of the study provide an insight into the experiences of students whose medical education was disrupted by Covid19. The study allows reflection on the interim teaching, to understand the students perceptions of these placements. Continual reassessment of students views, alongside other teaching evaluation methods, will be crucial in updating curricula and teaching practices in this ever-changing pandemic.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.19 Adapting in the COVID-19 Pandemic: A virtual replacement for cancelled bedside sessions in January 2021 (9311)

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ABSTRACT:
Background: The COVID-19 pandemic has severely impacted medical education. Significant number of healthcare students are once again facing up to a complete loss of essential clinical learning opportunities. Many are forced into self-study in isolation. For medical students, with the prospects of exams, finals and the challenging transition into foundation training, they are tackling an enormous amount of pressure and uncertainty.

Summary of Work: Second-year medical students from Warwick Medical School abruptly faced the complete cancellation of their clinical contact hours, due to COVID-19 outbreaks. For students at Warwick Hospital, this included bedside teaching sessions that are essential for their development as effective clinicians and professionals. One of the immediate measures involved a rapid adaptation of themed virtual simulated bedside teaching; designed and conducted by Clinical Education Fellows (CEFs). CEFs facilitated these sessions, covering essential skills in history and examination via interactive role-plays and Microsoft-TEAMS workshops. Students could practice history taking, physical examination, and clinical reasoning. Feedback was collected throughout to understand the effectiveness of the virtual sessions as alternatives to their clinical counterparts. Sessions evolved with feedback, where the element of physical examination eventually morphed into a workshop tackling clinical signs, data interpretation and communication skills.

Summary of Results: 27 responses were obtained in total. 85.2% did not feel disadvantaged from having a virtual simulation for the history session, and 100% of students found them beneficial to their learning. The initial introduction of observing a physical examination was not well received, with 63% of the students feeling disadvantaged than peers who learnt in person. The eventual replacement with a workshop was notably better received, from verbal and written student feedback.

Discussion and Conclusions: Responses were positive, particularly regarding history taking and data interpretation. Some concerns were noted for the lack of viable alternative coverage for physical examination. Our current mitigation involves discussing resources and visual aids of clinical signs, which were positively received. Overall, virtual bedside teaching may offer viable compromise for cancelled traditional bedside learning. They are cost-effective, reduce infection risk and are not labour-intensive.

Take-home Messages: Virtual history taking with role playing can be a viable alternative to face-to-face bedside teaching missed due to the pandemic restrictions.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.20 Response to Pandemic Induced Disruption of Medical Education: The Virtual Assistantship (9400)

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ABSTRACT:
Background: From March 2020, the UK government's response to the COVID-19 pandemic mandated a sharp reduction in face-to-face interactions causing disruption to medical education. The GMC sets requirements for medical schools in Tomorrows Doctors to facilitate student assistantships. Assistantships often place the student with the exact team they will later join as a doctor. In response to the abrupt cancellation of placements, the South Yorkshire Virtual Assistantship (SYVA) sought to deliver an educational programme focused on hospital-specific experiences from incumbent Foundation Doctors working within South Yorkshire.

Summary of Work: The SYVA delivered five small-group virtual teaching sessions, uniquely, pairing 141 final-year students from 13 UK medical schools with 20 teachers who worked in the students future hospital. The curriculum focused on specified themes, compiled utilising key GMC policy documents including Tomorrows Doctors and Outcomes for Graduates. Platform: Zoom Duration: 45-75 minutes Clinical prescribing Session 1: Fluids and VTE Session 2: Anticoagulation, antibiotics, and diabetes Out of Hours Assessment Session 3: Medical emergencies Session 4: Common complaints Practical foundation experience Sessions 5: Radiology, specialty referrals, specialist nurses. Students registered via Google forms and completed pre and post-course questionnaires on their perceived confidence in various aspects of clinical care using a Likert-scale.

Summary of Results: Data was taken from the 75 students who responded to both questionnaires. 1, Students felt adequately prepared for their first foundation post after the course - 78.7% agree (14.7% pre-course). 2, More students felt confident in prescribing medicines and IV fluids - 69.3% (18.3% pre-course). 3, Students felt more confident in their early management of acutely ill patients - 78.7% (25.3% pre-course).

Discussion and Conclusions: The SYVA demonstrated that essential, practical knowledge can be delivered using technology to reach a greater audience. This allowed attendance nationally and undoubtedly built student confidence before a major step in their medical careers. The success of this course has proven that technology can provide a dynamic solution for differing learning needs in medical education.

Take-home Messages: Technology allows for accessible, effective, and tailored teaching for students in lieu of face-to-face teaching alternatives.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.21 Alternative clinical training of clerks internal medicine: the concept of a virtual clinic (9343)

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ABSTRACT:
Background: COVID-19 has a tremendous impact on clinical training. Various forced measures, such as social distancing, have drastically limited the number of students allowed on the wards. The Leiden University Medical Center is currently piloting an alternative concept for clerks internal medicine rotation. Those who are excluded from the patient ward due to the pandemic can still participate in bedside teaching through a virtual clinic.

Summary of Work: The virtual clinic is situated at a large modular room outside the hospital walls while being digitally connected to the clinical wards. It provides alternatives for on-site training, which include patient rounds, teaching visits, daily patient reports and skills training, and is attended by students and clinical teachers. All necessary equipment is available to guarantee live streaming and exchange of confidential information. New learning activities have been introduced by using interactive online sessions and other innovative techniques to enable students to meet their learning goals. All activities are based on the actual case load in the physical ward.

Summary of Results: The daily patient report is streamed to the virtual clinic, and then further discussed by the teacher and students. Online rounds, teaching visits and consults are currently being piloted in the virtual clinical. These activities use a head-mounted camera and safe connection, for direct two-way communication between the patient ward and the virtual clinic enhancing remote involvement of the students. Furthermore, the possibility to independently do a consult with a patient while being supervised from distance is provided. Other clinical competencies such as insertion of IV cannulas, assessing critically ill (virtual) patients, and point-of-care ultrasound examination are also addressed. Lastly, a part of the virtual clinic is designed for lectures and presentations.

Discussion and Conclusions: The pandemic has caused a need for rapid innovations in medical education. Despite all restrictions, the virtual clinic made it possible to train necessary competences. Evaluation of the virtual clinic is necessary to determine whether all competencies and learning goals have been accomplished. Improvements will be implemented depending on the feedback received from both students and teachers.

Take-home Messages: A virtual clinic can provide sustainable and valuable learning activities during and possibly after the COVID-19 pandemic.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.22 Curriculum Development and Pilot of a Virtual Acting-Based Communication Skills (ABCS) Workshop for Clinical Clerkship Preparation (7907)

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ABSTRACT:
Background: Medical students interact and communicate with patients, peers, and healthcare personnel. While pre-clerkship studies build a knowledge foundation, they do not focus on optimizing non-cognitive and communication skills necessary to enhance clinical practice. Actors utilize performance skills in their work. Medical students can learn and practice these in a workshop to develop their interpersonal skills and optimize clerkship success.

Summary of Work: A needs assessment at the University of Calgary medical school, based on students self-identified gaps, CanMEDS (a Canadian physician competency framework), and clerkship evaluation criteria identified non-cognitive attributes as areas for improvement. A medical school course chair and actor-physician adapted the latter's theatre-based communication skills workshop to these students specific learning needs. The Acting-Based Communication Skills (ABCS) workshop is a virtual two-hour session hosted by a facilitator and enhanced by pre-recorded clinical correlate videos. It accommodates up to ten participants and consists of six acting exercises. Facilitator-led debriefs follow each exercise.

Summary of Results: 9 participants piloted the workshop, including medical learners (student and residents), nurses, and physicians. 7 (78%) responded to a post-workshop evaluation survey. The average rating (1=unacceptable, 7=outstanding) was 5.71/7.00. The take-homes surrounded non-verbal communication skills (43% of respondents) and utilizing a yes and strategy (43% of respondents). When asked to select up to three out of a possible fourteen practical communication strategies, 12/14 (86%) of the tools were selected at least once. When asked to identify up to three personal gaps that participants wanted to practice, 12/14 (86%) of the gaps were selected at least once.

Discussion and Conclusions: The pilot was a satisfying experience for a multi-disciplinary, multi-educational level healthcare group. Main take-aways themes surrounded non-verbal communication skills, aligning with the workshops non-cognitive intent. The curriculum provided varied communication tools and encapsulated communication goals of participants. The ABCS workshop can be adapted to healthcare disciplines at any stage of training, as much of clinical practice is grounded in non-cognitive attributes.

Take-home Messages: Pilot feedback suggested a pre-existing acting-based course can be adapted to meet the needs of a different learner group of medical students in a virtual setting. Utilizing acting in a medical education workshop allows participants to practice and reflect on non-cognitive skills.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.23 Distance training for procedural skills: Results of a tele-simulation training program in Physiotherapy (8854)

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ABSTRACT:
Background: Low teaching availability and the current health contingency have limited the face-to-face practice of procedural skills in Health Science Education. Tele-Simulation is a methodology that facilitates the distance learning of these skills since it allows asynchronous feedback to students who are training in remote locations and enables their deliberate practice without requiring face-to-face supervision by an instructor. Tele-simulation has proven to be effective in Medicine; however, the covid-19 pandemic required us to study its effectiveness for teaching physiotherapy procedural skills. The purpose of this study was to determine the effect of a Tele-simulation training program in the learning of Upper Extremity Neurodynamic procedural skills in Kinesiology students.

Summary of Work: Seventy-three Physiotherapy students participated in a four-session tele-simulation training to learn the Neurodynamic techniques. The students uploaded a video to a platform performing each sessions techniques after seeing a tutorial video. An instructor then assessed their performance with a direct observation checklist and a rubric, providing on-video multimodal feedback between each session. An intrasubject analysis was performed with repeated measures ANOVA test.

Summary of Results: The students performance was analyzed independently using the checklist and the rubric. For the checklist, no statistically significant differences in student performance were found between sessions 2 and 3 (t(59)= -2.27; p=0.36) and between sessions 3 and 4 (t(59)= -2.07; p=0.56). For the rubric, no statistically significant student performance differences were found between sessions 3 and 4 (t(59)= -1.16; p=1).

Discussion and Conclusions: The results indicate that students flatten the learning curve in the second session when assessing with the checklist and the third session with the rubric, requiring less than four sessions to learn the techniques taught by this methodology. Although Tele-Simulation in Medicine already has positive results, this study is a pioneer in Physiotherapy and provides an effective strategy to train procedural skills when face-to-face training is not possible.

Take-home Messages: Physiotherapy procedures have the advantage that many do not require expensive materials or complex implementation. Therefore, remote training platforms with multimodal feedback were a practical solution and an excellent research opportunity during the pandemic, demonstrating positive results that lead us to consider it for future permanent implementation in health sciences education.
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ABSTRACT:
Background: The use of interactive and clinically integrated learning activities and inclusion of whole-task learning exercises (WTLE) are suggested for effective evidence-based medicine (EBM) teaching. We have integrated the EBM short courses longitudinally into our medical college curriculum. As face-to-face education has become difficult due to the COVID-19 crisis, we developed and implemented an online EBM course for a WTLE of a systematic review (SR). The aim of this study is to compare the students responses to the newly implemented online EBM course with those to the face-to-face course in the previous year.

Summary of Work: We developed and implemented an online EBM short course for an interactive WTLE of SR to pre-clerkship students using online technologies and tools (YouTube, Zoom, Slack, Google Drive, and Kahoot) in the 2020 course. The course evaluation data using the same questionnaire for 2019 and 2020 courses were collected via a learning management system. We conducted an additional survey by using Google Forms for the online course. Quantitative data were compared using Mann Whitney U-test, and qualitative data were analyzed using thematic analysis.

Summary of Results: Seventy-three out of 97 students (75%) in 2019 and 56 out of 93 (60%) in 2020 participated in the course evaluation. There was no difference between the two-year results of 13 questionnaire items except for one item about breaks in between classes. According to the survey of 93 students, the overall satisfaction of the online course was positive [very satisfactory (52%), satisfactory (37%), neutral (10%), and unsatisfactory (1%)]. The students suggested that a comfortable learning environment, improved attention, flexible time management, collaboration, and iterative learning as the advantages of the online course; while inconvenient communication, intensive class time, and internet instability as the disadvantages of the course.

Discussion and Conclusions: An online EBM short course for an interactive WTLE of SR was feasible in pre-clerkship students. Students overall satisfaction for the course was very positive and the responses were similar to the face-to-face course in the previous year.

Take-home Messages: Online EBM WTLE is feasible and has many advantages. A blended, complementary approach to online and face-to-face teaching and learning would be necessary for future courses.
#SCOD3.5: SCOD - Response to COVID-19

#SCOD3.5.25 Leaders’ perspectives on managing challenges arising from the COVID-19 pandemic: A nationwide survey of Japanese medical colleges (8511)

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ABSTRACT:
Background: The COVID-19 pandemic forced medical colleges worldwide to suspend in-person classes and clinical clerkships, urgently requiring medical educators and learners to engage in a paradigm shift from traditional medical training. However, few articles have discussed the problems and challenges of the adaptive process, especially considering cultural contexts. Therefore, this study explored the challenges faced by Japanese medical college leaders in adapting to the pandemic.

Summary of Work: Deans of 82 medical colleges in Japan were surveyed on their responses to the beginning of the pandemic using a sensemaking theory framework, widely adopted in leadership and management. A sensemaking process consists of three domains: perceiving cues, creating interpretations, and taking actions. The study documented the challenges and adaptations that medical college deans critically considered to continue medical education amid the pandemic. Survey responses were analyzed using thematic analysis.

Summary of Results: A total of 48 medical colleges in Japan completed the survey, yielding a response rate of 58.5%. Survey data revealed how Japanese deans perceived cues from multiple stakeholder groups, including medical students and their parents, medical faculties, and the government to meet institutional and social challenges and adapt medical education to the COVID-19 landscape. Japanese deans actions in adapting to the pandemic reflect the characteristics of Japanese culture, with the deans emphasizing in-depth introspection and collaboration with diverse stakeholders.

Discussion and Conclusions: Deans faced the task of managing challenges in the absence of clear national guidelines for medical colleges, thus relying on learning from other deans and seeking collaboration and input from diverse stakeholders while aligning decisions with cultural values. Japanese medical deans interpretations of cues during the pandemic may be due, partly, to Japanese cultural characteristics, such as power distance and uncertainty avoidance. These findings offer important lessons for global medical educators to plan future strategies to cope with pandemics and other crises.

Take-home Messages: Sensemaking is a useful framework for understanding how leaders have managed the various challenges caused by the COVID-19 pandemic. One important lesson from Japanese medical educations adaptations to the pandemic is that decision-making aligned with cultural contexts is important for determining effective action.
#SCOD3.5: SCOD - Response to COVID-19

# SCOD3.5.26 Sharing is caring (9117)

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ABSTRACT:
Background: In April 2020, the Student Support Network was established for faculty across the 23 medical schools in Australia and New Zealand. It was realised as a key initiative as we traversed the unprecedented times of the pandemic to ensure those who supported students were also cared for.

Summary of Work: The scheduling of meetings and management of the communication platform were supported by Medical Deans which is the peak body representing professional entry-level medical education, training and research. During our first online meeting it was realised that there was commonality of concerns across our student cohorts, to prioritise and ensure timely collaboration it was agreed to meet weekly and to conduct a survey.

Summary of Results: Within 3 days of promoting the survey; there was a 70% response rate, key areas addressed 1) ascertain the key student concerns that were being reported, 2) the range of strategies now in place to address student concerns and 3) how Medical Deans might assist student support leads in the schools?

Discussion and Conclusions: Over a period of 8 months the network met every week and were able to share resources and navigate the issues that faced their students and address the matters raised within the survey with united dedication and willingness to share and be collaborative. One colleague stated that the more transparency we have for our students and clear practical direction, the lower the stress levels for them. The same for all staff.

Take-home Messages: It was imperative during the crisis to have a peer support network, a community of practice. This session will highlight the benefits of a network that continues to meet every 3 weeks and share best practices and contribute to and make recommendations to Medical Deans.
#SCOD3.5: SCOD - Response to COVID-19

# SCOD3.5.27 The virtual dental clinical tutorial in response to COVID 19 (9764)

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ABSTRACT:
Background: Due to the COVID 19 pandemic, face-to-face dental education and student patient treatment in the UK has ground to a halt. Many dental schools are opting for a continuation of academic learning through an online remote presence. Staff and students at Dundee Dental School are currently limited to meeting virtually on platforms such as Blackboard Collaborate or Microsoft Teams. The virtual learning platforms are user friendly and a safe environment for students to learn in. Current limitations on clinical patient care have provided an opportunity to further integrate 3D digital technology into the dental pedagogy through the virtual clinical tutorial.

Summary of Work: Fifteen virtual clinical tutorials have been developed, three at gateway level, four undergraduate, eight post-graduate. These were developed using 3 Shape © digital design, and allow clinician, student and technician to discuss online in real time a variety of patient cases requiring differing treatment plans. The use of intra oral scans provides a real-life 3D image of the oral cavity which groups can discuss and build a virtual treatment plan for each virtual patient. The benefit of employing the 3D software is that it encourages additional learning of advances in modern dental materials and manufacturing processes.

Summary of Results: The initial pilot tutorials focused on PG level and has delivered in-depth discussion and learning. Subsequently rolling out to gateway and UG students has provided an encouraging level of positive verbal feedback towards the virtual clinical tutorial.

Discussion and Conclusions: Engagement has been good and initial evaluation positive from Gateway to PG. The virtual tutorial may provide an opportunity to develop further learning beyond its current form, increasing learning opportunities for current students and widen access locally and internationally. Next steps are to evaluate utility more fully, including stakeholder-acceptability and knowledge and diagnostic skill development.

Take-home Messages: Although nothing can compare to chair-side learning whether it be within the clinical environment treating patients or clinical tutorials discussing patient cases within their peer group, virtual tutorials have proved useful during the pandemic. Going forward they may offer a useful adjunct to current teaching. They may also widen access for some students and trainees.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.1 Grit and a growth mindset: Strengths and opportunities identified by South African health science students during the COVID-19 pandemic. (8665)

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ABSTRACT:
Background: The COVID-19 pandemic led to significant disruptions in undergraduate health sciences training. Many students were forced to stay home and continue their studies remotely. Despite the negative impact of the pandemic on clinical training, we sought to identify students strengths and opportunities during this time.

Summary of Work: Adopting a SWOT analysis framework, this qualitative study explored the personal and professional strengths, weaknesses, opportunities and threats of final year clinical training during the COVID-19 pandemic. A national survey was conducted via social media using snowballing technique (n=166). Student responses were analysed and categorized into themes. This study reports the strengths and opportunities identified.

Summary of Results: Although existential and other fears were expressed, the major themes related to strengths were: personal attributes and attitudes, resilience and coping skills, motivation and determination, personal and professional support structures, and resources. Opportunities identified related to: COVID-19 related learning and skills development, reinforcement of professional values, appreciating the multidisciplinary team, and developing graduate competencies such as collaboration, health advocacy, communication, and leadership.

Discussion and Conclusions: The COVID-19 pandemic compromised public health systems, which had a detrimental effect on final-year clinical training. Despite this, the majority of the students embraced a growth mindset with grit and resilience. To leverage strengths and alleviate threats to enhance the opportunities, strategic planning is crucial in the training of the future healthcare workforce.

Take-home Messages: The COVID-19 pandemic has provided a unique opportunity for final-year health science students to develop themselves personally and professionally and engage in opportunities that otherwise would not be available.
ABSTRACT:

Background: Medical students globally recognize the imminence of health literacy in driving social change. The world is now facing a global epidemic of misinformation, spreading rapidly through diverse news and social media platforms and posing a critical threat for public health due to the COVID-19 outbreak. The fight against this infodemic demands the efforts of medical students, who are the future healthcare professionals and trusted messengers, to ensure the provision of the most reliable information to their patients and communities.

Summary of Work: A global study was conducted by the International Federation of Medical Students Association (IFMSA) and the World Health Organization (WHO) to identify all fact-checking organizations, institutions and other entities that focus on correcting COVID-19-related information. The survey was filled by medical student representatives from April to June 2020 who reported name, type, scope of work, languages, primary funding source, type and source of information shared by each organization submitted.

Summary of Results: 182 initiatives from 62 countries worldwide were identified which verified information in 48 languages. Social media, internet, radio, SMS, printed media and hearsay were identified as the main sources of misinformation. Video podcasts with experts, regular social media updates and newsletters, were described as best practices, in addition to debunking myths on a regular basis and verifying statements by public figures. There were distinct differences in the quality of fact-checking between initiatives.

Discussion and Conclusions: Data demonstrated that myths and false information are spreading through various news and social media outlets with a considerable impact on the mental health of communities in particular to the youth population. 51% of respondents reported tiredness and 42% reported anxiety felt due to COVID-19 misinformation. As a follow-up, IFMSA collaborated with Ryerson University and created a public map of all the fact-checking initiatives pinpointed.

Take-home Messages: 1. There is an urgent need for medical student and faculty engagement in the provision of more universal high-quality and accessible fact-checking initiatives.
2. Health literacy, in particular to infodemic prevention, should be critically integrated in the medical curriculum.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.3 The lessons learnt on training and mobilizing senior medical students to COVID-19 response in DaNang city, Vietnam (7939)

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ABSTRACT:
Background: Although COVID-19 pandemic has caused unprecedented morbidity and mortality across the world, toppling health care systems in high as well as low and middle income countries, Vietnam has been one of few inspiring examples of a successful response. Da Nang, in the center of Vietnam and the hotspot of COVID-19 was able to return to a new normal status. One important element of this success was the training and deployment of senior medical students in the fight against COVID-19.

Summary of Work: and motivated senior medical students, a comprehensive yet efficient and effective training was developed targeting senior medical students, in order to prepare them for several critical roles in the pandemic response. This curriculum has subsequently been integrated into the students general curriculum and will be applicable for future emergency response.

Summary of Results: 328 senior students received training that included appropriate knowledge, technical and clinical skills, and professionalism preparation. 100% of students completed their assigned tasks. All stakeholders, including public health managers, governors and the public, were uniformly positive in their appreciation and satisfaction with the students contributions. The Covid-19 response has been successfully integrated into current curriculum of Medicine, Public Health, Nursing, Medical Laboratory Science.

Discussion and Conclusions: Many medical schools throughout the world released medical students from clinical responsibilities when the COVID-19 crisis began. This is short-sighted because medical students, especially those who have completed clinical rotations, have knowledge, skills and motivation that can be mobilized in a crisis. In addition, the potential opportunities for learning from authentic tasks in the COVID-19 response are invaluable that cannot be replicated elsewhere in the medical school curriculum. Students were able to witness and participate in an unprecedented Conclusions Senior medical students are a valuable potential human resource in a health care crisis. The successful mobilization and training of senior medical students in Da Nang during the COVID-19 crisis provides examples of curricular content that can be integrated into standard medical school curriculum as well as content and mobilization strategies can be applied in future crises.

Take-home Messages: Senior medical students can play a critical role in a crisis if appropriately trained and supervised.
ABSTRACT:
Background: COVID-19 has already overwhelmed health systems and it still has the potential to lead to a collapse. There have been ongoing concerns and examples on last year medical students early-graduation and employment, especially in countries with a high incidence.
Summary of Work: As the European Medical Students Association (EMSA), we conducted a survey study addressing our members in Faculty Member Organizations on rising student employment due to pandemic and how a possible early employment would affect last year medical students. Analysis of quantitative data was performed using statistical software R
Summary of Results: 66 answers from local bodies were collected. Our results show that 44% of the participating faculties mostly voluntarily employed their last year students. The effect of early employment was assessed on a scale of 0 (No Effect)-5 (Positively Affecting) with different parameters, and results for each parameter are: Mental Health and Well-being: 51.7%: 3 - Neutral Transition of Student to Junior Doctor: 24.1%: 1 - Negatively Affected, 24.1%: 2 - Somehow Negatively Affected Clinical Experience: 37.9%: 4 - Somehow Positively Affected Quality of education: 34.5%, 3 - Neutral Quality of learning process: 34.5%, 3 - Neutral 72% of participants stated no data regarding provision of supervisory support for medical students who are volunteering/being employed in the healthcare workforce during the pandemic.
Discussion and Conclusions: As shown in our small-scale study, undergraduate student employment could negatively affect mental health and the transition from student to junior doctor. Since bedside education and practical approach to healthcare drives last-year medical curricula, quality of education needs to be further investigated in fresh graduates for any possible gaps between expected and actual competencies. Hence, further investigation could be required to see any bias between expected vision of medical education and students evaluation, as well as practical usage of these outcomes for further policies.
Take-home Messages: 1. All necessary measurements should be taken in case of student employment/volunteering by the authorities to ensure student safety.
2. Considerations of policies on students’ position in healthcare service hold an important place for future settlements.
3. Retrospective evaluation of fresh graduates from medical schools might be considered to determine the gaps between expected and actual competencies.
The COVID-19 pandemic led to sudden change in routines and social norms, forcing people to adapt, including university students. A systematic review by Xiong J et al showed that psychiatric symptoms and stress significantly increase during the COVID-19 pandemic, students being one of the risk factors. One of the most important mental health predictors is sleep. The two objectives of this project are to find out the quality and quantity of sleep in first-year health cluster students of Universitas Indonesia and its relationship with mental well-being through research, and to improve knowledge of the importance of sleep and its effect on mental health.

**Summary of Work:** The project consisted of research and webinar conducted by SCORE CIMSA Universitas Indonesia (UI). A cross-sectional study was executed from October through November 2020 which results are then presented at the main event. Pittsburgh Sleep-Quality Index was used to assess sleep quality and Warwick-Edinburgh Mental Wellbeing Scale was used to assess mental wellbeing. In November 2020, the webinar SNELLI Sleep and Mental Wellbeing was held, inviting a mental health professional as the speaker. To identify and measure knowledge, pretest and posttest were conducted during the webinar.

**Summary of Results:** 105 students participated in the research. The mean quantity of sleep is 5.317 hours per day. The analysis of quality of sleep and mental wellbeing showed a Pearson correlation of 0.31. The webinar was attended by 189 people throughout Indonesia. The mean score was 79.45% for pretest and 81.33% for posttest, which showed a mean increase of 2.3%.

**Discussion and Conclusions:** We found that the quantity of sleep in the students was under the sleep recommendation by National Sleep Foundation (7-9 hours). We also found that the quality of sleep among the students were positively correlated with mental wellbeing. The aim to improve knowledge from the webinar were also reached with the increase in pretest-posttest mean score.

**Take-home Messages:** The current situation forces people to adapt to more online-based activities which may affect sleep quantity and quality due to its flexible nature. Sleep is important to maintain, as it affects ones mental wellbeing, which may affect a lot of aspects in ones life.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.6 Can online peer-to-peer teaching be effective during the COVID-19 pandemic? (8336)

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ABSTRACT:
Background: Peer-to-peer support was commonplace prior to COVID-19 and was received well by most students. However, COVID-19 has changed the way we need to teach, and it remains unclear whether peer-to-peer support via online platforms can be effective. We wanted to help pioneer peer-to-peer online support and demystify online learning.

Summary of Work: We split a cohort of 110 medical students into five online peer-to-peer groups of 22. Each group decided on a specific topic they found difficult, with topics relating to medical content having a five-question quiz before and after a teaching session to evaluate a change in knowledge. Knowledge was defined as the percentage of quiz questions the students got correct. From September 25, 2020 to November 11, 2020, nine individual online sessions were taught. The number of sessions taught to each of the five groups ranged from two to five sessions. On January 5, 2021 a recap quiz containing all 47 questions was completed by the students to determine the retention of knowledge over 55 to 102 days, with the peer-to-peer groups not taught specific topics acting as controls.

Summary of Results: On average 50 out of 110 students (45.5% attendance) engaged in the voluntary teaching sessions offered. Immediately after being taught topics, quizzing demonstrated a significant average improvement in knowledge from 57.5% to 85.9% (p < 0.001) in the cohort of students. 28 out of the 50 engaged students (56%) took part in the 47-question recap quiz. However, retention of knowledge was not significant after 55 to 102 days in the taught peer-to-peer groups compared to the control peer-to-peer groups, in which knowledge on average was 76.4% and 73.5% respectively (p = 0.08).

Discussion and Conclusions: Our data suggests that online peer-to-peer support can significantly improve the knowledge of medical students in the short term, which will help build confidence and a strong foundation going forward. However, more work must be done to support the retention of knowledge over a longer period.

Take-home Messages: Online peer-to-peer support is a promising and effective method of supporting medical students during the COVID-19 pandemic.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.7 Peer-led Research Methodology Course for First-year Medical Students using Distance Learning: Effectiveness and Applicability (9766)

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ABSTRACT:
Background: New learning methods emerged to combat COVID-19 pandemic impact on education. Online peer-led courses have been adopted in many schools to prepare students to become educators and supervisors.

Summary of Work: Peer-led Research methodology course using distance learning was conducted among first-year medical students during COVID-19 pandemic. Peer teachers were 5th and 6th year students who have teaching and research experience under supervision. 49 students who applied through online Google form were chosen to participate. Students were randomly assigned to small groups under peers supervision to facilitate courses activities. The course was conducted using social media platforms, sessions were delivered on Skype, general discussions and small group discussions were held on telegram and WhatsApp groups respectively. Sessions were recorded to overcome the internet issues. Group discussions were held after students completed their groups tasks. Pre and post questionnaires were used to assess the impact of this course on students scientific research knowledge and skills. Data were analyzed using SPSS version 26.

Summary of Results: Results showed significant differences between students knowledge and research skills scores before and after the course (p-value .000 for each). Significant differences were also revealed regarding their critical thinking skills and scientific writing, but no significant differences were showed in their communication and teamwork skills. 97.4% of students believe that research methods teaching should be included early during their academic years. 47.2% of participants stated that peer teaching fosters a comfortable atmosphere for better communication. On the other hand, 34.4% reflected on the limited knowledge and experience peer teachers may have. 77.8% complained of internet issues.

Discussion and Conclusions: Peer teaching can be used to adjunct the research methods course already present in the curriculum and an early introduction of basic research methods can help in building students critical appraisal skills. Distance learning - if facilitated using sessions and practical group tasks - proved to be effective in teaching research skills.

Take-home Messages: 1. Online learning method foster each student skills separately but not the group work especially in 1st year students came to university from various backgrounds. 2. First-year students are aware of the importance of research and they will respond positively if included earlier.
SCOD - Students & the COVID-19 Pandemic

SCOD3.6.8 A blueprint for change: Using a key attribute blueprinting model in MD selection to adapt rapidly to the impact of the COVID-19 pandemic (9225)

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ABSTRACT:
Background: The COVID-19 pandemic has wreaked havoc worldwide. As governments responded, significant and widespread disruption to health systems, societies and the global economy ensued with flow on impact to education systems. In Australia, COVID-19 was detected from late January 2020, by mid-March the Australian border was closed and national lockdowns instituted. Over the following months domestic border closures and rapidly changing restrictions became commonplace. Meanwhile, universities strived to maintain core functions in an unstable environment, including selecting students.

Summary of Work: University of Wollongong (UOW) delivers a 4-year MD program producing Australian doctors with a desire to practice medicine in regional/rural areas. Usually, UOW MD selection commences with the GAMSAT and Casper tests in March, followed by processing of almost 2,000 applicants in May-July, interviews in September and offers in November. However, in 2020 this was under threat, and the timing of the Australian academic year falling early in the pandemic did not allow the luxury of international experience to draw upon. To ensure the retention of core principles during the rapid redesign of our selection process, UOW developed a blueprint of key attributes represented across all our selection tools and used that roadmap to determine how systems could be changed, which fundamentals must not be compromised, to deliver mission specific selection in a vastly altered format.

Summary of Results: Subsequent modifications to the selection process included an online GAMSAT test, shortened timelines, amended GPA calculations, score weighting and ranking algorithms, and a radically redesigned interview methodology delivered via Zoom; all supported by staff working remotely from home. Despite this disruption, the selection process was highly successful, with analysis providing evidence for its acceptability, equity, and validity even with rapid and extensive changes to its format.

Discussion and Conclusions: Maintaining emphasis on the schools mission allowed structurally different processes to select highly suitable applicants by focusing on the blueprinted important attributes rather than selection tools themselves. Future considerations include determining which of these temporary changes should be maintained permanently post-COVID.

Take-home Messages: Thorough blueprinting is a fundamental step in designing any assessment model and using attributes to blueprint selection methods is vital for evidence-based admissions decisions, especially in times of change.
ABSTRACT:
Background: Providing face-to-face medical work experience for prospective medical students has been challenging in the current COVID-19 pandemic. Traditionally, work experience has been difficult to organise and can be variable. We designed a novel method, using a virtual platform, to provide an opportunity to understand what a medical career entails.

Summary of Work: We organised a free one day virtual work experience event for secondary school pupils. This was delivered and recorded using online video conferencing software. Topics focused on the journey from medical school to consultancy, a photographic hospital tour and guidance on the medical school application process. Social media, the local trust communications department and direct contact with schools enabled advertising. Electronic forms were used for registration. A pre and post-event questionnaire assessed participants knowledge and perceptions. During the session, live chat was utilised to answer questions. The video recording of the event was uploaded onto an online video platform for asynchronous learning.

Summary of Results: There were 771 registrations from an international cohort, spanning the UK, India, Dubai, Thailand and the Philippines. 27% of participants had attended prior work experience. 99% were interested in studying medicine following the session. 92% had positive feedback about the online format and 99% would attend future events. Participant confidence in the medical school application process improved from 11% to 81% on a five-point Likert scale.

Discussion and Conclusions: Secondary school students undertake work experience to explore the opportunities offered during a medical career. This training opportunity has been disrupted by the COVID-19 pandemic. Using an online platform we designed, organised and delivered an innovative method of work experience. The accessibility of a virtual portal resulted in a varied, standardised and time-efficient mechanism of providing an insight into the healthcare system. In addition, an online educational resource will be constructed with vignettes from the recorded talks.

Take-home Messages: Despite the pandemic, medical work experience can be successfully delivered using innovative virtual modalities. This has potential to become part of a standardised, blended learning experience that may become the norm in the future.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.10 Perceived Stress and Online Learning Readiness in Medical Students during the COVID-19 pandemic (9055)

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ABSTRACT:

Background: The COVID-19 pandemic prompted rapid changes in the delivery of medical education. For many schools, the shift from face-to-face, experiential learning to virtual learning posed a significant source of stress for students.

Summary of Work: In a cross-sectional online survey of 1122 medical students across all years in Barbados, Bahamas, Jamaica, and Trinidad and Tobago, students completed the 10-item Perceived Stress Scale and 11 items regarding different aspects of online readiness (e.g., confidence in online teaching and assessment, concern about internet disruption, ease of using online resources, preference for online training and assessment). Group comparisons and regression analyses examined the relationship between perceived stress and perceptions of online readiness, student age, gender, year of study, and country.

Summary of Results: Students who were female, younger, and in Year 1 reported significantly higher levels of perceived stress while students in Trinidad and Tobago had significantly lower levels. Stepwise regression analysis yielded a model explaining 30% of the variation in perceived stress. Seven items related to online readiness were significant predictors of stress. Needing extra time for online assessments; online assessment being disrupted by power/internet failure; confidence in online teaching and learning; online assessment seen as more challenging; and wanting more training in online learning and assessment all predicted higher stress levels. Students homes being regarded as a suitable space for online exams and confidence in online teaching and learning predicted lower levels of stress. Female gender and younger age predicted higher levels of stress.

Discussion and Conclusions: Online delivery in the COVID-19 pandemic has increased stressors for students. Many concerns about online readiness have a significant impact on levels of perceived stress. Medical schools need to be aware of and responsive to students concerns regarding online education to identify areas for further support of students mental health and wellbeing, especially for female and younger students.

Take-home Messages: Many aspects of online readiness are associated with increased perceived stress among students, especially female and younger students. Medical schools should be aware of stressors due to online delivery to inform appropriate interventions.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.11 Psychological well-being and sleep quality of university students from healthcare programs using virtual learning environments during COVID-19: Does academic resilience make a difference? (8672)

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ABSTRACT:  
Background: Many universities have transitioned from face-to-face learning to online or blended learning during the COVID-19 pandemic. Such changes are particularly challenging for students in healthcare programs where the curriculum is practice-oriented. With more evidence to suggest the positive role of academic resilience on adaptation in teaching and learning, this study examined how this attribute relates to academic stress, mental health and sleep quality.

Summary of Work: This cross-sectional exploratory study invited healthcare students from a Hong Kong government-funded university to engage in an online survey. Academic Resilience Scale (ARS-30) was used to measure academic resilience, while perceived stress, mood status, and sleep quality were measured with the Perceived Stress Scale (PSS-10), Mental Health Inventory (MHI), and Pittsburgh Sleep Quality Index (PSQI) respectively. Information about their demographic profile and learning experiences were also collected. Multiple regression analysis was used to identify the independent association between academic resilience and stress-related outcomes.

Summary of Results: 112 healthcare students with a mean age of 21.0 (SD=1.8) completed the questionnaire. A majority of them (68.8%) were studying the medical program. Even though they were quite satisfied with the learning experience, the PSS and PSQI score indicates their moderate level of distress and fair sleep quality. Nevertheless, academic resilience only showed significant bivariate relationship with mental health (r=0.365, p<0.001) but not perceived stress and sleep quality. After adjusting for the demographic characteristics and satisfaction with teaching, multiple regression analysis indicated that university students with higher academic resilience reported significantly better mental health with beta=0.308, p<0.001.

Discussion and Conclusions: Consistent with published evidence, students in healthcare programs presented with stress and stress-related outcomes. We found that academic resilience may act as an internal coping resource to promote the mental health of this student cohort, even though its does not work directly on stress or stress-related symptom. Future study may explore the mechanism underlying its psychological benefits.

Take-home Messages: Academic resilience is an internal attribute which favors the mental wellness of university students in healthcare programs during the COVID-19 pandemic. It may be beneficial to implement training and support that can help students build academic resilience in coping with virtual learning environments while maintaining a positive mental well-being.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.12 Major implication of medical students in a COVID-19 center during the pandemic: An unique educational experience at the service of community and public health (8417)

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ABSTRACT:
Background: With the COVID-19 pandemic rising in France, the municipality of Lyon, in collaboration with the Lyon University Hospital and the Hospices Civils de Lyon, opened the biggest French center for Sars-CoV-2 testing in the community before the second epidemic wave in September 2020 in the Lyon Sports Arena.

Summary of Work: All Students (4th year) of the Lyon Est Medical School were trained to perform nasopharyngeal swabs (lecture, practical course with crash-test dummy and on-site 2-hours supervisions with experimented medical staff). They were asked to form teams of 10 to 20 students per week to i) perform all nasopharyngeal swabs for people coming in the testing center, ii) inform them about screening and isolation protocols. To evaluate the pedagogical benefit and the practical experience of the students, an anonymous online questionnaire was sent to all students to fill out both before and after their week of intervention in the screening center.

Summary of Results: A total of 234 students were involved in the testing center for 16 weeks, and performed 54 454 swabs allowing the diagnosis of 9 418 COVID-positive cases and the daily monitoring of the positivity rate. For students that responded to the questionnaire, 85% were volunteered and 14% assigned. The students feedback for a vast majority was highly positive, with an overall satisfaction rate at 7.04/10. The students reported to feel useful and were satisfied to serve the community in a period of need. They indicated a statistically significant improvement of their ability i) to perform the swabbing, ii) to inform the patients about SarsCoV 2 epidemiology, and a reduction of their level of stress across their week of mobilization (p<0.001 for all comparisons). In addition, 83% of the students reported that this mobilization helped them to improve their interpersonal skills with patients (from 3y. to 85y.)

Discussion and Conclusions: The experience has been considered as a success by the authorities/institutions and the students.

Take-home Messages: Students reported global satisfaction from this experiment, both at a pedagogical level and with the gratification of being useful during the COVID-19 pandemic, giving them a crucial role in the management of the second COVID19 wave in Lyon area.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.13 Conversations not consultations: Medical Student service-learning during a COVID volunteering programme (8888)

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ABSTRACT:

Background: During the first wave of the pandemic when all clinical placements were suspended, we established a medical student volunteering programme to support local GP practices. We aimed to explore the impact that being immersed within these new communities of practice had on students learning and professional development, to inform the design of future service-learning curricula innovations.

Summary of Work: Seventy medical students across all years volunteered across forty-five GP practices in north-west London. Ten volunteer students and six GPs who had hosted students volunteered to participate in remotely conducted, semi-structured interviews with a researcher. Transcriptions were independently coded by two researchers and analysed by thematic analysis using transformative learning as a sensitising concept.

Summary of Results: The most common volunteering activity was remotely supporting vulnerable and shielding patients to check on their health status and well-being. Analysis showed a strong alignment between the views of students and GPs in terms of perceived learning from this activity. Initial challenges for students included safety restrictions which limited their duties, and some early years students in particular with limited prior clinical experience, suggested that supporting patients remotely had involved a steep-learning curve. However, most students reported numerous benefits: including enhanced communication skills; record keeping; and professional development through having responsibility for supporting patients. Furthermore, students who were embedded in their practice were provided with a unique view of behind the scenes activities in primary care. In the absence of formal learning objectives, students independently shaped conversations with patients across different diverse communities which stretched far beyond the biomedical model, highlighting the impact of social inequalities and the wider impact of the COVID pandemic on peoples lives.

Discussion and Conclusions: This volunteering programme has highlighted how a meaningful service-led role, responsibility, and authentic membership of a community of practice, can empower students to move beyond the traditional medical consultation model to understand the biopsychosocial impact of health and disease.

Take-home Messages: Looking forwards designing medical student placements using a framework of service-learning and communities of practice, allows students to develop skills in becoming patient-centred, holistic and compassionate future doctors.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.14 Digital Health and COVID-19: Students’ Perspective On The Challenges Faced (9282)

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ABSTRACT:
Background: Throughout the last years, technology has played an increasingly important role in the healthcare sector. The COVID-19 pandemic has reaffirmed the importance of digital health, with innumerable apps helping to track cases worldwide and the need to develop telemedical services. Nevertheless, it has also highlighted the challenge of developing effective ways of using technology, mostly due to cyber security, law making and lack of literacy.

Summary of Work: In 2020, the European Medical Students Association (EMSA) published the results of a survey on eHealth, which revealed students perception of a lack of education in the digital health field. A follow-up survey is being developed in order to understand students updated demand for digital health education post-pandemic, as we postulate a recent increase in medical students digital health literacy. Recently, EMSA has also adopted two policy papers representing members view on the digital transformation in the context of the pandemic, namely Lessons Learnt from COVID-19: Managing Chronic Diseases through Telehealth.

Summary of Results: In the light of the pandemic, the unmet need of medical students to be educated on digital health topics as expressed in the first survey results is likely to have increased. The pandemic is an important moment to re-think the current role of digital health tools in European health systems to achieve a better management of resources and reduce health expenses. Involving students education in this transformation is crucial for its sustainability.

Discussion and Conclusions: The response to COVID-19 required the implementation of digital health strategies that faced various challenges. Effective and urgent solutions through interprofessional collaboration and sharing of best practices prove to be fundamental to achieve a better readiness of healthcare systems to new global challenges. A sustainable and well-prepared transformation of healthcare systems towards a digital future is crucial for a better management of health, especially in moments of crisis, and a build-up of digital skills starting in undergraduate education will ensure future-proof doctors ready to face these challenges.

Take-home Messages: Proper digitalization of the healthcare systems is key to combating public health challenges. Further education of current and future healthcare workers on digital health is required to develop effective solutions.
#SCOD3.6: SCOD – Students & the COVID-19 Pandemic

#SCOD3.6.15 Volunteering during the COVID-19 pandemic: Early stage medical student sacrifices, professional development and resilience (9332)

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ABSTRACT:
Background: Volunteering during times of crisis is not unusual. Documented student involvement in a pandemic response dates back to over a century ago when medical student volunteers were deployed in an attempt to curtail the 1918 Spanish Flu. The COVID-19 pandemic has brought significant challenges to our healthcare systems. Although most medical students were unable to gain access to hospitals for teaching purposes, many were keen to assist the healthcare teams during the crisis.

Summary of Work: Early stage medical students at the Royal College of Surgeons in Ireland (RCSI) volunteered in clinical settings during the early stages of the pandemic. We asked students to reflect on their experience with a specific focus not only on their experience, but also on their own personal and professional development. 26 students who volunteered on intensive care unit proning teams during the first 6 months of the COVID-19 pandemic were invited to participate. Reflections were collected anonymously and analysed thematically.

Summary of Results: Students reported that they had made significant sacrifices such as isolating themselves and/or moving out of accommodation to protect their loved ones while volunteering. Major areas of development were in the areas of communication and team work skills. Students also identified that their experience improved their resilience and for most students it strengthened their resolve to study medicine with some students considering specialties related to critical care.

Discussion and Conclusions: Students experienced growth in areas of professionalism, resilience and professional identity formation. While benefits to student personal and professional development were clear from this study, many early students would not have had previous exposure to critically ill patients and some students found the clinical situation challenging.

Take-home Messages: Volunteering during a pandemic has rich learning opportunities for students, particularly in the the area of professional development. It is however important to ensure that support structures are in place for early stage medical students volunteering in such circumstances.
#SCOD3.6: SCOD - Students & the COVID-19 Pandemic

#SCOD3.6.16 Medical Students’ Perspectives on Workplace Adaptation in post COVID-19 era: A Sociological Point of View (9388)

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ABSTRACT:
Background: Medical students begin their long path to becoming doctors in undergraduate clinical training. There are some unique exchanges that occur between the environment of clinical workplace and medical students in post COVID-19 era. The exploration of medical students initial perspectives helps to declare the impact of their clinical adaptation by a sociological point of view.

Summary of Work: Anthropological interviews conducted conversationally with one or few medical students at a time. The semi-structured interview (SSI) employs a blend of closed- and open-ended questions, accompanied by follow-up why or how questions. The main themes of the interview include the initial perspectives of clinical training experience, the adaptation strategy and the belief, expectations and value behind.

Summary of Results: In total there are eight participants, four female and four male medical students, interviewed during their internal medicine clinical rotation. Unessential existence due to having less clinical experience and less skilled clinical techniques is the universal initial perspectives of the medical students as the lowest member of the medical team. Fortune and misfortune often depend on the enthusiasm of the instructor students met during the clinical practice and the type and number of the patient they encountered. During the COVID-19 epidemic period, closing the ward reduces the chance of learning and clinical practice.

Discussion and Conclusions: The research focuses on how medical students, under the epidemics, embark on the path of shaping their role of becoming a professional physician, a process of socialization. We illustrates the difference between the interpersonal management of medical interns in hospital life and their self-worth will affect their different views on hospital life and will also drive different work and learning performances during the internship.

Take-home Messages: Understanding the perspectives gain from medical students can provide an insight to faculty and administrators about the existence of learning obstacles and how medical students cope with rom a sociological view. Dig out the thoughts and beliefs behind help to build such meta-messages previously unrecognized or misinterpreted and provide the students view point of how clinical training can add value to the health care delivery system in post COVID-19 era.
#SCOD3.6: SCOD – Students & the COVID-19 Pandemic

#SCOD3.6.17 Webinars to enhance psychological wellbeing during a pandemic (9169)

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ABSTRACT:
Background: The COVID-19 pandemic has put healthcare workers (HCWs) and medical students into a highly pressured environment, with limited staff and resources (Greenberg, 2020).
Summary of Work: Following a thorough literature search and building on work already undertaken for face-to-face wellbeing workshops, a two-hour webinar was developed at Barts Health NHS Trust called the Psychological Impact of Working during COVID (PIWC). Evaluation data was collected using Google Forms. Quantitative data was analysed in Google Sheets and free text data reviewed using thematic analysis. Separate webinars were run for students and HCWs. During which, a model for psychological responses to crises was presented (British Psychological Society, 2020) alongside recorded staff interviews, and participants were encouraged to use a Personal Wellbeing Plan.
Summary of Results: Both students and HCWs responded positively to understanding psychological responses during a crisis. Of the initial 177 participants, 60% provided questionnaire responses. Of these, 103 (97%) agreed or strongly agreed that this webinar will help me to develop a workable plan for my own self-care. HCWs appreciated being given the opportunity to discuss their experiences, whereas several students felt too inexperienced to contribute fully to discussions.
Discussion and Conclusions: From comparison of the free text feedback, it seems that separation of student and HCWs groups was appropriate. Staff members benefited the most from provision of a forum for group discussions and advice on implementing strategies for self-care. Students focused on the new concepts being explained rather than personal reflection and some felt shorter sessions would be better. Some felt reflection would be more useful later in their placements.
Take-home Messages: These wellbeing webinars were greatly appreciated by both HCWs and students. There is good reason, however, for HCWs and students to be taught separately and with different emphasis. Students may benefit from a relatively didactic teaching session at the start of placements with a second more reflective session later on. References British Psychological Society. (2020). The psychological needs of healthcare staff as a result of the coronavirus pandemic. Available at: https://www.bps.org.uk/sites/www.bps.org.uk/files/News/News%20%20Files/Psychological%20needs%20of%20healthcare%20staff.pdf [Date accessed: 3.2.21] Greenberg, N. (2020). Managing mental health challenges faced by healthcare workers during Covid-19 pandemic. BMJ, 2020;368:m1211. Available at: https://www.bmj.com/content/bmj/368/bmj.m1211.full.pdf [Date accessed 21/1/21]
The Mid/Med Writing Project: Two generations of students writing and sharing experiences during the COVID-19 pandemic (9438)

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ABSTRACT:
Background: Globally, students have been affected by the COVID pandemic; many have chosen to write about their experiences. At the University of Colorado, medical students joined with eighth grade students to document their experiences in The Med/Mid Writing Project. Students wrote reflective pieces and shared via teleconferencing. We sought to better understand the student perspective during a pandemic through reflective writing, and learn from interactions between two groups of students representing different generations.

Summary of Work: Weekly prompts were provided. Students participated in virtual sessions and volunteered to read pieces aloud and receive feedback. Students completed a survey and focus groups were conducted to elicit details of student experiences. A qualitative approach using iterative coding techniques was used to analyze student writings, focus groups, and survey comments. Survey data was analyzed using descriptive statistics.

Summary of Results: Seven medical students and five middle school students participated in the project. Themes common to the writings of both groups included: external pressures to succeed and perform, friendship, family, hobbies, memories, and hope for the future. Representative middle school student comments include: I am self-conscious about my writing, but I improve my writing when sharing and Everyone was so supportive!. Representative medical student comments include: They had just as much to bring to the table as the medical students and I was surprised at the emotional maturity the younger students showed. 80% of middle schoolers reported they agree or strongly agree the project helped them gain confidence working with older students. 100% of medical school students and 80% of middle school students reported they would participate in the project again.

Discussion and Conclusions: Despite differences in age and experience, both groups of students wrote about similar themes, feelings and archetypes. By creating, sharing and discussing reflective writing about the pandemic, students gained self-confidence, perspective and empathy. Both groups gained understanding of the other group, as well as themselves, through participation. Next steps include writing groups with medical school and middle school students over a longer timeframe to evaluate changes in writing and development of near-peer relationships and mentoring.

Take-home Messages: Middle school students and medical students wrote on similar themes and learned from one another.
ABSTRACT:
Background: Recently increasing attentions are attracted to medical school students, partly driven by the fact that medical school students encounter some degree of difficulties in academic study, personal wellness and career planning. As a response, many medical schools use Offices of Medical Student Affairs or mentoring programs for taking advising tasks. But little is known about their effectiveness. This study tried to bridge this gap through investigating the relationship between advising and medical students development.

Summary of Work: Utilizing 122,932 observations from China Medical Student Survey 2020, we examined how advising influenced medical students development. We regressed a series of developmental indicators on medical students satisfaction with advising services, including interests in medical study, engagement in learning, self-efficacy, intention of medical career, academic ranking and placement after graduation, keeping demographic characters and other variables controlled. We also creatively used the average satisfaction with college advising within every school and class as the Instrumental Variable for two-step regression to address the problem of endogeneity.

Summary of Results: Using college fixed effects and the instrumental variable approach, we found statistically significant effects of advising satisfaction on students academic interests, intention of medical career, engagement, efficacy and ranking. A detailed scrutinization into the coefficient revealed that compared to indicators like grades, advising had extraordinarily larger effects on perceived non-cognitive outcomes, specifically on intention of medical career. When examining heterogeneous effects among groups, we found disadvantaged groups lacking career training were associated with more gains in interests and career intention, while groups with pre-college preparation benefited more in learning engagement and efficacy.

Discussion and Conclusions: College advising paves the way for improving medical students holistic development, particularly on non-cognitive ability. The effects of college advising vary among different groups. For disadvantaged students, college advising indicates compensatory effects on interest exploration and career planning. Students with previous preparation are more self-initiated to obtain resources and learning opportunities, which possibly generates their satisfaction with campus services in turn.

Take-home Messages: Personalized, integrated and well-organized advising services will be a long-lasting strategy. Medical educators should optimize the value of advising to benefit the ultimate success of all students, particularly the marginalized groups.
#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.1 Learning beyond the simulation center walls: Transitioning an in-person simulation for near-graduating medical students to a virtual-only format (8564)

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**ABSTRACT:**

**Background:** In response to the pandemic, we adapted a 4hr in-person simulation, Night-on-Call (NOC), to a fully-virtual format to prepare, assess, and support the transition-to-internship for final-year medical students at three US medical schools. We describe the virtual experience and performance of final-year medical students.

**Summary of Work:** NOC is an immersive educational experience during which near-graduating medical students play the role of intern as they complete a series of authentic clinical activities during a simulated night on call while assessed by multiple standardized raters from different perspectives. Fundamental NOC activities include: standardized patient (SP) encounters with a standardized nurse (SN), case presentation to a standardized attending, evidence-based medicine activity, patient handoff to a standardized intern.

Students encounter 3 patient scenarios: post-operative oliguria (Ol), headache with hypertension (Hyp), informed consent (IC) with a family member present. Assessing students physical examination skills (PEX) in a virtual environment required a new approach. Students were told to describe their physical exam and SPs were trained to respond accordingly. Virtual NOC was implemented across 2 web-based platforms, Zoom and Webex, and assessments were collected using REDCap and Qualtrics.

**Summary of Results:** 65 students across 3 institutions participated in virtual NOC 2020. Results are presented as the mean % of items well done. Students demonstrated strong communication skills from the SP perspective across the 3 patient cases: Ol 74%, Hyp 83%, IC 73%. In cases where students also interacted with a SN (Ol, Hyp), relationship building performance was strong: Ol 79%, Hyp 88%. However, students struggled to know what to ask and how to engage the SN during patient encounters: Ol 51%, Hyp 60%. Students demonstrated challenges with PEX: Ol 50%, Hyp 58%. Virtual NOC performance was similar to the in-person NOC that over 400 graduating medical students have completed.

**Discussion and Conclusions:** NOC performance, whether in-person or a virtual space, reveals comparable similarities in graduating medical students readiness strengths and challenges. Findings suggest an emphasis on interprofessional teamwork and PEX may be warranted. Our work also suggests that the virtual format provides a comparable and appropriately challenging learning experience for final-year medical students.

**Take-home Messages:** Virtual formats can provide comparable learning experiences to in-person formats.
#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.2 Pilot Implementation of a Student-Created Virtual Flipped Classroom Curriculum to Teach Renal Pathophysiology to Medical Students in the COVID Era (7638)

**AUTHOR(S):**
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**ABSTRACT:**

**Background:** As far as we are aware, this is the first initiative of its kind at a North American medical school were the creation, curation and delivery of core medical content were initiated by a medical student to his peers. Collaborating with a Faculty member who peer-reviewed all content, our initiative replaced in-person lectures with an entirely online, interactive, flipped classroom curriculum.

**Summary of Work:** A fourth-year medical student and core Faculty member collaborated to create an entirely online course to deliver renal physiology and pathophysiology content to first- and second-year medical students. The course was narrated with an interactive and engaging voice-over provided by the medical student, and included clinical vignettes, practice & board questions, striking visuals, and STEP Board Alerts.

**Summary of Results:** Students increased their performance on school exams from a mean of 74.13% to one of 80.04%, a 6-point or 8% increase, which was not statistically significant. Class time decreased by more than 50%. Qualitative comments collected about student satisfaction with this core content delivery included the following: I appreciated these materials and how there were Step 1 alerts and clinical correlates throughout. I personally thought this was an upgrade from having a live lecture. and I really appreciated the idea behind these being to best prepare us for Step 1 and save time on lectures. I wish all lecturers had that mentality.

**Discussion and Conclusions:** Although not statistically significant, students overall improved their performance on school exams testing content delivered via this novel, student-centered approach. They also spent less time in lectures. In the COVID era, this entirely online curriculum suggests it may be possible to implement initiatives that minimize in-person learning and lecture contact time, while maintaining or improving class performance for medical students.

**Take-home Messages:** 1. COVID has upended the ways we deliver medical education. This initiative suggests an entirely virtual initiative may be successful in delivering core content to medical students. 2. The barriers to flipped classroom content creation are lower than we might expect. 3. Core content delivery time was reduced by more than 50%, while students scored better than expected on their in-class exams.
ABSTRACT:
Background: Amidst the accelerated adoption of technology and the rapidly changing global landscape during the COVID-19 pandemic, the St. Lukes Medical Center College of Medicine remains committed to providing top-quality education.

Summary of Work: After lockdowns were imposed, we migrated didactics online, with the goal of zero lost learning days. Course materials were uploaded in the learning management system according to the respective course schedules. We opted for asynchronous and self-paced learning, given that many faculty were part of the crisis response and all our stakeholders were addressing urgent emotional, economic, and health concerns. As the pandemic progressed, we proceeded to innovate with student assessment and promotion. Because of the countrys poor digital infrastructures, we were unprepared to administer valid and reliable online examinations at short notice. Guided by learning outcomes, the traditional examinations were shifted to project-based assessments. We carefully recalibrated, searching for a balance of productivity, fairness and inclusivity, taking into account the needs of the different sectors under rapidly changing conditions. Students who were unable to participate were given opportunities to complete their requirements when conditions became more favorable.

Summary of Results: Recognizing the importance of evaluation in the iterative process of innovation, we combine qualitative and quantitative analyses of student performance, feedback, reflection papers, structured interviews, focus groups, and course evaluations.

Discussion and Conclusions: A deliberate and systematic approach to redesigning instruction and assessment was critical to the relative success of our rapid online transition. Because learning is a social process, we endeavored to build a supportive online community and a safe teaching and learning environment for students and faculty, despite tremendous external constraints.

Take-home Messages: We emphasized compassion, openness, and consideration for needs of those on both sides of the digital divide. As a safety net for students with exceptional circumstances or who simply lacked access to the internet, we communicated willingness to provide student support and remediation. For all of the above, full technical and administrative support were made available.
#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.4 The Predictive Value of Standardized Practice Exams for the MCAT Exam for Premedical Students in the United Arab Emirates (8211)

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ABSTRACT:
Background: The current COVID-19 pandemic has drastically impacted premedical students worldwide who need to take the MCAT exam. This exam is a crucial component of medical school applications for institutions that follow US-based curricula. To explore alternative evidence for medical school admission amidst the pandemic, we examined whether standardized practice exams could predict performance in the MCAT exam in a pilot group of non-native English-speaking examinees.

Summary of Work: The current study used a dataset of 19 candidates who attended our Pre-Medicine Bridge program and were subsequently admitted to the inaugural MD class at Khalifa University of Science and Technology in the fall of 2019. For all the students, we obtained IELTS scores, undergraduate GPA, MCAT scores, and scores of standardized MCAT practice exams. These exams were administered by our institutional partner Kaplan, Inc. and the AAMC. Student performance was summarized by three measures: median score, maximum score, and most recent score.

Summary of Results: On average, the students finished a total of 7 standardized practice exams and their scores increased with time, especially during the first 4 exams. The actual MCAT scores (492.37±7.11) were comparable to the median practice score (491.71±5.70; paired t(18)=0.98, p=0.34). Not only English proficiency, but also the performance in the practice exams positively correlated with the MCAT score (for English proficiency, r=0.77, p=0.000; for practice exam performance r=0.60-0.92, ps<0.01). Critically, using the multiple linear regression analysis, we found that performance in the standardized practice exams may significantly predict the MCAT score (β=0.74, t=6.50, p=0.000), independent of English proficiency (β=0.34, t=3.46, p=0.004).

Discussion and Conclusions: Standardized practice exams during MCAT preparation may be used as an alternative way to evaluate prerequisite knowledge and skills for the study of medicine. This approach may provide admission committees with additional evidence to support student entry during the current pandemic. Given, the size of the cohort and the amount of time the program has been in existence, further studies are thus required to support this initial result.

Take-home Messages: The admission procedures for medical school need to adapt to change during the COVID-19 pandemic and standardized practice exams could be a valid tool to evaluate candidates readiness for an MD program.
#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.5 Virtual Interprofessional Education (7430)

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ABSTRACT:
Background: During the COVID 19 pandemic many universities had to resort to online education. Online healthcare professional programs may present challenges for meeting interprofessional experiential training requirements that traditional, campus-based students may have access to.

Summary of Work: Lead faculty from each of university health profession programs formed a committee to work on VIPE. Monthly the committee met and created asynchronous content for the students prior to the synchronous event. The asynchronous components included a video case vignette with a standardized patient, information about each health professions roles and responsibilities for patient care, video interviews with different healthcare providers, and an instructions for participating in the event. Using problem-based learning, students from the programs discussed roles, priorities, and treatment plans for the virtual patient in their respective interprofessional breakout groups. These breakout groups were facilitated by program faculty. All students were invited to complete pre- and post- interprofessional assessment questionnaires regarding 1) their knowledge of other professions roles and responsibilities using case-based scenarios, and 2) their interprofessional knowledge before and after the training. Interprofessional Attitudes Scale and Interprofessional Collaborative Competency Attainment Survey (ICCAS).

Summary of Results: Overall improvements were seen in the knowledge of professional roles, scenario based questions, IPAS & ICCAS.

Discussion and Conclusions: Healthcare professionals require knowledge and skills to work collaboratively with multiple health care professionals and service delivery systems across the continuum of care in a variety of settings. For online students and perhaps for students who have difficulty traveling to or attending, on campus, interprofessional events, virtual events are a viable option. In the virtual context, students can collaborate at great distances to learn from each other. Planning and carrying out these virtual events requires a dedicated committee to create content, record videos, facilitate, and actively recruit students who do not have mandatory IPE training requirements.

Take-home Messages: Virtual IPE is feasible, cost effective, and able to unite students to learn from, with, and about each other across universities and countries alike. Other authors to be included however it would not allow for submission.
INTERPROFESSIONAL TEAMING IN THE CONTEXT OF COVID-19: A LONGITUDINAL QUALITATIVE STUDY EXAMINING THE UNDERSTANDINGS, EXPERIENCES, AND ATTITUDES OF THE INTERPROFESSIONAL TEAM IN THE CLINICAL LEARNING ENVIRONMENT

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ABSTRACT:
Background: Interprofessional collaborative practice (IPCP) is key to providing safe and effective patient care. While graduate medical education (GME) curricula are designed to inspire residents in the concepts of teamwork, the transfer of knowledge to skill is met with challenges inherent to the complex clinical learning environment. The emergence of COVID-19 has had a significant impact on health care across the globe. It is likely that the disruptions that it has caused will impact relational, processual, and organizational factors that influence interprofessional teaming. It is therefore important to explore IPCP in the rising complexity of the clinical learning environment during COVID-19.

Summary of Work: This qualitative study used focus groups to explore narratives of the interprofessional health care team working in the clinical learning environment in the context of COVID-19 to better understand their experiences of interprofessional teaming across two time points. Using maximum variation sampling, two focus groups per targeted interprofessional group (nursing, medicine-resident, medicine-faculty, pharmacy, care management) were conducted virtually over Microsoft Teams. Focus groups were digitally audio-recorded and transcribed anonymously. Thematic framework analysis was employed to identify content and process themes.

Summary of Results: Preliminary data from a subset of focus groups suggest that relational, processual, and organizational factors that influence interprofessional teaming remain important in the context of COVID-19. For example, COVID-19 created additional pressures with teams responding to new processes, new technology, unknowns for both clinicians and patients, and an increase in stress in the clinical learning environment. Some, especially established, working relationships were enhanced. However, COVID-19 created particular challenges for introducing new interprofessional team members (e.g. new residents, new nurses). Communication in a hybrid environment also created barriers for consistent messaging across the team.

Discussion and Conclusions: COVID-19 has impacted the clinical learning environment in many ways including interprofessional teaming. COVID-19 has amplified many of the factors that have already been found to influence interprofessional teaming.

Take-home Messages: This amplified clinical learning environment has created many learning opportunities that will enable residents to become better future doctors and interprofessional collaborators. Clinical educators should engage residents in critical reflection about the impact of COVID-19 on interprofessional teaming as part of this learning.
#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.7 Telemedicine on-boarding in the era of COVID-19: An experiential virtual orientation for newly-hired providers (9334)

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**ABSTRACT:**

**Background:** Newly-hired providers need to be oriented to the standards and expectations at their new institution. In response to COVID-19, we used our experience of onboarding 90 providers over three years, to transform our in-person experiential orientation to a virtual-only format and expand communication focus to include telemedicine.

**Summary of Work:** The 2hr virtual onboarding Zoom experience began with a 20min orientation/introductions, followed by 75mins dedicated to three Zoom-OSCEs, and ended with a 25min faculty-led debrief. Encounters were designed to assess how providers addressed a medical error, managed a COVID-19 case, and responded to a struggling learner. During each encounter, participants interacted remotely with Standardized Patients (SPs) or Learners (SLs), who used behaviorally-anchored checklists to electronically evaluate provider performance on communication, telemedicine, and case-specific skills. Following each encounter, participants completed a self-assessment while SPs/SLs completed the checklist, then the two discussed the encounter and the SL/SP provided actionable feedback. Post-onboarding, participants completed a program evaluation, received an institutional resource guide and an individualized actionable feedback report based on their performance. Results were not shared with clinical supervisors.

**Summary of Results:** 38 providers (32 inpatient, 6 outpatient) from four clinical sites participated. Results are presented as the mean % of items well done (WD) on a scale of not done, partially done, or well done. Participants scored >80% WD for communication across all cases, but performed lower in the education and counseling subdomain (54-68%). Telemedicine performance across the two patient cases (65%) reveals a need for additional education. Providers particularly struggled with confirming patient identifiers (19%) and optimizing technical aspects of the virtual encounter (23%). For the COVID-19 case, 5/6 outpatient providers made no attempt to perform a physical exam.

**Discussion and Conclusions:** The virtual onboarding was well-received: 32 participants completed the evaluation and all agreed/strongly agreed that the event was engaging, fun, well-designed, gave a sense of institutional culture, reinforced good communication skills, was an effective format to practice telemedicine skills, improved readiness to begin new professional role, and 94% felt that the virtual format was effective for learning.

**Take-home Messages:** A virtual experiential onboarding program is valuable to newly-hired providers and offers a flexible framework to onboard other learners.


#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.8 Virtual Jigsaw: Shared discovery learning during the COVID-19 pandemic in Malaysia (7814)

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ABSTRACT:

Background: Jigsaw Classroom, a research-based shared discovery learning technique, has been used in Perdana University for some years. The Ministry of Higher Education, Malaysia transferred all teaching online during the pandemic. In response, we developed Virtual Jigsaw Classroom as a sustainable educational tool.

Summary of Work: This pilot survey of 27 Year-4 medical students (12 men, 15 women, Mean age = 22.35, SD = .78,) using Zoom for sub-group breakout rooms, had 4 phases: Phase 1 (5 mins) Introduction of the topic and components (without prior awareness), akin to seeing a new patient for the first time working under time constraints. Phase 2 (15 mins) Discovery Phase: 27 students (9 sub-groups of 3 participants) with each sub-group in a single breakout room, were directed to learn about one topic component only, using textbooks & digital devices. Phase 3 (15 mins) Collaborative Phase: one student from each of the 9 sub-groups joined with students from each of the others to form 3 new sub-groups of 9 students each to share the learning from Phase 1. Phase 4 (15 mins) Summary Phase All participants reconvened for sharing and discussion with faculty and developed a Powerpoint presentation later uploaded to Moodle VLE from which all Year-4 students could benefit.

Summary of Results: Of the 27 students who participated, 23 completed the online pilot survey. 88.9% thought it helped overcome student non-engagement, 85.2% believed it provided a comprehensive topic understanding, and 81.5% believed that it was a fun way to learn.

Discussion and Conclusions: Jigsaw Classroom was replicable online; was well-accepted by students; and reduced student non-engagement. A limitation is the low student numbers. With ongoing uncertainty about the duration of the pandemic's educational impact, we plan to develop Virtual Jigsaw Classroom further with greater student numbers.

Take-home Messages: In Malaysia, undergraduate teaching delivery has been hampered by the pandemic with all teaching online. Jigsaw Classroom is transferable; has a positive impact on student non-engagement; and is a fun learning experience for students. It focuses on discovery learning, collaboration with others working under time constraints.
#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.9 New Set of Competencies in the Medical Curriculum: Need of the Hour in the Post-Covid World (8867)

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ABSTRACT:
Background: The recent Covid-19 pandemic exposed the inability of the medical fraternity to timely respond to the pandemic situation in many areas such as the development of local and international guidelines for business, travel and leisure activities and to predict their impact on the social fabric. Lack of familiarity of fresh graduates with a history of pandemics and strategies adopted to manage similar outbreaks in the past was observed worldwide. There is a need to incorporate various topics in the medical curriculum related to disaster management, out-break management, policy-making and predicting the outcomes of implementation of various health guidelines.

Summary of Work: A hypothetical curriculum was deigned at Shifa College of Medicine with integration of topics related to pandemic outbreaks and disaster management with basic and clinical sciences. Notable topics include responsible use of social media, health-economics, telemedicine, policymaking, disaster management, counselling, reducing response time in emergencies, pharmacoconomics, aviation medicine and vaccine development.

Summary of Results: The hypothetical curriculum was appreciated by the majority of faculty members and medical students. There were concerns about less availability of time in the curriculum for the existing topics. Another major concern was lack of familiarity and training of faculty members with the newly proposed topics.

Discussion and Conclusions: A paradigm-shift in being anticipated in the field of Medicine in the wake of current Covid-19 pandemic. There is a sudden requirement of a new set of competencies by medical professionals that necessitates significant changes in the current medical curriculum globally. A new of communication skills regarding practising telemedicine is required by physicians. Future physicians should be exposed to the analysis of financial burden of disaster management in the health care system.

Take-home Messages: There is a dire need for reforms in the medical curriculum which might require increasing the duration of the overall curriculum to accommodate the new competencies which will be required in near future.
ABSTRACT:

Background: Popular culture as a tool for learning is not new and has been studied in medical and health professional education. When AMEE 2020 was planned for Glasgow, Scotland, a group from Australian and Glasgow proposed to examine how the Outlander book series by Diana Gabaldon, and television series inspired by it, might be used for medical student teaching, and its efficacy. Outlander is set and filmed largely in Scotland. The series have strong medical themes with one of the main characters being a nurse, healer and surgeon. The COVID-19 pandemic began and the work could not be continued as planned. Instead the work became a tool for the well-being of group members.

Summary of Work: We reviewed feasible opportunities for the use of popular culture material in the revised Sydney Medical Program. Mapping to the curriculum was challenging. As each episode of Outlander Season 5 aired it was reviewed for learning content. This was disseminated within the group for discussion.

Summary of Results: A structure for considering the use of popular culture through the medical program was devised. The weekly recording and discussion of episode content provided an anchor and diversion for the group as the pandemic progressed. Modifications were made to the medical program and its delivery. Curriculum documents were constantly updated, making mapping difficult. The AMEE 2020 conference was cancelled. The employment status of group members changed.

Discussion and Conclusions: The Outlander works provide much possible learning material for engaging medical education learners. Mapping learning material and experiences to the curriculum was difficult as curricular documents were evolving. Changing popular culture forms and dissemination are altering the way popular culture can be employed for learning. This group discussion group created a community of practice over several months.

Take-home Messages: Material from Outlander may be used in medical programs. Mapping learning experiences to curriculum requires accessible curriculum documents. Communities of practice, however unusual, can provide support for members during events such as pandemics.
THE VIRTUAL CONFERENCE

#SCOD3.7: SCOD - Teaching & Learning and COVID-19

#SCOD3.7.11 The Perceived Benefits and Improvement in Delivery of Medical Education for Junior Doctors using a Virtual Structured Teaching Programme (9015)

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ABSTRACT:
Background: The delivery of medical education has been significantly impacted by COVID-19. National lockdown and social distancing regulations have resulted in less clinical exposure to various specialties including COVID-19 cases which overwhelm hospitals. This consequently has a detrimental effect on exam performance and meeting competency requirements outlined by the General Medical Council (GMC). Concurrently, virtual teaching has grown in popularity and allowed medical education to continue throughout the COVID-19 pandemic. The flexibility has allowed junior doctors to engage with a large audience and use a variety of technological tools to deliver information. This study aims to identify the benefits of delivering medical education through a virtual structured teaching programme on junior doctors.

Summary of Work: Junior doctors (FY1s and above) in a teaching hospital network were recruited to a virtual structured teaching programme which delivered weekly seminars to final year medical students in the medical school partnered with the hospital network. These seminars covered topics in medical specialties that were not taught in great detail. A questionnaire was distributed to compare the teachers understanding, confidence and practical experience with virtual teaching pre-teaching and post-teaching.

Summary of Results: The data is currently being collected and analysis will take place when the collection is complete. It is hypothesised that results would highlight the ease in delivery, the flexibility in teaching method and the improvement in engagement with the audience. It is expected that their confidence in virtual teaching would be improved.

Discussion and Conclusions: Integration of virtual teaching into the medical curriculum has focused on student satisfaction and often missed the importance of teacher involvement. The results should demonstrate that teachers are more empowered and confident to deliver virtual teaching. It is likely that virtual teaching will remain an important medium for education given the increased accessibility to teachers and students. This would give greater opportunity for junior doctors to improve their teaching capability and form part of their continuing professional development.

Take-home Messages: Delivery medical education through a structured teaching programme can be successful conducted via virtual teaching. The perceived benefits would include increased flexibility in timing, accessibility and interaction with students compared to a traditional teaching medium.
#SCOD4.1: SCOD - Curriculum - Competency Based/Outcome Based Education

# SCOD4.1.1 Patients as assessors in graduate medical education: A scoping review (8388)

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**ABSTRACT:**

**Background:** Competency-based medical education strives to answer societal needs and be learner-centered through its focus on outcomes and observable activities that inform progression of trainee competence. Assessment of competency remains challenging in graduate medical education and continues to largely focus on physicians inferred judgments from case presentations rather than direct observation in the workplace. We aimed to explore the evidence of patients involvement in the assessment and feedback of graduate medical trainees competence.

**Summary of Work:** Guided by Arskey and O'Malleys framework for scoping reviews, we searched 3 databases (MEDLINE®, PubMed and Embase®) prior to November 2019, and updated in July 2020. Two authors independently assessed records for eligibility, and we included empirical studies of all designs that examined patient inclusion in the assessment of residents.

**Summary of Results:** We identified 544 records with 39 having met all eligibility criteria. A range of specialties were represented in our study. Patients were primarily included across ambulatory (22/39; 56.4%) and inpatient settings (13/39; 33.3%). In 16 studies (41.0%), patients were recruited by research assistants. One third of studies included patients as a component of a broader assessment approach [e.g. multisource (360°) feedback with patient engagement (13/39; 33.3%)]. The Communication Assessment Tool was the most used instrument (8/39; 20.5%) to collect patient feedback. Evidence suggests that patients generally provide high ratings. However, patients comments offered a unique insight that may not be captured by physicians or other providers. The impact of patient feedback on graduate medical learners behaviors and improvement in interpersonal skills was variable.

**Discussion and Conclusions:** Patients are increasingly involved in assessment of graduate medical trainees. Our review suggests that inclusion of patients is feasible and may be useful particularly for the assessment of professionalism and communication. The impact of including patients for confirming or advancing competence attainment remains uncertain but under-studied.

**Take-home Messages:** 1) Patients engagement in assessment of graduate medical learners is feasible. 2) Patients generally provide high ratings but able to comment on professional and communication issues that may not be captured by traditional assessment methods. 3) The impact of patient feedback on improving behaviors and performance remains less well studied and controversial.
#SCOD4.1: SCOD - Curriculum - Competency Based/Outcome Based Education

# SCOD4.1.2 Investing in tomorrow’s health workforce - Academic competencies in IFMSA Professional Exchanges (9370)

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ABSTRACT:
Background: Since 1951, the International Federation of Medical Students Associations (IFMSA) professional exchange program (SCOPE) offers more than 17,000 students annually the opportunity to learn about Global Health by undergoing clinical practice in different socio-cultural contexts. To reflect the multi-disciplinary and role-based advancement of medical education, a competency framework will be created to enable SCOPE exchange stakeholders to set standards of learning that can be adapted to any department.

Summary of Work: The resources reviewed to create the framework were: Student Handbooks, containing global health and personal learning objectives and department specific skills; pre-departure and upon arrival training manuals, which prepare students with intercultural competencies; and general knowledge of the exchange program. The students opinions about the educational outcomes they experienced were collected through a survey containing qualitative and quantitative questions that assessed if they gained CanMEDS-like skills. The learning objectives were compared with the CanMEDS physician competencies, to identify to which extent the seven roles of a physician are covered in an exchange. Finally, the national SCOPE reports from the previous 3 years were analysed to evaluate the work carried out by exchange students internally.

Summary of Results: The Student Handbooks analysis showed that Leader and Health Advocate lack correspondent learning objectives, while the training manuals prove interpersonal gaps in all the roles. Primary data from the survey showed all seven roles being covered to various extents, with outcomes related to Professional (84.9%) and Medical Expert (76%) being met the most. Health Advocate, Scholar and Leader outcomes were met 67%, 70.6% and 57% respectively. Communicator and Collaborator outcomes met 60% and 70% respectively. The reports showed an overall increase in the number of educational activities, topics such as Exchanges Expectations and Intercultural Learning being indicated most often.

Discussion and Conclusions: The analyses justify further improvements to cover all CanMEDS roles competencies in SCOPE exchanges. Our framework will be incorporated in the Student Handbooks this year, being accompanied by a guide on how to use the competency model.

Take-home Messages: Exchange programs are essential for the professional development of medical students and young doctors and the better structured they are, the higher the quality they provide.
#SCOD4.1: SCOD - Curriculum - Competency Based/Outcome Based Education

**# SCOD4.1.3 The successes and challenges of implementing SaudiMEDs and achieving CBME: Experience from a young undergraduate medical school (8725)**

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**ABSTRACT:**

**Background:** A new medical school in Saudi Arabia implemented a national competency-based medical education (CBME) framework called SaudiMEDs. A case study research project was designed to assess the impact of implementing SaudiMEDs on the school, its faculty members, and students.

**Summary of Work:** School documents, interviews with academic leaders, and focus groups with faculty and students provided data on the implementation of SaudiMEDs. Thematic analysis was used to identify patterns and concepts to conceptualise and construct meaning.

**Summary of Results:** The analysis revealed a complex network of mixed perceptions of SaudiMEDs. These perceptions might influence and be influenced by the culture (in or out the medical school), interjecting enabling factors and challenges that arose during the implementation. The schools education was then impacted in teaching strategies, ways of learning, and assessment methods. Similarities and differences with CBME core components were identified, with the case study approach used to explore factors influencing these variations.

**Discussion and Conclusions:** Although the school is new and has few staff members and students, variations in the understanding of CBME were apparent. Being a problem-based curriculum school, some changes required to implement SaudiMEDs were unproblematic. However, the school implementation of CBME core components, which include individualised learner progress on a variable time based on the acquisition of competencies, requires further steps to be taken to achieve an advanced educational transformation. The usage of a national accreditation agency to guide the implementation of SaudiMEDs limited the schools local creativity in adopting CBME concepts. However, it is beyond the schools ability to fully shift to CBME, which might require policy support from local educational authorities to allow an enriched adaptation.

**Take-home Messages:** CBME core components should be integrated into the medical schools strategic plan and mission, educational philosophy, and infrastructure. However, currently, it is not feasible to implement all CBME components. The implementation of CBME requires a rapid evaluation of all its components to capture the intended and unintended consequences. Despite the need for medical school autonomy, collaborative support from other education bodies might help facilitate the development of CBME.
#SCOD4.1: SCOD - Curriculum - Competency Based/Outcome Based Education

# SCOD4.1.4 Using Self-Evaluation of Essential Midwives’ Competencies in Japan to Create Milestones: A Quantitative Study (8622)

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ABSTRACT:
Background: Competency-based medical education has been gaining prominence in Japan, meaning that the construction of a seamless education system is an urgent issue. A decade after introducing essential midwives competencies in Japan, however, there have been no evaluations of the competencies and no milestones have been set. Therefore, this study explored self-evaluations of essential competencies as a first step toward developing midwives milestones in Japan.

Summary of Work: We requested research cooperation from 600 delivery handling facilities, including hospitals, clinics, and maternity homes in Eastern Japan, and received cooperation from 45 facilities. Self-report questionnaires were issued to 394 midwives between April and September 2020. These midwives rated themselves on 59 items in four categories of essential competencies introduced by Japanese Midwives Association in 2009. Responses were scored from 0 (not competent at all) to 5 (able to practice intuitively and accurately) and the data were then analyzed using exploratory factor analysis. The total score of competencies and demographic data were tested using t test, and One-way ANOVA (P<0.05). This study was supported by KAKENHI (19K14332).

Summary of Results: A total of 163 midwives participated in the survey and 146 were included in the final analysis. Working facilities are hospitals (76.8%), clinics (19.2%), and maternity home (4.0%). The mean year of experiences as a midwife was 11.72±7.81SD and there was no significant difference between working facilities. The 59 questionnaire items were classified into 53 items in 3 categories (Cronbach’s coefficient alpha=0.98) and mean scores of 53 items were 147.5±42.0SD (IQR=118.0, 176.3). There were significant differences between the mean of total scores and year of experiences, numbers of prenatal woman health check, delivery assistance, and postpartum health check.

Discussion and Conclusions: This study suggested that the current competencies may not fit the clinical situation in Japan, and the experiences as a midwife could be the milestones. Next, a qualitative study will be conducted and the results of this study and the qualitative data will be combined.

Take-home Messages: To bridge the gap between pre-and post-graduate midwifery practices in Japan, it is necessary to revise the current competencies and clarify the milestones.
#SCOD4.2: SCOD - Curriculum - EPAs

# SCOD4.2.1 “It’s What We’re Always Asking For, And Now We’re Not Doing It” – Exploring the Failed Implementation of an Entrustable Professional Activities-based Curriculum for Pediatric Residency (9654)

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ABSTRACT:
Background: Medical education worldwide has been experiencing an ongoing transition from time-based to competency-based medical education (CBME) in the past decade. Since their introduction by Olle ten Cate in 2005, Entrustable Professional Activities (EPAs) became a part of this process being implemented in different under- and postgraduate settings.

Summary of Work: We asked whether the implementation of Entrustable Professional Activities in pediatric residency is deemed feasible and is accepted by both residents and supervisors. Furthermore, our aim was to explore if EPAs could foster self-regulated learning by residents and positive feedback by supervisors. In this context, we wanted to identify facilitating and hindering factors for the process of self-regulated learning and the implementation of EPAs and their role on the path to more confidence and safety in the clinical setting. To investigate our research question, we used a qualitative approach conducting 6 focus-group discussions, 3 with residents and 3 with supervisors. Focus groups were audi-taped, transcribed verbatim and de-identified. Data analysis was conducted in an iterative process by the research team based on qualitative content analysis.

Summary of Results: We found that three months after the implementation of EPAs, no resident had fulfilled the required one EPA-based assessment per month. In our focus-group discussions we ascertained beneficial and hindering factors influencing the process of self-regulated learning and the implementation of EPAs. These factors can be distinguished in intrinsic and extrinsic aspects.

Discussion and Conclusions: In principle, the concept of EPAs was supported by assistants and supervisors, though the factors of time, priorities in the clinical routine, lack of initiative and an inhibition on the part of the residents to approach the supervisors were the main causes that caused the concept to fail.

Take-home Messages: EPAs are a promising means of promoting self-regulated learning and a positive feedback culture on the path to increase confidence and safety in clinical practice. However, the implementation of EPAs failed in our setting, but we were able to identify important factors that disrupt or promote this process. These factors need to be controlled and influenced in such a way that the concept of EPAs can be sustained in everyday clinical practice.
SCOD4.2: SCOD - Curriculum - EPAs

#SCOD4.2.2 How stakeholders view the usefulness of narrative comments provided in EPA assessments (8061)

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ABSTRACT:
Background: Expanding use of entrustable professional activity (EPAs) assessments provide an opportunity to evaluate stakeholders use of assessment data for both formative and summative purposes. In this study we explored how stakeholders (medical students, faculty coaches [FC] and the Entrustment Committee [EC]) rate the usefulness of narrative comments from EPA assessments to understand this data's contribution to learning and decision-making.

Summary of Work: Narrative comments were purposefully sampled from assessments of EPA 1 (history [HX] and physical exam [PE]) on internal medicine in 2019-2020. Participants rated comments usefulness and ranked characteristics that make a comment useful. Two investigators scored the SMARTness (specific, measurable, accountable, realistic, time-bound) of the comments; total possible score = 18. Kruskal-Wallis (KW) analyses were used to assess whether significant differences existed among stakeholders usefulness ratings and rankings of comment characteristics. A Mann-Whitney U test was used to determine if statistically significant differences existed in ratings of the EC versus students plus FCs, and in ratings of comments with SMART scores ≥15 compared with those <14. All analyses involved multiple comparisons; Bonferroni correction yielded adjusted alpha levels of .0033, .005, .0022, and .0167, respectively.

Summary of Results: Thirty students, 15 FC and 6 EC members rated 59 narrative comments (response rate = 17%, 58%, 75%). There were no statistically significant differences in ratings among the groups or between the ratings of the EC compared to students + FCs. All groups rated 15 comments moderately or extremely useful (Range of KW H values = 0.01-7.55; p = 0.023-0.594). Thirty-one comments received a SMART rating of ≥15. All stakeholders ranked these comments more useful than those with scores <14 (p < .001). All stakeholders ranked the same comment characteristic most highly—includes a specific description of what is needed to improve.

Discussion and Conclusions: Stakeholders' perspectives provide insight into how EPA narrative comments can be used simultaneously to promote learners development and support summative entrustment decision-making.

Take-home Messages: Utility is dependent upon stakeholders context, purpose and views. To fully engage in a program of assessment, stakeholders must find the data to be meaningful and to meet their respective needs.
#SCOD4.2: SCOD - Curriculum - EPAs

# SCOD4.2.3 Is there bias in entrustment in the pediatric clerkship? (9355)

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**ABSTRACT:**

**Background:** Everyone has unconscious bias. There is evidence of bias in medical student grading. Anecdotally, minority students worry that bias may affect supervisor trust and influence ratings on Entrustable Professional Activities (EPA). We examined student assessment data for EPA items submitted by clinical preceptors to look for differences between 1) Under Represented race/ethnicity in Medicine (URM) vs non-URM students and 2) male vs female students.

**Summary of Work:** EPA items were added to student assessment for the 2019-20 academic year. Each student was evaluated by multiple preceptors. As the focus was on student characteristics, EPA item ratings were averaged across raters to provide average score for each student. Descriptive statistics of these averaged EPA ratings, number of raters, and clinical course grades were reported overall and by group (URM vs non-URM, male vs female). Group differences were assessed using ordinal Cochran-Mantel-Haenszel tests for discrete characteristics (clinical grades) and T-tests, confirmed by nonparametric Wilcoxon tests, for continuous characteristics (EPA ratings, number of raters).

**Summary of Results:** For 2019-20 academic year, 121 students were evaluated by 2-15 raters (avg 5.9 evals/student) resulting in 2085 EPA decisions rated from 1 (preceptor does all) to 5 (preceptor checks key parts). 33% of students were URM, 49% were female. There was significant difference in the average number of raters between URM and non-URM students (5.0 vs 6.3 p=0.02) and between female vs male students (6.4 vs. 5.4 p=0.03). Differences in rater numbers was not correlated with clinical grade. For composite score of all 3 EPAs, URM students were rated significantly lower than non-URM students (4.0 vs. 4.2 p=0.03); there was no significant difference between female and male students (4.2 vs 4.1 p=0.37). There were significant differences in clinical grades, with non-URM and female students receiving higher grades.

**Discussion and Conclusions:** Entrustment ratings by preceptors differed for URM vs non-URM students but not for female vs male students. There were differences in clinical grades for both comparisons. Our grades also involve a grading committee interpreting preceptors narrative comments. Next steps include looking for differences in narrative comments and implementing faculty development and unconscious bias training for preceptors.

**Take-home Messages:** Bias is seen in EPA ratings of medical students.
#SCOD4.2: SCOD - Curriculum - EPAs

#SCOD4.2.4 EPAs for Physician Patient Communication (8206)

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ABSTRACT:
Background: Competency based curricula across the globe stress on the importance of effective physician patient communication. A variety of courses have been used to train physicians for this purpose. However, few link competencies with practice resulting in confusions in implementation and assessment. This issue can be resolved by treating certain specific patient communication related tasks as acts of entrustment or entrustable professional activities (EPAs).

Summary of Work: We aimed to define a competency-based framework for assessing patient physician communication using the language of EPAs. A modified Delphi study was conducted in three stages. The first stage was an extensive literature review to identify and elaborate communication related tasks which could be treated as EPAs. The second stage was content validation by medical education experts for clarity and representativeness. The third stage was three iterative rounds of modified Delphi with predefined consensus levels.

Summary of Results: Expert consensus resulted in development of 4 specific EPAs focused on physician-patient communication with their competencies and respective assessment strategies all aiming for level 5 of unsupervised practice. These include Providing information to the patient or their family about diagnosis or prognosis; Breaking Bad news to the patient or their family; Counselling a patient regarding their disease or illness; Resolving conflicts with patients or their families. Experts agreed that these EPAs could be used along with any postgraduate training program or Continuing professional development course.

Discussion and Conclusions: This is the first study of its kind in which the EPA approach is being used to outline competencies and assessment tools for a patient-physician communication course. The EPAs for Physician-patient communication are a step toward an integrative, all-inclusive competency-based assessment framework for patient-centered care. Each EPA developed by expert consensus is a separate, discrete, observable and measurable task. Entrustment for these EPAs require proficiency in numerous communication competencies which can be assessed by several workplace-based assessment tools.

Take-home Messages: The EPAs for physician-patient communication provide measurable activities for patient-centered communication that can be linked to competency frameworks around the world. They provide a useful assessment framework for effective training in patient communication. They can be integrated into any postgraduate curriculum or tailored for a CPD course.
Entrustable Professional Activities defined for residency programs in General Internal Medicine: A systematic review

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**ABSTRACT:**

**Background:** Entrustable Professional Activities (EPAs) reflect day-to-day observable tasks, which are expected from doctors by the end of a training period, and for which trainees must gain their supervisors trust. EPAs are used in undergraduate medical education, but few residency programs use them. We aimed to review the EPAs defined for residency programs in General Internal Medicine (GIM). GIM may include both Internal Medicine (IM) and Family Medicine (FM). Therefore, we tried to distinguish between EPAs common and specific to either practice.

**Summary of Work:** We systematically searched databases and grey literature from January 2005 to February 2020. Studies were included based on date of publication, language and availability of a list of EPAs for residency programs in GIM. Data from articles were extracted, including language, date and residency program targeted (IM or FM). We also extracted EPA lists and categorized each EPA into themes to illustrate similarities and differences between IM and FM.

**Summary of Results:** Our search resulted in 1913 articles, 18 meeting inclusion criteria for a total of 368 EPAs from 15 different residency programs. Articles were mostly written by North American teams, from 2012 onwards. Half of the programs were designed for FM, half for IM. We organized the EPAs in 5 domains: (1) management of general adult population, (2) management of patients with specific needs, (3) care coordination and communication, (4) practice management and leadership, and (5) healthcare quality, educational activity and research. Those domains were further divided in 11 themes and 27 subthemes, with three subthemes specific to FM and one to IM.

**Discussion and Conclusions:** The majority of the residency programs using EPAs gather around the same domains, themes and subthemes. The specific choice of domains, themes and subthemes to include in a residency program reflects not only the scope of practice of a discipline within its context, but also the vision of the educators involved in the selection of the EPAs.

**Take-home Messages:** EPAs from GIM residency programs can be categorized into a framework of similar domains, themes, and subthemes, which can be useful for educators developing EPAs lists in GIM.
Influence of trainee personality on EPA performance in final year clerkship students (8868)

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ABSTRACT:
Background: Non-cognitive characteristics, such as personality, are known to have an impact on learning success in medical training, in addition to cognitive characteristics of the trainee. The personality model of Costa & McCrae (1999) entails five main factors (Big Five): conscientiousness, extraversion, neuroticism, openness, and agreeableness. This study explores the relationship of personality dimensions of medical students on their learning success in the final year clerkship operationalized as level of autonomy granted for carrying out Entrustable Professional Activities (EPAs).

Summary of Work: In 2019, an online survey was send out to medical trainees in the last rotation of the final year clerkship in Germany. Students indicated the level of autonomy (supervision) they carried out from a set of 12 Core EPAs for undergraduate training (Holzhausen et al., 2019). Five supervision levels ranged from not carried out to carried out autonomously with findings reviewed afterwards. The personality dimensions were measured with the Big Five Inventory-SOEP (BFI-S). Descriptive and inferential statistical methods were chosen to evaluate the relationship between personality dimensions and EPA performance, adjusted by age, gender and previous training in another discipline.

Summary of Results: The sample included 880 students. Personality dimensions showed small to moderate (r= -0.22) correlations between all single 12 Core EPAs. The correlations indicated that conscientiousness (r= 0.13; p<0.01), extraversion (r= 0.15; p<0.01) and neuroticism (r= -0.24; p<0.01) are significantly predicting the overall EPA performance. No effect had age, gender and previous training.

Discussion and Conclusions: Certain non-cognitive personality characteristics seem to influence the level of autonomy granted to medical trainees when carrying out EPAs in final year clerkship. The results complement prior research on what factor influences entrustment decisions in the clinical workplace.

Take-home Messages: The Big Five Inventory indicates that several non-cognitive main personality characteristics influence entrustment decisions in the clinical workplace.
#SCOD4.3: SCOD - Curriculum – Interprofessional Education

#SCOD4.3.1 Impact of case-based learning on healthcare professionals’ knowledge of and attitudes towards interprofessional team collaboration in childhood cancer: A feasibility study (8191)

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**ABSTRACT:**

**Background:** Complex treatment of children and adolescents with cancer involves multiple healthcare professionals working together to improve treatment and care. Healthcare professionals have specialised knowledge and skills but rarely formal learning on how to collaborate interprofessionally. The objective of this feasibility study was to improve healthcare professionals knowledge of and attitudes towards collaboration and interprofessional learning with case-based learning.

**Summary of Work:** Originally planned as a randomised controlled trial for 14 occupational groups, the study was converted to a feasibility study due to COVID-19. Before and after measurement tools included: Assessment of Interprofessional Team Collaboration Scale (AITCS); Readiness for Interprofessional Learning Scale (RIPLS); and Safety Attitudes Questionnaire. A multiple-choice quiz tested knowledge of gastrointestinal side effects. Feasibility was assessed at the end of the study using Bowens domains of acceptability, practicality, demand and implementation.

**Summary of Results:** Representing 13 occupational groups, 49 healthcare professionals completed the case-based learning sessions before the intervention was stopped due to COVID-19. 88% rated the professional content good or very good. 79% completed pre-and post-questionnaires. Mean difference postintervention scores increased on three scales (overall total scores): AITCS: 5.9 (95% confidence interval (CI) 1.1 to 10.7; p=0.02); RIPLS: 2.8 (95% CI -0.06 to 5.8; p=0.05); MCQ: 0.8 (95% CI -0.08 to 1.7; p=0.07).

**Discussion and Conclusions:** Interprofessional case-based learning affects healthcare professionals knowledge of and attitudes towards collaboration and interprofessional learning. Interprofessional case-based learning is feasible and acceptable. Trained facilitators are required to conduct discussions with healthcare professionals with various educational backgrounds, work experiences and responsibilities. Implementation requires leadership commitment at all levels.

**Take-home Messages:** Team collaboration and interprofessional learning can be improved with interprofessional case-based learning. This requires interprofessional planning and implementation, and clear leadership commitment.
#SCOD4.3: SCOD - Curriculum – Interprofessional Education

# SCOD4.3.2 When in situ meets project management: A case of very interprofessional collaboration (8208)

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ABSTRACT:
Background: This project is a first collaboration of international teams on obstetric critical care in situ program in 2019. With limited project lead time, the project manager adopted a combination of project management methodologies of product development to manage this project. The biggest challenges are persuading two hospitals to join in the project while planning for synchronized work of 3 international teams.

Summary of Work: 3 teams, 3 locations, 2 continents, 2 full-day obstetric critical care in situ simulations, 2 days in 2 hospitals in 2 cities, 4 scenarios, 7 professionals, 1 conference speech, within 3 months. This project is a pilot of Austrian-Chinese in situ training program. Viewing the in situ activities as an urgent product, the project manager decided to combine traditional waterfall approach and scrum-based agile project management techniques to execute this project. The project development team consisted of product owner (MD, simulation expert), project manager/scrum master (CHSE, facilitator), and product development team (content expert, MD, RN, operator) from Linz, Taipei and Shanghai. The three teams have professionals come from Obstetrics, Anesthesiology, Nursing, Midwifery, Neonatology, Simulation Education, and Project Management. The in situ activities were conducted in a public maternal hospital in Shanghai, and a private one in Changzhou city (200 km from Shanghai).

Summary of Results: A total of 37 clinical care givers participated in the two in situ simulations, including obstetricians, midwives, nurses, anesthesiologists, and neonatologists. Important tasks, barriers and critical success factors were identified in the project life cycle. All documents were kept as organization process asset for follow-up projects.

Discussion and Conclusions: Communication was found the most challenging task. Barriers identified include differences of culture and healthcare systems (protocol, medication and legal regulations). Simulation educators adequate awareness of participant psychology changes enabled smooth flow of in situ, while the improvisational flexibility of supporting team assisted the educator in situation control. The last but also the fundamental success factor is the support from top management of hospitals.

Take-home Messages: An interprofessional collaboration outside of healthcare scopes can significantly improve effectiveness and efficiency of education activities. Findings will be employed to continuous improvement and development of practice standards for the program.
#SCOD4.3: SCOD - Curriculum – Interprofessional Education

# SCOD4.3.3 Development of interprofessional outcomes for health profession education adjusted to the local context (9202)

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ABSTRACT:
Background: Interprofessional collaboration is needed for effective, safe and patient-centred care and students need to acquire interprofessional competencies. International interprofessional competency frameworks cannot be applied to the context in Germany without adaptions, because of the differences in the health care system, the education of health professionals as well as existing traditions and culture. In this study, we developed in a systematic approach an outcome framework for interprofessional collaboration for the training of all health profession adopted to the local context.

Summary of Work: The study was conducted for the context at the Charité - Universitätsmedizin Berlin, Germany. In step 1, a working group, consisting of faculty members and students from various health professions (n = 12), formulated a catalogue of interprofessional learning outcomes using Nominal Group Technique, literature and several rounds of small group discussions. In step 2, the outcome catalogue was refined and validated in a Dephi study with an additional group of faculty members and students from various health professions (n = 17). An agreement of 75% and higher was considered as consent on given items.

Summary of Results: Step 1 resulted in a draft for the interprofessional learning outcomes organized in four overarching domains and specified learning objectives in the categories knowledge, skills and attitudes. In step 2, a two-round Delphi process resulted a consent the interprofessional outcome domains: 1) roles and responsibilities, 2) collaboration, 3) communication, and 4) dealing with conflicts in the interprofessional team. In addition, it was agreed on 15 learning objectives for each domain specifying the relevant knowledge, skills and attitude.

Discussion and Conclusions: We developed in a systematic process an interprofessional outcome framework for the local context. The framework will be used for outcome-oriented curriculum development for all health profession programs at our institution.

Take-home Messages: Interprofessional collaboration differs from context to context. Interprofessional outcomes should be developed jointly with faculty members and students to increase the acceptance of the outcomes for the outcome-oriented curriculum development.
#SCOD4.3: SCOD - Curriculum – Interprofessional Education

# SCOD4.3.4 Design guidelines for the assessment of interprofessional competencies in health care education: A consensus study (8210)

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ABSTRACT:  
**Background:** Future healthcare demands professionals who are educated in an interprofessional (IP) context. Well-designed IP assessments are needed to determine that students have developed these IP competencies. At the moment, evidence-informed guidelines are missing for the design of IP assessments. The aim of this study is to develop guidelines for the assessment of IP competencies in healthcare education.

**Summary of Work:** A qualitative consensus study design was conducted using the Nominal Group Technique. This study was performed in two phases: (1) five intra-group meetings, to reach consensus within five expert groups, and (2) one inter-group meeting, to reach consensus between five expert groups, being educational scientists (n=7), IP experts (n=6), patients (n=5), students (n=9), and teachers (n=7). In each session, participants were invited to define guidelines on three main areas: the assessment task, the constellation of assessors, and the assessment procedure, and to prioritize the guidelines they find most relevant. We used deductive and subsequently inductive thematic analysis.

**Summary of Results:** A total of 26 design guidelines were agreed on. The study yielded 10 design guidelines for the IP assessment task. It was agreed that the task is authentic and (partly) workplace-based. Performances should be a mix between student products and processes. The NGT sessions yielded 10 guidelines for the IP assessors. Examples of guidelines are that the pool of assessors in IP assessments should consist of multiple assessors from different domains, who have experience in working interprofessionally. Patient(s) should be part of the assessor team. Six guidelines were formulated for the design of the IP assessment procedure. It was agreed that an assessment tool is available, for example a checklist, in which the criteria are transparent and understood by students and assessors.

**Discussion and Conclusions:** This study shows that the design of IP assessments requires additional guidelines to the design of monodisciplinary performance assessments, yet can learn from its existing knowledge. An important next step is to use these guidelines in practice to design an IP assessment and adjust or improve them where deemed necessary.

**Take-home Messages:** Our main message is that for interprofessional education to be successful, an aligned and coherent assessment is needed.
# SCOD4.3: SCOD - Curriculum – Interprofessional Education

# SCOD4.3.5 How does interprofessional education influence students’ collaborative behaviour in the clinical setting? A qualitative study using Social Capital Theory (7953)

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ABSTRACT:
Background: IPE-initiatives aim to improve students collaborative competencies and behaviour. The effect of classroom IPE on students collaborative behaviour in clinical practice is not yet investigated. In this study, the Social Capital Theory is used as the theoretical lens. The research question was: How does IPE in a classroom setting influence collaborative behaviour of students in clinical practice?

Summary of Work: A qualitative study with semi-structured face-to-face interviews was conducted to explore students experiences. Interviewees were nursing and medical students who participated in four classroom IPE-sessions. One of the main interview topics was the perceived influence of the IPE-sessions on students IPC behaviour. Thematic analysis was conducted, with codes for bonding, bridging and linking social capital.

Summary of Results: 22 Interviews were conducted. Our results show four different, but related effects students experienced of the IPE-sessions on their IPC behavior: 1) exchange of discipline specific knowledge, 2) general knowledge about each others responsibilities, 3) reduction of hierarchy, 4) improvement in patient care. The four themes show an increase of bridging and linking social capital among students. The fourth theme most explicitly reflects getting ahead, what is described as an effect of increased social capital.

Discussion and Conclusions: This study reveals new insights in how increased social capital of undergraduate students after IPE-sessions in classroom setting, influences the way they participate and experience IPC in clinical practice. These insights contribute to the understanding of the effectiveness of IPE in undergraduate curricula. Further research on long term effects is underway.

Take-home Messages: Besides indirect improvement in patient care because of, for example, enlargement of knowledge resources, students explicitly described that they experienced an improvement in patient care as a result of the IPE-sessions in classroom setting. These findings make classroom IPE-initiatives a valuable contributor to sustainable IPE, and justify educational facilities to set up and investigate in this form of IPE.
AUTHOR(S):
Sophie Hughes, Newcastle University, UK*

ABSTRACT:
Background: The transition from preclinical to clinical medicine is one of the most anxiety-provoking periods during medical school. Transition courses are thought to prepare students for this, although the literature surrounding them is limited. Consequently, Newcastle University introduced a transition course called Transition to Clinically Based Learning (TCBL) for their Medicine and Surgery MBBS programme. TCBL was new for 2018/19 so current understanding of the support it offers is small.

Summary of Work: This study aimed to explore medical students’ perceptions of TCBL in order to improve the understanding of the support this course offers. An interpretative phenomenological analysis (IPA) approach was followed. Three Newcastle University medical students were recruited a year after they completed TCBL. Data was collected using semi-structured interviews; these were analysed using an IPA framework proposed by Smith, Flowers and Larkin in Interpretative Phenomenological Analysis: Theory, Method and Research.

Summary of Results: Three super-ordinate themes emerged, capturing the participants’ perceptions of the support offered by TCBL and any further assistance they felt they required during the transition. These themes comprised understanding the role of the medical student, confidence in the clinical environment and feelings of frustration.

Discussion and Conclusions: The participants identified several supportive elements of the course including near-peer interaction as well as continuity between TCBL and Year 3. In particular, this near-peer interaction allowed the participants to talk to trustworthy role models, giving them what they perceived to be reliable insight and advice regarding the life of a clinical medical student and what would be expected of them next year. An interesting finding focused on the nuanced opinion that some stress during TCBL may provide students with valuable learning experiences to aid their professional development in the long-term. However, too little guidance can overwhelm students. Thus, a combination of these approaches may be needed during TCBL to create a holistic support network, although further research and discussion is required to explore this.

Take-home Messages: Near-peer interaction can provide reassurance for students during the transition. Furthermore, some guidance is required to provide students with a gradual introduction into the clinical environment but a degree of uncertainty may help prepare them for their future careers.
AUTHOR(S):
Amani Patel, Frimley Park Hospital, UK*

ABSTRACT:
Background: Starting work as an FY1 (Foundation Year 1) doctor is a daunting process as it feels like stepping into the unknown. Juniors often lack confidence and feel unprepared to deal with emergencies. Medical simulation allows clinicians to practice managing emergencies in a high fidelity, low-risk environment, with the opportunity to learn from mistakes and debrief scenarios with colleagues. We designed a simulation programme for FY1s, with the aim of improving confidence when managing emergencies and therefore enhancing practice and patient safety.

Summary of Work: The simulation course consisted of 15 consultant-approved emergency scenarios and was completed by 40 FY1 doctors in small groups. A survey was sent to all FY1s prior to the course to address concerns and gauge particular topics of interest. Following a presentation covering the ABCDE approach, each FY1 completed a simulated medical or surgical scenario with a simulated patient, a nurse present and investigations, results and senior advice available. This was followed by a facilitated debrief focusing on human factors and medical management with the opportunity for reflection and learning.

Summary of Results: Analysis of feedback from all FY1s showed 100% of participants agreed that: the training was useful, they understand more about the topics covered, they have more confidence to deal with emergencies and topics covered will change and enhance their practice. Additional comments from participants stated there was a supportive atmosphere, scenarios were realistic and all participants expressed interest for further sessions.

Discussion and Conclusions: Our feedback demonstrated that the simulation course was effective in improving confidence and changing practice among FY1 doctors in managing emergencies. Following the positive feedback, we have scheduled further sessions and plan to continue this course yearly, with increasing involvement from nursing staff and consultants to enable a collaborative working dynamic.

Take-home Messages: Simulation provides an effective learning opportunity that enables the chance to build confidence, put theory into practice and enhance practice among junior doctors. This programme will be continued yearly as it has demonstrated a positive impact among FY1 doctors.
ABSTRACT:
Background: Professional ability refers to the ability of medical theoretical knowledge and clinical skills. For eight-year medical education program in China, medical students would receive standardized resident training since the sixth grade, which is an important transitional stage for clinical medical students from undergraduate medical education to postgraduate medical education. This study explored whether there are differences in professional ability increment among medical students of different grades, and tried to find out the related influencing factors.

Summary of Work: We designed a questionnaire for senior medical students and conducted a survey in Peking University. The measurement of professional ability increment was self-reported by students. We selected medical students of eight-year medical education program from Grade 5 to Grade 8, that is, students who were about to enter or had just completed standardized resident training. Two hundred and seventy-nine medical students who complied with the requirements were included and hierarchical regressions were performed.

Summary of Results: This study verified that there were differences in professional ability increment among medical student of different grades. The increment of sixth grade students was significantly lower than that of fifth grade students. Further analysis showed that the clinical skills test scores at the end of undergraduate stage had a significant positive effect on professional ability increment. In addition, whether receiving sufficient relevant training and engaging in active interaction with others were also significant influencing factors.

Discussion and Conclusions: There are differences in professional ability increment among medical student of different grades, especially when medical students have just entered in standardized resident training, those who are easy to have self-doubt about themselves, and need time to adjust and adapt. However, medical students who perform well in clinical skills, receive sufficient relevant training, or actively interact with others are more likely to gain professional ability.

Take-home Messages: For medical students who have just entered standardized resident training, interaction and guidance should be strengthened and adequate professional ability training should be provided to help them adapt to the clinical environment, so as to gain more professional ability.
#SCOD4.4: SCOD - Curriculum - Transition undergraduate to postgraduate

# SCOD4.4.4 Addressing the Blank Slate Phenomenon: What Residency Program Directors Want from Medical Schools in a Learner Handover (9600)

AUTHOR(S): Holly Caretta-Weyer, Stanford University School of Medicine, USA*

ABSTRACT:

Background: Central to competency-based medical education is the need for a seamless developmental continuum of training and practice. Trainees currently experience significant discontinuity in the transition from undergraduate (UME) to graduate medical education (GME). The learner handover aims to smooth this transition, but little is known about the GME perspective on the desired content of the handover or the process of receiving such a handover. This study explores program directors (PDs) perspectives on the ideal design of a learner handover.

Summary of Work: Using case study methodology, semi-structured interviews were conducted with twelve Emergency medicine PDs within the United States from October to November 2020. Participants were asked to describe the ideal content and process of a learner handover from UME to GME. Conventional content analysis was performed using an inductive approach.

Summary of Results: A model was designed for the desired content of a learner handover from UME to GME. This model includes a summary of the students progress on the AAMC Core Entrustable Professional Activities broken down by core functions as well as reflection on diagnostic reasoning and critical thinking skills, team-based skills such as leadership and communication, following through on professional responsibilities, capacity for self-directed learning, and self-awareness of how to cope with stress and facilitate wellbeing in residency. An ideal process was also defined for transmitting, processing, and utilizing this information. This includes a conversational handover where the recipient can ask questions, development of a file including areas of strength, domains to target for coaching, and an initial draft of an individualized learning plan.

Discussion and Conclusions: Traditionally, entering residents are treated as blank slates by PDs due to a lack of a learner handover. PDs desire an honest assessment of a students strengths and growth areas in order to aid them in their transition to residency.

Take-home Messages: A learner handover following the proposed model will ameliorate much of the discontinuity felt by students and facilitate a true continuum from UME to GME. Formal evaluation of the proposed learner handover process is essential to ensure the needs of all stakeholders are met.
#SCOD4.4: SCOD - Curriculum - Transition undergraduate to postgraduate

# SCOD4.4.5 Development of clinical reasoning during the transition from a medical graduate to a junior doctor: A qualitative study with novice medical graduates in Sri Lanka (9146)

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ABSTRACT:
Background: The transition from graduates to doctors, puts additional demands on ones clinical reasoning ability. Despite the criticality of this period, literature exploring the longitudinal development of clinical reasoning during transition is limited. This longitudinal study was conducted to explore how junior doctors learn and develop clinical reasoning and develop a framework to condense the empirical findings and bridge the recognised gaps in the literature.

Summary of Work: The study employed a hermeneutic phenomenological methodology and was conducted on junior doctors during their first clinical placement (internship) over a period of 12 months. Semi-structured narrative interviews (n=18) to explore their experiences of learning clinical reasoning and post-consultation discussions based on recorded doctor-patient consultations (n=48) to explore their reasoning during consultations were conducted. All interviews were audio-recorded, transcribed verbatim and analysed to generate themes to explain the dataset as a whole.

Summary of Results: Eight broad themes were formulated. The themes emphasised clinical reasoning as an evolving process, it changes during undergraduate training and along the internship and is influenced by drivers, facilitators, sources and challenges of learning clinical reasoning. During the transition, there is an abrupt transformation of the approach to clinical reasoning influenced by many factors, from a disease-oriented to practice-oriented model. This produces a steep learning curve for junior doctors. However, some factors of this model can be culture specific particularly concerning the role of senior doctors and the junior doctors self-views which can vary between different cultural contexts.

Discussion and Conclusions: The transition from a medical graduate to a junior doctor is very challenging and stressful with a steep learning curve. The mismatch between the disease-oriented approach, which is learned as undergraduates and the practice-oriented approach demanded in practice is the main challenge. Understanding the complex factorial relationships in this model will therefore help re-orient and reform undergraduate clinical education and internship training to narrow the gap in clinical reasoning and ease the transition from graduation to the internship.

Take-home Messages:
1. The factors informing the development of the practice-oriented approach to reasoning are diverse, yet many are learnable.
2. Efforts need to be taken to ease the transition during undergraduate training and the internship.
#SCOD4.4: SCOD - Curriculum - Transition postgraduate to consultant

# SCOD4.4.6 Factors impacting their transition from trainee to consultant: Perceptions of newly appointed consultants (9574)

AUTHOR(S):
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ABSTRACT:

Background: Transition is an integral part of medical education and doctors experience transition from entry into medical school to becoming a consultant. Preparedness and medical transition has been widely researched from student to trainee. Very few studies focused on trainee to consultant transition. Preparedness and transition are affected by internal and external factors. This study aims to gain insight into facilitators and barriers of trainee to consultant transition.

Summary of Work: Preparedness for transition is from specialist training in clinical/non-clinical skills. Reality is transition and environmental (learning culture) and individual differences (learners capacity) influence reality. Regarding value-fact dichotomy, fact is transition. Value is interpretation of consultants experience. The aim is to capture this value-added perception of transition rather than actually measuring transition. Reality in post-positivism exists but not fully understood and objectivity is interpretation and social construction of knowledge rather than pure factual truth. Preparedness, a reality, is influenced by experience of participants. This can be objectively expressed by participants. So research paradigm is post-positivism. A descriptive survey design using a questionnaire for all newly appointed consultants from 2013-2016. Rigour maintained throughout and questionnaire distributed and received electronically. Participation was voluntary with reassurance of confidentiality and anonymity. Ethical approval sought. Descriptive statistics for data analysis.

Summary of Results: Fifteen (57.69%) (15/40) responded and completed questionnaire. Consultants more prepared in clinical than non-clinical skills. Fourteen (93.33%) indicated training gaps in service development and 46.67% (7) gap in leadership/management. Colleague support, feeling stressed & mentoring impacted transition. All reported colleague support was an important factor & eight (53.33%) as most important factor. Thirteen (86.67%) felt stressed impacted transition and eleven (73.33%) as most hindrance. Four (26.67%) with mentor was less stressed.

Discussion and Conclusions: Consultants feel underprepared in non-clinical generic skills which impacts transition. Implications for practice and policy revolve around inclusion of non-clinical skills in specialist training programmes and developing tools/support mechanisms to facilitate smooth transition. Similar findings noted in researchers from mainland Europe and UK using different research designs.

Take-home Messages: Preparedness in non-clinical skills from training can facilitate feelings of stress and lack of support can hinder transition.
AUTHOR(S):
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Lindsey Pope, University of Glasgow, UK
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ABSTRACT:
Background: UK child health outcomes have been criticised as being poorer than in other similar nations. Despite this, current GP training does not include a mandatory paediatrics post. Furthermore, paediatrics teaching at postgraduate and undergraduate levels (within the UK) often takes the form of a hospital-based specialty. This traditional structuring of teaching inadvertently leads to greater emphasis on presentations prevalent in secondary care instead of primary care. Our aim was to explore what the common paediatric presentations are in primary care, as well as rare but important conditions, which should be emphasised in undergraduate teaching.

Summary of Work: An online survey accessible to GPs involved in medical education, at Glasgow University, was conducted. Participants communicated experiences of common presentations/conditions in primary care and those that are rare but equally important for medical students to have knowledge of. The qualitative data garnered was thematically analysed. Results from the questionnaire were then compared against the RCGP National Child Health Curriculum as well as the Glasgow University Undergraduate Child Health Curriculum.

Summary of Results: From quantitative and qualitative analysis of 45 responses, the top 10 most common and top 10 most rare but important paediatric conditions were deduced and tabularly presented. Significant overlap was observed between clinical presentations listed as commonly occurring in this study, the RCGP curriculum and the Glasgow University curriculum. It was more difficult to assess whether the clinical presentations and conditions listed as rare but important had been adequately mentioned in both curricula.

Discussion and Conclusions: The RCGP national curriculum briefly outlines aspects of primary care paediatrics teaching for medical students. There is a paucity of data concerning the effectiveness of primary care paediatrics teaching within medical schools, and which conditions/presentations should be prioritised. It is hoped future research will focus on obtaining the paediatrician perspective and exploring any dissonance between paediatrician and GP teaching priorities. These research findings can be used to inform virtual case-based teaching so emphasis is placed on commonly occurring presentations/conditions in general practice as well as the rare but important variety.

Take-home Messages: Further research in this area is particularly important considering 31.6% of FY2 doctors were appointed to GP training (UK Foundation Programme Survey).
#SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.2 Medical students’ perceptions, attitudes and developing EBM competencies play an important role in design and delivery of an EBM curriculum in an undergraduate medical school (9656)

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ABSTRACT:

Background: Currently there is limited information on the role of medical students feedback in the design and delivery of EBM curriculum. The University of Buckingham Medical School designed a multifaceted, clinically integrated EBM curriculum. The aim of this study was to use medical students feedback to evaluate and drive quality improvement of the new EBM curriculum.

Summary of Work: Students were recruited to participate in two focus groups in year one and in year three. Focus groups were conducted by senior students and discussions were transcribed verbatim and independently analysed by the authors according to the principles of thematic analysis. Results were taken on board to revise the EBM curriculum.

Summary of Results: Five students in the first year and nine students in the third year participated in the focus groups. Four key themes were identified from first year students: (1) improved understanding of the relevance of EBM to clinical practice, (2) learning experience as medical students, (3) practicing EBM as medical students and (4) perceived use of EBM in clinical practice. Themes from clinical rotations were (1) appreciation of the importance of EBM to clinical practice, (2) barriers to applying EBM in clinical practice and (3) enablers to facilitate clinical integration of EBM curriculum. Based on feedback, EBM curriculum is being further enhanced with a supportive learning environment in clinical rotations. Some of the changes made include adjustments to the Education Prescription, creation of a new supervised learning event as part of the NHS ePortfolio for students to complete, creation of online modules explaining the core EBM concepts accessible to all student years, and a new peer mentoring system.

Discussion and Conclusions: EBM has been perceived to be important by medical students during training and for future practice. Clinically integrated EBM curriculum with continued guidance could encourage students to gain confidence in their developing EBM competencies.

Take-home Messages: 1. Focus groups revealed opinions from students on EBM curriculum.
2. Perceptions identified enablers and barriers and helped in design and delivery of the curriculum: peer mentoring, online modules, clinical assessments, new e-portfolio ticket.
3. An ever-evolving medical curriculum requires student feedback and subsequent implementation.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.3 The Use of 3D Printed Models in Anatomy Teaching (9051)

**AUTHOR(S):**  
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Sudiksha Devendra Kumar, University of Leicester, UK  
Zobia Wadi, University of Leicester, UK  
Terese Bird, University of Leicester, UK

**ABSTRACT:**

**Background:** Traditional anatomy teaching comprises of cadaveric dissection, studying 2D images and using anatomy apps. This gives students limited appreciation for the association of anatomical structures in relation to one another - otherwise known as the anatomical cognitive map. Our study examines how 3D printed (3Dp) models can fill these gaps.

**Summary of Work:** In 2018, these models were introduced into the Leicester Medical Curriculum through the painting of 3Dp brains. This led to a workshop at the INSPIRE NMRC Conference 2019, in which participants assembled 3D printed carpal bones and answered wrist anatomy questions. This pilot study interprets the workshop methods and findings, proposing that 3Dp is a viable proposition for anatomy study. We designed the workshop with the Anatomy Lead for N=60 participants. They were divided into groups and provided with task instructions, an iPad with Complete Anatomy©, and a set of carpal bones printed in double size. They were challenged with articulating the bones and answering a series of questions. N=30 participants submitted feedback, which was analysed for emerging themes, to evaluate their learning using 3Dp artefacts.

**Summary of Results:** 95% of respondents felt that working with 3Dp aided their understanding of carpal bones, with most saying that it helps to understand orientation and articulation of bones, however one participant felt [the activity] was too hard. Participants suggested the use of 3Dp artefacts would help students to translate 2D to 3D, visualise pathologies, orientate structures, facilitate kinaesthetic learning, and understand bone surfaces and articulations - indicating cognitive map formation.

**Discussion and Conclusions:** The ability to visualise and navigate this mental representation varies (St Clair-Thompson & Botton, 2009). Object-based learning theory suggests that interacting with 3D models increase mental rotational skills (Chatterjee & Hannan, 2015). Tactile manipulation strengthens the relationship between spatial information and theoretical concepts, promoting retention of information (Wu and Shah, 2004; Preece, Williams, Lam, and Weller, 2013; St Clair-Thompson and Botton, 2009; Estevez, Lindgren & Bergethon, 2010). Further research may include holding pre-exam revision sessions with 3D artefacts and mapping students attainment.

**Take-home Messages:** Including 3Dp models within the curriculum would benefit students learning experience by encouraging active learning and discussion as well as being enjoyable.
A depth approach to learning anatomy: Teaching novices to expert levels

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ABSTRACT:
Background: Learning of anatomy has been likened to vocabulary acquisition, in Blooms lowest category: knowledge/remembering. We sought to design an ecologically valid anatomical reasoning exercise to demonstrate that evaluating and analyzing is possible even by novice anatomy learners.

Summary of Work: Three learners, aged 15, 19, 23 years with no prior medical training learned to interpret pediatric elbow radiographs, a task with complicated bony anatomy. They interpreted unmarked radiographs to ascertain the presence or absence of a fracture. Once they committed to a diagnosis, they were given corrective feedback. They had access to a web tutorial, a reference article and an online radiology textbook. The first participant received coaching from an expert clinician; he then peer-coached the next participants. Learning analytics were available to determine accuracy, the learning curve and the time spent. These were compared to a published mastery standard for expert clinicians. During a one-hour post-examination, while reading new radiographs, participants performed voice-aloud, allowing coding of utterances by Bloom category.

Summary of Results: The participants were indeed able to achieve the mastery standard for Emergency Medicine physicians, requiring 182, 329, 268 cases with feedback to do so (4.0, 18.2, 8.0 hrs respectively). In the voice-aloud session, each demonstrated higher levels of Blooms taxonomy. For example, for a subtle fracture of the proximal radius, one participant noted the Radiocapitellar line is off on the anteroposterior view and in the lateral view and there is [evidence of effusion] so I think there is a fracture present demonstrating analysis of anatomical evidence to support a conclusion (analyzing). In another, the participant (appropriately) disagreed with the radiology report, stating it is unlikely a radial neck buckle fracture could cause the visualization of a posterior fat pad (evaluating).

Discussion and Conclusions: Premedical students were able to learn a limited domain of anatomy to a near-professional standard, demonstrating advanced anatomical reasoning. This depth approach could complement the traditional coverage approach to ensure the learner has an appreciation of anatomical reasoning.

Take-home Messages: Novices, investing enough time, can learn the meta-cognition associated with professional level anatomical reasoning even at a precocious age. This whole-task orientation could reinforce anatomical reasoning from an early stage of development.
SCOD4.5: SCOD - Curriculum - General

#SCOD4.5.5 Basic Research Workshops for Medical Students: Strengthening Grassroots for Research in Developing Countries (7389)

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ABSTRACT:
Background: The quality and quantity of healthcare research leave a lot to be desired in developing countries such as Pakistan. To address this issue at a grass root level, our study aims to assess the impact of research workshops (RWs) designed to teach essential research skills to undergraduate medical students in Pakistan.

Summary of Work: A series of Research Workshops (RWs) were conducted at Aga Khan University, Pakistan in January 2020. Six essential research skills blocks i.e. a) initiating research, manuscript writing and publication, b) ethical approval, c) referencing, d) data collection and analysis, e) creating and delivering presentations, and f) networking Breakfast with Mentors session were offered by experienced faculty and student mentors. RWs employed a variety of teaching pedagogies such as interactive discussions, hands-on activities, student presentations, podcasts, and formative assessments. To evaluate the efficacy of the RWs data was collected through a pre-RW assessment of baseline research skills, pre- and post-RWs self-proficiency ratings (lowest: 1- highest: 10), post-RW feedback, and a 6-month follow-up survey conducted in July 2020.

Summary of Results: One hundred and eighty seven students with a mean age of 20.32 year attended the RWs. Participants reported improvement in self-proficiency for all learning objectives covered in six RWs (p < 0.001), with the highest improvements in ‘Avoiding Plagiarism and Using Referencing’ (4.78 ± 2.31) and ‘Ethical Approval and Writing Research Protocol’ (4.21 ± 2.03). At the 6-month follow-up survey; 78% students reported involvement in research projects after attending the RWs, as compared to before (26.1%; p < 0.001). Eighteen (20.5%) students reported having peer-reviewed indexed publications 6 months post versus only 3 (3.4%) peer-reviewed publications before the RWs (p < 0.001). The mean impact factor for these publications were 1.393 [range: 0.409-2.642]

Discussion and Conclusions: Our results demonstrate the effectiveness of RWs in improving the quality and quantity of research output amongst medical students. Participant engagement was achieved and maintained through the use of innovative and interactive teaching pedagogies and mentorship.

Take-home Messages: The curriculum implemented in the Research workshops provides a solid framework for the adaptation of a research curriculum within the conventional undergraduate medical education in Pakistan and other developing countries.
Basic Research Competencies Framework: A medical student-led curriculum framework

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Matthieu Pierre, International Federation of Medical Students Associations, Belgium
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ABSTRACT:

Background: Basic research competencies is an important quality for medical students who are future clinicians. However the current medical curriculum has been repeatedly described to lack research education. Peer-to-peer Research Educational Activities (EAs), organized by experienced students often with the help of professors, can be a way to fill this gap. In fact, 62/125 IFMSA National Member Organisations (NMOs) reported that they use ready-made training to promote Access to Research and Research Education.

Summary of Work: The project was designed to be executed in multiple, clearly demarcated phases. Phase 1, which began in January 2019, consisted of literature review and a quantitative cross-sectional study of research education in undergraduate curriculum globally, including the taught research competencies, and also addressed student perceptions towards research education. This was followed by phase 2 - a qualitative study through focused group discussions with medical students and thematic analysis of the key emerging themes. The final phase 3 involved drafting of the competency framework by an experienced working group. The framework is currently being reviewed by experts and will be published openly before the time of AMEE conference.

Summary of Results: We have established 5 main roles for medical students to learn within their curricular research journey. Every role is further divided into specific competencies and skills in a check-list manner. The 5 main roles consist of Investigator, Analyst, Author, Collaborator and Professional. First three cover the basic research knowledge and skills, while the latter two aim at strengthening the students soft skills and approach to research and evidence based medicine.

Discussion and Conclusions: IFMSA believes in the importance of research and evidence-based medicine in healthcare. Understanding research and practicing scientific medicine is not inherent. With this framework, we propose a systematic approach to essential, oftentimes neglected, competencies that should be included in medical curricula.

Take-home Messages: Education should be designed by all stakeholders, including students. This framework lists necessary competencies in research education and highlights the demand for further teaching tailored to students needs.
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ABSTRACT:
Background: Simulation and validated pre-prescribing are perceived by medical students to be the most effective methods of teaching prescribing skills. However, this is not currently widely available. The British Geriatrics Society recommend that all medical students be able to describe concepts of safe prescribing in older adults and polypharmacy. The aim of this project was to explore students perceptions of their ability to prescribe for older adults safely, and to determine if simulation can improve confidence in prescribing for the older adult.

Summary of Work: Students (n=21) participated in an older adult prescribing simulation session facilitated by junior doctors and pharmacists. The sessions focussed on poly-pharmacy, medicines reconciliation, Parkinsons disease (PD) medication and medications associated with falls. Students completed pre and post questionnaires.

Summary of Results: Following the session 100% (n=21) of students felt that they had good knowledge of PD medications, the adverse effects of incorrect administration of these medications, awareness of polypharmacy and confident they could complete a medicines reconciliation for a patient. 100% (n=21) were aware of medications that could contribute to falls, whilst the majority also felt confident in deciding what medications were necessary for a patient (n=20). All students responded that the session was useful and delivered at the correct stage of their training (n=21).

Discussion and Conclusions: Students find older adult prescribing simulation useful in undergraduate training and can improve confidence in prescribing for the older adult. Further work to determine if improved confidence in older adult prescribing after simulation is sustained would be of benefit.

Take-home Messages: Simulation improves student confidence in prescribing for the older adult.
# SCOD4.5.8 Complementary Role of Short Message Service (Text message) for immediate feedback from students in pre-clerkship course evaluation (8009)

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**ABSTRACT:**

**Background:** End-of-course evaluation surveys have long been the benchmark for gauging student feedback. However, this method has limitations of low participation and poor recall. SMS as a complementary feedback assessment tool could help overcome challenges in current evaluation systems.

**Summary of Work:** Thirty Four percent of the 2020 first year MD class (17 students) enrolled in an IRB approved Fall 2020 SMS survey trial. The website SimpleTexting.com was utilized to send anonymous text messages in an organized and uniform manner. Students received no more than three text messages per week for pre-selected teaching activities. At the end of each designated session, SMS messages were sent to students asking them to select between a thumbs up (1) or thumbs down (2) via SMS. They were also given the option to write additional feedback in less than 160 characters. All responses were collected and analyzed.

**Summary of Results:** Overall, 17/50 (34%) of students participated with a total of 30 educational sessions being polled. The response rate was 21/30 (69.67%) with a high of 29/30 (96.67%) and a low of 15/30 (50.00%) response rates. The average session approval rating was 1.18 with 12/30 (40%) and 2/30 (7%) receiving approval and disapproval, respectively. There was an average of 3.87 comments per session with 2 sessions receiving a high of 11 comments and 7 sessions receiving 1 comment each. The average rating/comments for session were as follows: PBL = 1.03/2.4; BSL = 1.15/3.35; TBL = 1.24/4.43; AL = 2/11.

**Discussion and Conclusions:** Our data supports the notion that consistent, immediate student feedback can provide insight to individual teaching sessions, opposed to a global critique of the course. A review of student succinct comments conveyed meaningful and constructive ideas. This study is significant because it demonstrated that SMS, a simple and easily accessible technology, can yield both a robust response rate and practical real-time means of gathering student feedback.

**Take-home Messages:** Immediate succinct feedback of the learning sessions through SMS has the potential to increase student participation for course evaluation.
#SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.9 Development and validation of the Obstetrics and Gynaecology Educational Environment Measure (OGEEM) (9713)

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ABSTRACT:
Background: Education and the environment in which it is delivered, are closely interlinked. Where the environment fosters a high quality of social interaction, organisational culture and the values of diversity and inclusion, the quality of education is enhanced. The acuity of obstetrics and gynaecology can lead to an adverse environmental climate to creep in. Several validated inventories have been developed in other medical specialties but there is currently no validated inventory specific to obstetrics and gynaecology.

Summary of Work: A detailed literature search was conducted to evaluate and analyse the methodologies of similar studies including inventories for surgical and anaesthetic training, and undergraduate and postgraduate medical students. A methodology was developed which included four phases. Phase 1: the literature-informed preliminary questionnaire was rated for relevance by 58 educationists from one Deanery. Phase 2: semi-structured interviews, informed by phase 1, were done with twelve trainees in O&G. The resulting questionnaire (37 questions with Likert responses) was rated by 50 medical educators online. The finalised survey was delivered online to 150 trainees in the same Deanery. The results were analysed on Excel and Cronbachs alpha was calculated for each section and for the entire questionnaire.

Summary of Results: The results suggested that the final inventory was reliable in measuring educational environment and the Cronbachs alpha for the entire questionnaire was 0.96. The questionnaire was acceptable to stakeholders.

Discussion and Conclusions: We developed an inventory tailored to O&G. Phase 2 was particularly important as detailed analysis and coding were performed to develop themes, helping to refine the inventory. Phase 3 strengthened the modified Delphi as Phase 1 did not yield an adequate response. Several aspects such as physical wellbeing, resilience, bullying and undermining had not been included in earlier inventories. These areas in training need to be recognised early in order nurture an environment that underpins positive values and encourages training doctors to grow into sound future clinicians.

Take-home Messages: The OGEEM has good validity and reliability, and should be used in measuring educational environment specific to O&G training. Also inventories in other areas should be revised to include additional aspects highlighted by our study such as resilience and undermining.
# SCOD4.5.10 The private healthcare context as an environment for learning (8101)

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**ABSTRACT:**

**Background:** Understanding the environment in which students learn is necessary for the development and implementation of curricula. In the context of HPE, learning can take place across different environments and the call to scale up the number of healthcare professionals has seen an increase of training outside traditional public academic hospitals. In South Africa, private healthcare organizations have become key role-players in nurse education. Inquiry as to how this environment influences student learning is limited. This study, therefore, sought to explore the private healthcare context as an environment for learning.

**Summary of Work:** A qualitative methodology within an interpretivist paradigm was used, drawing on organisational and situativity theory, respectively. Data were collected in several ways, including document analysis (26), observations (6), focus group discussions (5), and interviews (12). A three-tiered analytical approach that involved summarising and packaging data, repackaging and aggregating data, and identifying explanations through an explanatory framework, was followed.

**Summary of Results:** The findings highlight several key issues: that the private healthcare environment is characterised by competing priorities that give rise to tensions; that contextual variations require training sites to be flexible; that the organization comprises of sub-systems of culture that generate high levels of complexity; that the multiple roles held by individuals create conflict; and that the hierarchical organization structure directly influences interactions between students and the learning environment.

**Discussion and Conclusions:** This study is important for providing insight into what the current private healthcare environment has to offer the teaching and learning of healthcare professionals. Evident from this work is that the learning environment resides within a particular system made up of various interrelated factors which are often in tension with one another. Those responsible for curriculum development and implementation should take cognizance of how a change in one aspect of the environment could influence another - thus a more holistic perspective is needed.

**Take-home Messages:** The learning environment in a private healthcare context is highly complex, requiring flexibility and agility on the part of managers, curriculum developers and educators as they, together with their students, look to enable an environment where a culture of learning will be fostered.
Simulated Learning in Rural Community Environment: Pushing the boundary (9259)

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ABSTRACT:
Background: Simulation-based education (SBE) is of proven worth in hospitals but what about community settings? Most hospitals look and feel very similar, even internationally there is convergence on hospital appearance and functioning, philosophically underpinned by the universally accepted medical model of care. However, there is no template for community learning spaces, as models of community care are very much culturally bound, and locally determined by issues such as multi-generational living, affluence, and poverty. Within Pakistan, extremes of wealth and poverty mean that vast differences in community environments exist. In order to implement SBE in pursuit of preparing healthcare professionals to work in rural communities, The Aga Khan University, Centre for Innovation in Medical Education (AKU, CiME), recreated a simulated village area within its modern centre.

Summary of Work: Within the centre an outdoor space surrounded by trees was identified to create a realistic rural environment. To improve fidelity and realism, culturally appropriate resources and household equipment were gathered. The Centre’s technology was adapted to assist in execution of simulated practice and debriefing. This setup was special because it could be easily be adjusted and stored to allow for weather, and for the space to be used for other purposes.

Summary of Results: This setup has been utilized to train undergraduate nurses to negotiate with community stakeholders to confront cultural health beliefs and to prioritize local health-related issues. Similarly, scenarios such as birthing in a village home, adult and pediatric health challenges and natural disasters can be simulated. It can also be utilized to desensitize urban healthcare professionals to the challenges of the extreme living conditions of economically challenged rural citizens.

Discussion and Conclusions: As there were no previous examples for a simulated rural community setup to benchmark against, the original thinking behind this innovative approach, has opened a number of opportunities for healthcare educators to explore ways to enhance SBE in rural settings.

Take-home Messages: Simulation centres can learn from this example to illustrate that, as healthcare inexorably trends away from hospitals and more towards a community base, with imagination and ingenuity, learners can continue to benefit from SBE, by practicing within cultural, high-fidelity contexts of community care.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.12 Community Action Projects: A journey to designing effective community-engaged quality improvement (8693)

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**ABSTRACT:**

**Background:** Quality improvement (QI) has a critical role in healthcare delivery and therefore is an essential skill for medical students to acquire. However, there is little understanding of the best educational methods to do this.

**Summary of Work:** The aim of this study was to compare two iterations of a Community Action Project (CAP) which taught QI skills to third-year medical students (2019-2020) to determine how the format and focus of the two QI approaches led to specific student experiences, impact and learning outcomes. The CAP(a) first ran in person, based within primary care and CAP(b) ran remotely, collaborating directly with voluntary sector organisations at the start of the COVID pandemic. Semi-structured interviews were conducted with the two cohorts of students (n=15). Transcriptions were independently coded by two researchers and analyzed through thematic analysis.

**Summary of Results:** CAP(a) was student-led and focused on raising awareness of local health issues such as overcoming social isolation and improving the uptake of primary care services. In CAP(b), students co-created with community partner organisations projects to support community health during lockdown to meet important local priorities. Analysis of facilitating factors and challenges within both CAPs identified several key elements to successful learning: working on projects genuinely valued by students, students capacity to commit time and resources, the importance of having supportive community partnerships, and ensuring both project impact and sustainability. In addition, co-creation with community partners on prioritised projects, led the CAP(b) students to feel more empowered and increased their motivation for asset-based community development.

**Discussion and Conclusions:** Both CAP formats promote student learning about the value of engaging communities in QI. However, in CAP(b) there was greater evidence of transformative learning for students, highlighting the benefits of moving from a community-based to a co-creation community engaged educational approach.

**Take-home Messages:** The study provides valuable insights into the design of community-engaged QI projects, which enable students to learn new important skills whilst working on projects which are personally meaningful and have a sustainable impact on local communities.
ABSTRACT:

Background: Accreditation, as a formal quality assurance tool, is directly improving medical education by holding medical schools accountable towards standards. The International Federation of Medical Students Associations, representing more than 1.3 million medical students worldwide, selected Health Workforce Regulation and Accreditation as its Global Priority for 2020/2021, an area of focus to address and develop resources for meaningful student engagement in the accreditation process.

Summary of Work: The Standing Committee on Medical Education (SCOME) created a Small Working Group, which main focus is to develop a set of resources to capacitate medical students on meaningful participation in the accreditation process and to define models of meaningful students engagement in it. At the same time, the SCOME International Team works on development of the annual Accreditation and Quality Assurance Week campaign. Both projects are done with the collaboration and support from the World Federation for Medical Education (WFME).

Summary of Results: A set of key competencies will be developed and included in the toolkit and further used to develop a workshop. The campaigns impact will be assessed through Online Meetings and a Social Metrics Map with our members, after its promotion in April. On another note, the toolkit will be promoted via webinars, and its impact will be assessed through Online Meetings and assessment form. All results will be completed in July and presented at AMEE2021.

Discussion and Conclusions: There is no universal model of meaningful students engagement in accreditation since there are a lot of variables. From regulation, administration, institutional support and flexibility of medical education systems, medical students need to continuously advocate for meaningful engagement in the process of formal accreditation and to be considered as an active stakeholder in this process at all levels.

Take-home Messages: The current status quo of student engagement in accreditation is still insufficient, either because of weak policies to engage students in the process or from a lack of interest from the student body. Raising knowledge, skills and attitudes through capacity building is one of the ways to improve it, and subsequently a way to improve the quality of medical education worldwide.
#SCOD4.5: SCOD - Curriculum - General

**# SCOD4.5.14 Medical teachers’ and students’ experiences of medical school accreditation (9531)**

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**ABSTRACT:**

**Background:** Many medical education institutions around the world review and evaluate their programmes by a process of accreditation with the aim of providing high quality education towards safe and competent healthcare professionals. This makes evaluating accreditation in the realm of medical education very topical.

**Summary of Work:** This systematic review aimed to evaluate the experiences of teachers and students of quality assurance and accreditation in basic medical education. A meta-ethnography methodology was adopted for this study for the synthesis of qualitative evidence originally developed by Noblit and Hare (1988) for educational research. A systematic review process was followed based on PRISMA guidance (Liberati et al. 2009). 19 articles met our inclusion criteria and achieved over 70% on CASP scoring (CASP 2020).

**Summary of Results:** 17 second-order constructs were extracted from 19 articles, which were evaluated and formulated into four third-order constructs. Our synthesis demonstrated divergent views on the value of accreditation in medical schools from students and staff, with both positive and negative impacts on medical education programmes and stakeholders.

**Discussion and Conclusions:** We found some similarities of our findings to existing qualitative research recently published, including diminished value of student input to quality assurance (Blouin 2019), variation in accreditation systems globally resulting in misalignment of standards to institutions and contributing to variation in graduate workforce quality (Tackett et al. 2019; Frank et al. 2020), the importance of transparency in the accreditation process (Javidan et al. 2020), and time and effort being the highest costs (Muhtadi 2013). Other findings painted a bigger picture of areas within the accreditation process that require further attention to improve stakeholder engagement and towards maximising positive consequences.

**Take-home Messages:** Some take home messages from this research includes the need for greater transparency about the purpose and value of accreditation, greater acknowledgement of the obstacles and limitations to student involvement in the accreditation process, the need to evaluate the short and long term impacts of accreditation on institutions, teachers, students and patients, and the need for further research on the credibility of accreditation standards and assessors.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.15 Building student-led holistic approach towards Social Accountability (9216)

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**ABSTRACT:**

**Background:** Throughout past years, the International Federation of Medical Students Associations (IFMSA) has been working on Social Accountability in medical schools. The Standing Committee on Medical Education (SCOME) took the lead in Meaningful Students Engagement towards a Socially Accountable Medical Education. However, some pieces of the puzzle were still missing for a perfect image; building comprehensive action plans towards achieving the aforementioned goal requires a multidisciplinary approach. By working on Medical Education, Public Health, Human Rights and Peace, Sexual and Reproductive Health and Rights, Professional, Research exchanges and capacitating its members, IFMSA ensures a collaboration in order to engage students in addressing the priority health needs of communities.

**Summary of Work:** A thorough analysis of IFMSAs Standing Committees work has been conducted, defining focus areas, which are shielded under the umbrella of Social Accountability. On this note, a detailed research of the IFMSA Program Database (database of enrolled activities of IFMSA National Member Organisations - NMOs) was done, defining multiple student-led activities from 130 countries around the world, which fall under the aspect of previously mentioned focus areas.

**Summary of Results:** 20 focus areas were identified from Medical Education, Public Health, Human Rights and Sexual and Reproductive Health and Rights aspects, with more than 30 activities worldwide, capacitating more than 1500 medical students globally. A re-assessment of the impact of these activities is planned to be done in the period of April - May, to identify all IFMSAs activities and the outreach they have. All results will be presented at AMEE2021.

**Discussion and Conclusions:** Social Accountability requires a lot of dedication, engaging all relevant stakeholders. Medical students, having high-interest, but low-power, need to be re-evaluated as full-fledged partners in shaping it from medical education to health systems. A lot of efforts are needed, from capacitating them to developing engagement-related competencies, to implementing student-led activities from a holistic multi-sectoral perspective, to collaborating with external partners and creating a network focused on delivering to the communities.

**Take-home Messages:** Collaboration is the essence of implementing actions related to Social Accountability of medical schools, and it takes a village to echo and strengthen the voice of medical students as advocates for its implementation.
Background: In 1995, Social Accountability (SA) was defined as the willingness and ability to adjust to the needs of patients and healthcare systems. Since then, in order to implement SA, both educators and medical students took responsibilities. In 2017, The International Federation of Medical Students Association (IFMSA) published a toolkit that guides medical students to take the lead on implementing SA measures in their local communities. To understand students perception about SA of their school, we questioned medical students of Gazi University by using the assessment survey from IFMSA Students Toolkit.

Summary of Work: Medical students from all grades (1-6) participated (n=494) in the study. The data collected through Google Forms with an online-survey consisting of 12 questions to be rated from 0-3 (0:No, 1:Somewhat, 2:Good, 3:Excellent). Students between 1st-4th grade (n=274, Group-1) had limited exposure to the clinical environment due to distance education caused by pandemic, 5th-6th grade students (n=220, Group-2) had completed several clerkships in previous years. We calculated overall and question-based mean scores and also analyzed the mean score difference between Group-1 and Group-2 by conducting Independent-Samples T-Test.

Summary of Results: Between 0-36, the overall mean score given to the school was 19.01±6.01. Does your school encourage you to undertake generalist specialties? had the lowest score (0.77±0.88), Does your school have a positive impact on the community? had the highest score (1.98±0.73). While the overall mean score from Group-2 was 18.38±5.71; Group-1 was 19.52±6.20, and the difference was statistically significant (p<0.05).

Discussion and Conclusions: According to these results, SA in Gazi University is classified as well but not strong, supporting that the school has some strategies working well along with weaknesses. For this level, Toolkit recommends students to look for areas of weakness and ways to advocate to improve SA by raising awareness and building capacity. Starting from the weakest, first area to focus would be consistent encouragement to work in rural areas.

Take-home Messages: Both for educators and students to assess their schools SA level, there is an accountable toolkit available. Even though the general overview of the school has a positive impact on the community, faculty members should encourage their students to work in rural areas.
#SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.17 Pandemic pandemonium and Primary Care Networks - experiences of establishing primary care placements in a new medical school (9524)

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**ABSTRACT:**

**Background:** In 2018 five new medical schools were announced to support the expansion of the workforce. The Kent and Medway programme features early clinical placements in the community. These start in year one, structured as immersion weeks in Primary Care Networks. The KMMS school opened in September 2020 in the midst of the COVID-19 pandemic with all of its attendant challenges. We report on the challenges of selecting and establishing the placements in the newly established primary care networks (PCN). These offer a unique opportunity for medical students to learn about the provision of proactive personalised and co-ordinated multidisciplinary care at an early and formative stage in their careers. Over the course of the first year, multiple adjustments to the learning format were required including a move to blended learning.

**Summary of Work:** Initial challenges included agreeing selection criteria for the PCNs before attending to the legal complexities of contracting and negotiating a service level agreement with the networks, addressing the needs of all stakeholders. Faculty development was conducted remotely. Challenges of the immersion weeks included compromises associated with lockdown restrictions, limited movement across organisations, social distancing and shielding students. Over the course of the immersion weeks, we moved to a blended format, navigating the challenges of recorded assessment presentations.

**Summary of Results:** We will present a logic model evaluation of this first year of placements. This summarises the resources required, activities (aspects of implementation) as well as the outcomes. These are considered from the perspective of the school, the GP faculty and students.

**Discussion and Conclusions:** Innovation in establishing a new medical school brings a unique set of challenges to negotiate. PCNs are contractual collaborations between practices (not legal entities), presenting a challenge for both contracting and quality evaluation. COVID-19 constraints compounded the complexities but offered a unique opportunity to observe multidisciplinary, cross organisation work at first hand in the delivery of the COVID vaccination programme. This balanced the change to a blended learning format.

**Take-home Messages:** Flexibility is a key factor in the successful implementation of a new medical school programme involving a range of stakeholders, particularly during a pandemic.
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ABSTRACT:
Background: To address the health needs of the underserved community in St. Maarten, the American University of the Caribbean (AUC) Public Health Platform conducted research to evaluate risk factors in St Maarten residents with type 2 Diabetes Mellitus. In addition to obtaining data for the study, which would ultimately be used by the Ministry of Health (MOH), the project also served as an important educational tool.

Summary of Work: Data was collected during an event organized with MOH at a local nursing home. During the event, medical students participated in obtaining patient consent, administering health questionnaires, measuring blood pressure, blood glucose, height, weight and cholesterol, calculating body mass index (BMI) and performing a physical exam. The physical included a neurological and fundoscopic exam, peripheral vascular exam, and diabetic foot screening. Students were assisted by fellows (graduated physicians in training) and the event was overseen by licensed AUC clinical faculty. Students presented patient cases to AUC faculty physicians, and then communicated health information to patients.

Summary of Results: This project was an excellent educational experience for all involved. Fellows gained experience in conducting medical research and teaching students. Pre-clinical medical students reported that they enjoyed their first opportunity to practice on real patients, and that the experience helped them hone both their physical exam and history taking skills. They gained valuable experience communicating clinical information to both attending physicians and patients. Additionally, the study provided education for the local community, as learners from the medical school became educators to individual patients.

Discussion and Conclusions: AUC has identified community-based research as an invaluable tool for medical education, through which fellows and medical students serve as both learners and educators. We highly recommend involving medical students and post-graduate trainees in research involving clinical encounters and patient education.

Take-home Messages: Clinical research participation is an excellent opportunity for medical students to hone their clinical communication, physical examination, and patient education skills.
SCOD4.5: SCOD - Curriculum - General

SCOD4.5.19 Pivoting for COVID-19: An evaluation of virtual residency accreditation reviews (9458)

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ABSTRACT:
Background: Worldwide, medical education pivoted and adjusted to maintain core functions during the COVID-19 pandemic, accreditation included. Accrediting bodies faced challenging questions regarding deferral, cancellations, or proceeding with reviews in new and untested ways. The Royal College of Physicians and Surgeons of Canada piloted a virtual accreditation review process for single-day external reviews of Canadian residency programs. This process was thoroughly evaluated to determine comparability to an in-person accreditation review in terms of feasibility, effectiveness, and maintenance of rigour.

Summary of Work: Virtual accreditation reviews were conducted using video technology for eight programs within two institutions in Canada. A 20-question survey was developed to evaluate the virtual review process and experience for postgraduate office staff, program directors, residents, faculty, and surveyors. Eighty stakeholders participated in the survey. Categorical data were summarized using frequencies.

Summary of Results: Stakeholders reported high levels of feasibility (91-99% endorsement) for the virtual accreditation review regarding preparation, satisfaction with the process, and functional technology. Stakeholders perceived the virtual reviews as effective (82-89% endorsement) for various aspects of discussions and interviews. Although 53% of surveyors struggled with reading body language in a virtual environment, the majority (89%) noted that they were satisfied with the interactions and communications with stakeholders. Seventy-one percent of stakeholders reported that the virtual review had the same level of rigour as an onsite review, with the majority of surveyors (89%) reporting that they were able to acquire a comprehensive understanding of the program.

Discussion and Conclusions: Our pilot study demonstrated that single-day accreditation reviews can effectively shift to the virtual environment without losing the rigour and integrity of an in-person accreditation review. Improvements were made iteratively to the review process and logistics, including adding additional wellness breaks for surveyors to reduce zoom fatigue. The results of this pilot informed the larger-scale virtual accreditation reviews conducted by the Royal College and its partners in late 2020 and early 2021.

Take-home Messages: With adequate planning and adaptation, virtual accreditation reviews are an effective substitute for in-person accreditation reviews, particularly during the COVID-19 pandemic. The Canadian experience can serve as a possible model for virtual accreditation reviews by other health professions education accreditation organizations worldwide.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.20 Conception, development and remote delivery of a novel cross-faculty exploratory module: Personalised Medicine - Hope or Hype, embedding critical thinking through multidisciplinary learning (8899)

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ABSTRACT:
Background: Imperials LT Strategy aims to prepare students to tackle real-world problems. Following recent curriculum-review, all undergraduate programmes created white space for exploratory cross-disciplinary learning. College invited proposals for design/development of innovative STEMM modules to embed critical-thinking, multidisciplinary team-working and identity-formation, to be offered to students from any primary-discipline.

Summary of Work: The concept of Personalised Medicine- that patients can be stratified based on clinical/genetic-profiles and diseases prevented/managed/treated differentially depending on individual-needs/conditions, is not only exciting for medical students but everyone across the college. Personalised medicine is a priority topic within Imperials Academic Strategy. Therefore, this 5-ECTS, level-6, 10-week module was conceived, whereby, personalised medicine is tactically employed as a springboard to develop reflective-/critical-thinking by showcasing and debating the frontiers and controversies of the field, if it indeed represents Hope/Hype.

Summary of Results: The module features scenario-based learning via 3 medically-representative and culturally-inclusive characters/avatars, that crisscross all sessions, linking core-concepts with personal-predispositions/questions as applicable to personalised medicine. The reflective-questions posed by avatars engages/prompts students to think/analyse critically, the varied-perspectives. Discussion of articles representing hopes/hypes of the field forces students to dissect problems through different stakeholder-lens, debunk fake-narratives, and empower them to make critical-decisions to become intelligent/vigilant consumers of personalised medicine. A spiral curriculum using only Breast-cancer and Diabetes as examples across all sessions, ensured manageable cognitive-load for non-disciplinary students. Blended-learning was employed, with students exploring pre-session materials asynchronously and working in permanent engineered cross-disciplinary teams during the synchronous sessions to solve clinically-relevant problems. 3 PhD-students worked as partners to select appropriate content to enable inclusivity/engagement from all student-backgrounds.

Discussion and Conclusions: It was challenging to convince some academics, the value of cross-faculty modules. Staff confidence was an issue, as structuring teaching using restrictive examples, for different audiences, meant stretching beyond their comfort-zone. Pivoting online posed further complexities, both technical and staff-development. While some academics were quicker and enthusiastic in embracing this unique module, others were resistant. Students/external-examiners appreciated, whilst detailed research is underway to evaluate impact of module on student multidisciplinary STEMM identity-formation.

Take-home Messages: The pandemic has convinced why our graduates must be trained to tackle real-world problems. Exploration of learning outside disciplinary curriculum is first step towards achieving this goal.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.21 Exploring the effect of students’ experience in conducting Problem Based Learning (PBL) tutorials on group productivity (9298)

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**ABSTRACT:**

**Background:** Group productivity in Problem Based Learning (PBL) tutorial has a significant role to assist students in achieving learning objectives. Group productivity is influenced by many factors. This study was aimed to identify whether students experience in conducting tutorials impact on tutorial productivity.

**Summary of Work:** The study was a cross-sectional study using a quantitative approach. The subjects were students at first (n=138) and third-year (n=125). The students completed the Tutorial Group Effectiveness Inventory (TGEI) after finishing all of the tutorial process in the third course in their year. The inventory consists of 20 items using a Likert scale that are divided into three sub-scales: Cognitive, motivational and de-motivational aspects. Data were then analyzed using Man Whitney test to compare the means of TGEI score among two groups.

**Summary of Results:** The mean of group effectiveness score among the two groups is significantly different (p< 0.05). The score of group effectiveness in the first year is higher than third-year students. The mean of motivation and de-motivational aspects are also better in first-year student even though this score did not significantly differ with the third-year students. On the other hand, the mean of cognitive aspects was higher in third-year students rather than the compared group (p>0.05).

**Discussion and Conclusions:** The productivity of the tutorial group was not affected by the students familiarity with PBL tutorials. It was directed by the level of students cognitive and motivational aspect. The results showed that first-year students had a more productive group. Their learning motivation is better than the third-year group. On the other side, third-year student students had better cognitive aspect. Even though not significantly differ with the first-year student, the process of construction knowledge in the third year seemed better than the first year.

**Take-home Messages:** Students motivation to conduct tutorial should be maintained in all year to increase the quality of tutorial group productivity.
#SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.22 SLPTP model to improve integration in Infection and Immunity Course (9723)

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ABSTRACT:
Background: The students will learn Microbiology, Immunology, antibiotics, infectious diseases in the Infection and Immunity course. But traditionally, the students learn these disciplines separately. It is difficult for them to integrate and apply the knowledge. The aim of this study is to build an learning model to help the students to integrate the basic science and to apply them to the clinical situation.

Summary of Work: We designed a SLPTP learning model to help the students to learn the infectious diseases. The learning was triggered by a clinical case. The students need to answer three basic questions: what, why and how? What is the disease? Why did the patient become infected? How do we treat patient and protect others? They learn to use SLPTP model to integrate the basic knowledge to answer all these questions. To answer the first question, the students need to know the clinical clue, the history, the symptoms and signs (S), then give a preliminary diagnosis. And then they need to figure out the lab test (L) to confirm our diagnosis. To answer the second question, they need to integrate the microbiology, immunology and pathology of infectious diseases to explain the pathogenicity of the diseases (P). And the last question, they should discuss about how to treat (T) the patient and how to prevent (P) the disease. To answer these questions, students will integrate pharmacology and immunology.

Summary of Results: SLPTP learning model was introduced to the year 2 medical students in Shantou University Medical College (n=386). A questionnaire was used to collect the feedback at the end of the course. 89% of the students were satisfied with this model. They gave very positive feedback as: Very interesting; Basic science combined with case makes the knowledge visualized; The case can help us to learn and memorize the pathogens.; Very clear; I like the case-based learning style; et al.

Discussion and Conclusions: The students like the SLPTP model. They think the model can help their learning and help them to apply the basic science to the clinical situation.

Take-home Messages: The SLPTP model can improve integration of the knowledge of different disciplines in the Infection and Immunity Course.
ABSTRACT:
Background: The MUSIC Model of Academic Motivation developed by Brett Jones, posits five factors of academic motivation: empowerment, usefulness, success, interest, and caring. Previous work to validate the inventory with medical students noted cross-loading of three items measuring interest onto usefulness. This study was designed to explore medical student conceptualisations of usefulness and interest as measured by the MUSIC Inventory. We hypothesized that students would be more likely to use language related to usefulness rather than interest when discussing the items measuring interest, and that they would also use usefulness language for the items measuring usefulness.

Summary of Work: Sixteen students across two campuses were recruited for an approximately 30-minute interview each. Think-aloud technique was used to elicit students thought processes as they read and described their interpretation of the 11 MUSIC Inventory items for interest (six items) and usefulness (five items). Interviews were transcribed by one of the co-authors and transcriptions were analysed using a general inductive approach.

Summary of Results: Students were more likely to use language related to usefulness for both the usefulness questions and for the interest questions. Of note was students focus on future application when thinking aloud about the items related to the useful factor of the MUSIC model. While students consistently discussed coursework in terms of all forms of assignments, whether clinically or classroom based; they tended to talk about instructional methods from a predominantly classroom-based context.

Discussion and Conclusions: Students thought processes with regard to the concepts of usefulness and interest are more complex than the MUSIC Inventory items would indicate, showing a strong interaction that appears to be context specific. Related to this were indications that a student’s motivation to learn in the face of content they perceive as uninteresting is heavily influenced by its perceived usefulness, particularly its future utility.

Take-home Messages: Medical students may be more interested in teaching and learning that can be explicitly linked to future usefulness in their careers. When designing learning opportunities, teachers should consider contextualising the learning within a broader framework of practical usefulness in the clinical environment.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.24 Never too late to develop interest - A cross-sectional study of changes in medical students’ research interest after scholarly projects (7819)

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ABSTRACT:
Background: Most medical schools offer or require students to participate in research activities. Previous research shows a clear correlation between medical school research engagement and later engagement in research. The purpose of this study was to assess the development of medical students general interest in research during the following years.

Summary of Work: This is a prospective cross-sectional study carried out among students attending an individual mandatory research project course (20 weeks; 30 ECTS credits; semester 8) between 2010 and 2012. The data were collected from a questionnaire distributed 2 years after the course. Totally, 392 of 581 students (60% females; mean age 27 yrs) returned the questionnaire, corresponding to a response rate of 67%.

Summary of Results: 51% of the students reported that their interest in research increased during the project work, 31% reported decreased, and 18% reported unchanged interest. During the period from the end of the course to follow-up, interest in research increased among 49%, decreased among 14% and remained unchanged among 37% of the students. The distribution of responses from the four semesters varied marginally. The majority of the students carried out a project in a clinical environment (n = 235; 60%) while the rest of the projects were classified as pre-clinical (n = 105; 27%), or as other, e.g. register studies or medical education projects (n = 52; 13%). We did not find any substantial differences between male and female students interest but the younger students were less interested than the older ones.

Discussion and Conclusions: Medical students’ research projects have the potential to increase students interest in the short term or strengthen pre-existing interest in research, although the impact of the latter remains to be studied. While there was no gender difference, age was a factor and the results indicate a need to attract more young doctors to clinical research.

Take-home Messages: Medical students have a considerable and evolvable research interest that is promising for the future development of clinical medicine as well as medical research.
#SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.25 Changes in geriatric education at Japanese medical schools over the last 15 years. (9667)

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ABSTRACT:
Background: Since elderly people represent over 28% of Japan's population, which is the highest in the world, it is essential to have a medical education system capable of producing physicians competent in the care of elderly people.

Summary of Work: As members of the Japan Geriatrics Society, we conducted national surveys in 2005 and 2015 to identify problems in the geriatric education at medical schools. We repeated the survey in 2020 to evaluate changes. We sent questionnaires to all medical schools in Japan (n=82) and received the answers from 60 medical schools.

Summary of Results: The number of medical schools which had geriatric departments (or divisions) (group A) decreased (30%, 21% and 23% in 2005, 2015 and 2020, respectively). Whereas the number of medical schools where a single department other than geriatric department such as neurology took care of geriatric education (group B) increased (11%, 14% and 18% in 2005, 2015 and 2020, respectively). In the rest, various departments including departments of medical education and/or general medicine taught subjects related to geriatrics (group C). Important geriatric contents such as comprehensive geriatric assessment (CGA), geriatric syndrome, frailty and changes in pharmacokinetics with aging were better taught in group A, whereas off-campus training such as home visits, visits to nursing homes or palliative care facilities by lower-grade students were more frequent in group B and C (54% in group A, 83% in group B+C).

Discussion and Conclusions: Although medical schools in group A gave better education in geriatric contents, the number of schools in group A decreased. In Group B and C schools, where department of medical education and/or general medicine often plays important role in geriatric education, students spend more time at off-campus training without enough geriatric knowledge. To improve geriatric education in the present circumstances, medical schools need geriatric departments or geriatric programs provided by geriatricians which can provide geriatric knowledge for students to learn effectively during off-campus training.

Take-home Messages: To improve geriatric education in Japan, medical schools need geriatric departments or geriatric programs provided by geriatricians which can provide geriatric knowledge for students to learn effectively during off-campus training.
# SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.26 Attitudes and perceptions of medical students toward spirituality and palliative care in their psychiatry training (7878)

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ABSTRACT:

Background: There is increasing awareness of the relevance of spirituality in mental health conditions but formal training in spiritual care remained limited. This study aimed to explore our 4th year medical students attitudes and perceptions toward spirituality and psychiatry during their six weeks of psychiatry training. This will help us better understand the perceived preparedness, previous experiences with death, and desired changes in training in palliative care psychiatry.

Summary of Work: All 4th year medical students posted to psychiatry at the investigators teaching site were invited to participate in a survey adapted from a previous study on Canadian psychiatry residents attitudes toward spirituality. Qualitative comments regarding the meaning of spirituality in their medical training were also captured.

Summary of Results: All 45 students posted to the department participated. 91% agreed that it is appropriate to inquire about spiritual aspects of their patients lives and their incorporation can improve treatment compliance. 80% agreed that spirituality is often cited by patients as related to their ability to cope with psychological distress and are often brought up by patients who are dying. 91% believed that forgiveness is most strongly related to spiritual issues. 80% highlighted insufficient time and lack of knowledge and training to be the barriers to discussing spirituality in psychiatry. Qualitative analysis of the students views about what spirituality meant to them in their medical education generated the following themes: (1) ascribing meaning in what they do; (2) a coping mechanism and (3) helped with patient care.

Discussion and Conclusions: With our ageing population, there is the anticipation of increasing need for palliative care psychiatry services. However, our undergraduate and postgraduate psychiatry teaching does not have palliative and end-of-life care in its core curriculum. Exposure to such learning experiences is unstructured and opportunistic. Most medical students surveyed felt that addressing spiritual issues was an important aspect of psychiatric care and were often brought up by patients who were dying. However, they felt insufficiently trained to discuss spirituality in psychiatry.

Take-home Messages: Our medical students were able to appreciate the importance of addressing spiritual care in psychiatry. Educators need to be equipped in teaching spiritual assessment and spiritual care.
#SCOD4.5: SCOD - Curriculum - General

# SCOD4.5.27 Student initiative on sustainable healthcare in the undergraduate medical curriculum (9742)

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**ABSTRACT:**

**Background:** Our objective was to create and evaluate a webinar on planetary health and sustainable healthcare to be featured in our core medical school curriculum. Medical students are becoming increasingly aware of the unsustainable carbon and ecological footprint of the health systems in which we work. Acknowledging the contribution of health systems to the climate and ecological emergency in medical education is essential to empowering the next generation of doctors to enact change.

**Summary of Work:** We gathered qualitative student feedback through a structured online questionnaire. The webinar included an overview of the topics, followed by an exploration of actionable steps for how we can integrate the principles of sustainable healthcare into future practice. As two medical students, we authored the presentation in collaboration with experienced colleagues working in sustainable healthcare and pitched the content to faculty members.

**Summary of Results:** Student feedback suggested the webinar successfully conveyed the key principles of sustainable healthcare, especially when outlining the roles that individuals have to play and the importance of action from larger organisations. It also highlighted that specific examples were useful to help translate abstract definitions into clearer terms. Students enjoyed learning about personal changes they could make, such as carbon offsetting their electives and integrating sustainability outcomes into quality improvement projects. A student commented that it made them reflect on their elective choices.

**Discussion and Conclusions:** Feedback highlighted that students were keen to engage with this important topic, furthering the argument for making sustainable healthcare a cross-cutting theme across all medical school curricula. Looking to the future, we advocate for the inclusion of such content earlier in the curriculum, expanded across all medical schools and integrated as a core theme throughout medical education. These steps will encourage the next generation of doctors to lead the innovative solutions required to realise sustainability in healthcare.

**Take-home Messages:** Students and faculty were receptive to the inclusion of curriculum content related to sustainable healthcare, recognising the importance of the topic. Going further to make this a cross-cutting theme in medical education will be instrumental to cultivating change.
The Process of Developing a Reporting Checklist for Curricular Innovations (9021)

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ABSTRACT:
Background: Reporting guidelines help authors write more complete manuscripts that align with best practices for research conduct; classic examples include PRISMA for systematic reviews and CONSORT for randomized controlled trials. The development of reporting guidelines is a multistep process with various options available for building a validity argument.

Summary of Work: We created a reporting checklist for curricular innovations called DOCTRINE (Development Of a Checklist To Report INnovations in Education). We reviewed the literature for published approaches to developing reporting checklists, including Mohers strategy, and for relevant frameworks and tools. We compiled a checklist, conducted a modified Delphi Study, piloted the checklist, and completed cognitive pre-testing. We calculated interrater reliability using percent agreement. We collected validity evidence by real-life checklist application in a sample of authors submitting to a medical education journal.

Summary of Results: The literature revealed 14 papers on frameworks that informed the creation of our checklist. We prioritized simplicity, clarity, and action orientation when drafting our checklist. The modified Delphi process achieved 88% consensus on items in round 1 and 86% in round 2. After the piloting and cognitive pretesting, we finalized the phrasing. The resulting checklist had 19 items divided into 5 sections - introduction, curriculum development, curriculum implementation, results, and discussion. Our validation approach involved using the checklist on 108 manuscripts, for which a third of authors had received the checklist. We found higher percentages of missed elements in the results and discussion sections and that higher DOCTRINE total scores were predictive of eventual acceptance.

Discussion and Conclusions: We created a reporting checklist for medical education journal manuscripts, using systematic approaches to build consensus, revise content and terminology, and collect evidence to support a comprehensive validity argument. Lessons learned included being patient with the process of iterative refinement, the elusive goal of unambiguous language, and becoming familiar with the multitude of sources available for validity evidence.

Take-home Messages: The development of a curriculum reporting checklist can be achieved through a systematic process to provide clarity and structure to reporting manuscripts focused on curricular innovations equal to those used for other research approaches.
# SCOD4.5.29 The influence of research engagement on medical students' research interest: Evidence from China (9672)

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ABSTRACT:
Background: Previous studies have shown students believed research experience could help them acquire knowledge and skills such as professional knowledge, critical thinking, teamwork skills, academic writing skills and presentation skills. Furthermore, a few studies have indicated exposure to research at university might be related to medical students interest in research. However, much less is known about medical students research engagement in China and whether research experiences have a positive effect on their interest in terms of research. The aim of this study is to examine the cause effect between their research engagement and research interest.

Summary of Work: This study obtained data from a national survey aimed at undergraduate students and employed the multiple linear regression and IV-2SLS method to explore the influence of research engagement on research interest. Whether medical schools have been accredited by the accreditation institution as the instrumental variables was taken into consideration.

Summary of Results: 152645 completed the questionnaire and the overall response rate is 84.6%. Then, the data were resampled according to the research purpose and the number of the study population was 55403. Description statistics 77.95% of those surveyed did not have any research experience, while 22.05% had ever done research projects (basic research, 12.93%; clinical research, 6.92%; humanities and social sciences research, 2.2%). Regarding research interest, over half of the students were not sure whether they have research interests and just 24.76% were interested in research. The influence of research engagement on research interest Results of the multiple linear regression indicated research engagement was significantly positively related to medical students interest in research, while the IV-2SLS analysis did not show any significant difference between them. Interestingly, the obvious heterogeneity was among sub-groups of degree programs and academic performance. Specifically, students who attended the long-term programs and who ranked the top 25% were more likely to benefit from research engagement.

Discussion and Conclusions: This study found research interest might be enhanced only for those top 25% of students and those attending long-term programs by engaging in research projects.
Take-home Messages: Only for students having good academic performance, research interest might be related to research engagement.
ABSTRACT:
Background: Racial health inequities, social determinants of health, and the negative impact of physician implicit bias on health outcomes are imperative to medical school curricula. The double pandemics of Covid-19 and Racism have made plain the gross inequities that persist in our society and more narrowly, our healthcare system. As a step in aligning their medical education with the need for a deeper understanding of the impact of racism, students brought the Anti-Racism Reading Program to one Caribbean medical school in the summer of 2020. The program was developed and adapted by a group of 3 faculty and 2 students and was implemented as a pilot in Fall 2020 with mandatory implementation in the Spring 2021.

Summary of Work: Small group discussions facilitated by one faculty/professional staff member and one M2 student were scheduled for all incoming first semester students. Discussions focused on the book Fatal Invention: How Science, Politics, and Big Business Re-create Race in the Twenty-first Century by Dorothy Roberts. Readings from the book highlight the ways in which society upholds the concept of biological race, and how medicine perpetuates racism.

Summary of Results: In Fall 2020, 28 voluntary small group discussions were held with approximately 132 incoming students. Mandatory implementation in Spring 2021 saw this number rise 36 small group discussions with 223 students. Attendance went from 30% to 95% of the incoming class from Fall to Spring, and participation in the post-discussion survey went from 65% to 90% of incoming students. Facilitators reported they would be extremely likely to facilitate discussion again, and incoming student respondents overwhelmingly endorsed facilitators effectiveness in discussing racism across both the voluntary and mandatory cohorts. Explicit goals of the program were largely met.

Discussion and Conclusions: Small group discussions have shown great promise in motivating students and empowering facilitators to continue important conversations on racism in healthcare. Full results will be discussed along with next steps for action.

Take-home Messages: While provision of knowledge is important in the context of social justice, it is imperative that students be given the opportunity to discuss these topics openly with their peers.
#SCOD5.1: SCOD - Diversity

#SCOD5.1.2 Transgender health content in medical education: A systematic review of current training practices and implementation barriers & facilitators (9156)

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**ABSTRACT:**

**Background:** Health disparities faced by transgender people are partly explained by barriers to trans-inclusive healthcare, which in turn is linked to a lack of transgender health education in medical school curricula. We carried out a systematic review with the aim to (1) provide an overview of key characteristics of training initiatives and pedagogical features, and (2) analyze barriers and facilitators to implementing this training in medical schools.

**Summary of Work:** Following PRISMA guidelines, we performed a systematic review using the PubMed/Ovid MEDLINE database (October 2009 to October 2019). We searched for original studies that reported on transgender content within medical education and residency programs. Search terms included transgender persons, medical education and learning module, among other synonyms and truncations. We performed a thematic analysis to identify training characteristics, pedagogical features, barriers and facilitators.

**Summary of Results:** 19 articles met the criteria for final analysis. Most training consisted of single-session interventions, with a duration range of 1 hour to a half-day. Modes of delivery included lectures, live interviews, small group discussions, role play, clinical rotations, online modules, or a combination. Most interventions were facilitated by instructors with a range of professional experience and covered a range of LGBTQ+-content; however, only eight included transgender-identified instructors and only twelve focused specifically on transgender content. Learning objectives included advocacy, knowledge, and/or clinical skills. Thematic analysis highlighted barriers including lack of educational materials, limited reach of elective modules, time and costs constraints, and challenges in recruiting and compensating transgender guest speakers. Facilitators included scaffolding learning throughout the curriculum, drawing on the expertise of transgender people and engaging learners in skills-based training. Only a few authors explicitly stated which explanatory models of gender identity and development underscored pedagogical decisions.

**Discussion and Conclusions:** Sustainable implementation of transgender health objectives in medical education faces challenges related to lack of faculty expertise, lack of incentive strategies to involve experienced experts, limited reach of elective and mandatory modules, and institutional resistance to dedicate time and resources. Medical schools should facilitate transgender-inclusive educational strategies to combat transgender health inequities.

**Take-home Messages:** Transgender health training initiatives are varied, but their implementation faces persistent institutional obstacles.
#SCOD5.1: SCOD - Diversity

# SCOD5.1.3 Perspectives of UK GP Heads of Teaching on cultural diversity and inclusion in undergraduate primary care: A qualitative study (8122)

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ABSTRACT:
Background: Minoritized groups experience differential outcomes in both health and education, and this is seen across the globe in a variety of contexts. Patients from ethnic minority backgrounds continue to experience poorer health outcomes, highlighted by the COVID-19 pandemic, and differential attainment for minoritized medical students from ethnically diverse backgrounds exists at an undergraduate level and persists throughout postgraduate careers. Medical schools have an instrumental role in addressing some of these disparities, by supporting and embracing diversity and inclusion, to ensure future graduates are able to care for increasingly diverse populations across the world.
Summary of Work: This collaborative qualitative study led by three UK institutions, explores the perspectives of the national group of medical school educational leads across the UK (GP Heads of Teaching) on cultural diversity and inclusion. Whilst acknowledging the importance of taking an intersectional approach to diversity, this study focuses specifically on cultural diversity in terms of race and ethnicity. Five focus groups were conducted (n=23), exploring opportunities and barriers to cultural diversity and inclusion in medical education, and ways to overcome challenges. Data was thematically analysed.
Summary of Results: Themes emerged around student voice, institution and faculty and medical curriculum. Sub-themes included faculty training, faculty diversity, responsiveness, intersectionality, the hidden curriculum and diversifying the curriculum.
Discussion and Conclusions: Medical schools face both opportunities and challenges integrating diversity and inclusion throughout the learning environment, from student recruitment, to curriculum and assessment and wider institutional factors. As a first and critical step institutions need to recognise and acknowledge where the gaps and issues lie and strive to progress forwards with strategic and systemic change. Students are a key stakeholders in this process, and if given agency and empowered, it is their voices and ideas that can catalyse institutions and medical schools to make real sustainable change.
Take-home Messages: Diversity and inclusion in medical schools needs a broad and systemic approach to ensure positive outcomes and sustainable change. Partnership with students and collaboration between institutions builds on experience and sharing of best practice, and will progress forwards the current disparities seen in health and education.
#SCOD5.1: SCOD - Diversity

# SCOD5.1.4 Status Quo of the integration of sex, gender and further diversity categories into medical, nursing and physiotherapy education in Germany (9022)

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ABSTRACT:
Background: To guarantee an adequate quality of health care competencies on sex, gender and further diversity categories in the prevention, diagnosis and therapy of diseases are important. The aim was to analyze how medical faculties and the heads of schools of nursing and physiotherapy evaluate the relevance of sex, gender and further diversity competencies for their work, the extent of curricular integration and the structures responsible for the integration.

Summary of Work: The survey was conducted between January and March 2020. An online questionnaire was developed and sent to all 41 deans of medical schools, to a random sample of 197 (36.7%) heads of schools of nursing and 97 (33.9%) heads of schools of physiotherapy. They were asked on the relevance of diversity aspects for their professional work, the extent of curricular integration and the structures responsible for the integration. Higher education institutions for the two professions were not included in the survey.

Summary of Results: The response rate was 75.6% (n=31; medical schools), 52.5% (n=94; schools of nursing) and 54.6% (n=53, schools of physiotherapy). The integration of diversity aspects was considered as relevant (medical faculties: 96%; nursing: 98% physiotherapy: 100%). A systematic longitudinal integration in all teaching formats including the integration into the assessment could only be achieved by 3.7% of medical schools, 2.4% of schools of nursing and 6.4% of schools of physiotherapy. Responsible for the integration are mainly the faculty teachers for all three professions.

Discussion and Conclusions: Although sex/gender, and further diversity categories are relevant for their future professional work, they are not yet systematically integrated into the curricula of the three health professions. Limitations are that the deans of faculty and the head of schools might not have been aware of the sex and gender aspects being taught by their teachers.

Take-home Messages: For a systematic integration, sex/gender, and further diversity aspects need to be integrated as mandatory teaching and learning content into the national regulations. Furthermore, online courses should be developed for the three professions to train teachers on diversity competencies. For this, support should be provided to the schools for developing diversity-sensitive curricula.
ADDRESSING THE CULTURAL AND COMMUNICATION GAP LEADING TO NOVEL TREATMENT OPTION WITH IMPROVED HEALTHCARE OUTCOME

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ABSTRACT:
Background: Healthcare environments are undergoing rapid change. Healthcare settings have shifted from acute care to encompass a variety of other locations. The healthcare workforce is changing from a common ethnic origin to include a multitude of ethnic and racial groups. By the year 2080, an estimated 51.1% of the population will be composed mostly of Hispanics, followed by African Americans and Asians. This dynamic transformation has created a critical need for healthcare providers to become more knowledgeable and culturally aware to care for and work with people of other cultures.

Summary of Work: We describe a 22 years old female patient who was diagnosed with Tuberous Sclerosis and intractable epilepsy in childhood in Porto Rico. The family moved to the United States largely for the treatment of her seizures and other issues related to her condition. The patient attended high school in the US and was fluent in English. She was able to understand the basics of DBS therapy. After different choices of neurostimulator on options were offered to her, she chose to go ahead with a DBS placement after understanding the risks and benefits; however, she remained reluctant to proceed with the procedure. At this point, we came across one of the students from our Latino Medical Student Association (LMSA) chapter at the Penn State College of Medicine. She helped us understand the cultural issues. Even though the patient was an adult, the decision regarding her medical care was done by the entire family, mainly the mother and the grandmother. Due to COVID restrictions on visitors, we were not able to speak to all of them together. We used a virtual translator service but were not able to address all the issues.

Summary of Results: It took our patient 10 months to go ahead with the treatment option she chose for her epilepsy. The 10 months delay in this case was partly due to COVID pandemic but largely due to the communication gap and our difficulty in understanding the cultural issues. Despite being a level 4 epilepsy center accredited by the national association of epilepsy centers (NAEC), we often come across barriers to offer the same treatment options to our patients who have language or cultural barriers. We realized the importance of getting involved with organizations like LMSA, and explored it further. Our LMSA has at least four students who have completed the interpreter teaching course. They have developed a deep faith in our group, and we could not have achieved this without the help of LMSA.

Discussion and Conclusions: This case made us realize the importance of understanding the health care disparities, respecting the cultural differences and overcoming the language barriers. With the enthusiasm and compassion shown by our students who are members of the LMSA in the future, we may create additional program initiatives designed to implement the strategic plan to strengthen the diversity and cultural competence in different languages.

Take-home Messages: Providing health care goes beyond diagnosing the problem and treating it. It is important to treat the person as a whole, understand their cultural issues and involve all the loved ones in the health care decision if the patients culture follows that pattern.
#SCOD5.1: SCOD - Diversity

# SCOD5.1.6 Representation and diversity of students of health professions education programs - A national retrospective cohort study in times of lottery and selection (8212)

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ABSTRACT:
Background: In many countries, student populations of health professions education (HPE) programs are not representative of the diverse patient population they will serve. This is problematic, because diversity is essential for promoting excellence in health education and care. In the Netherlands, the gradual transition in the admissions procedure from lottery to selection has led to concerns about diversity and unequal opportunities. We investigated whether, during this transition, the representativeness of HPE students compared to their age cohorts and eligible student pools changed; and which variables are associated with becoming an HPE student.

Summary of Work: A retrospective cohort study was done using Central Bureau of Statistics data of 16-year-olds in 2008, 2012 and 2015 (N1=202,837; N2=193,561; N3=204,075), including their gender, parental income percentile, migration background, and number of parents who are a) registered healthcare professionals; b) receiving social welfare; and c) born abroad. Multiple logistic regression was used to examine which of these variables (and interactions) were associated with being a student of Medicine, Pharmacy, Clinical Technology or Dentistry three years later.

Summary of Results: Students who are female, have at least one parent in the top-10 income percentile group, and at least one parent who is a healthcare professional, are overrepresented amongst HPE students. During the gradual transition from lottery to selection, these groups had the highest odds of HPE admission. Relative to the age cohort, having a Turkish, Moroccan, Surinamese or Dutch Caribbean (TMSD) migration background had lower odds, but this changed to higher odds after correction for income.

Discussion and Conclusions: While our age cohorts are highly diverse, eligible student pools for HPE programs and admitted HPE students do not reflect this diversity. Therefore, policy interventions and recruitment efforts are needed to ensure equitable admissions and a representative future medical workforce that can serve the needs of a diverse patient population.

Take-home Messages: HPE student populations are not representative of their age cohorts and the eligible student pool, and several background characteristics such as having parents in the healthcare professions, having a parent with a top-10 income, or being female, strongly increase the odds of becoming an HPE student. Having a TMSD migration background decreases these odds.
#SCOD5.1: SCOD - Diversity

# SCOD5.1.7 Experiences of diversity and inclusion in medical school orientation: A qualitative study (8363)

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ABSTRACT:
Background: While there is increasing effort among medical schools to recruit a diverse student body, there is a paucity of research into the unique experiences of students with diverse backgrounds during their transition to medicine. This study explored how experiences during medical school orientation influence students transition into the medical profession.
Summary of Work: Between April and August of 2019, 16 first-year Canadian medical students completed audio-recorded semi-structured interviews. Interviews explored how issues of diversity and inclusion during orientation affected students transition into medicine and their professional identity development. Interviews were transcribed verbatim and analyzed for common themes using descriptive analysis.
Summary of Results: Participants described orientation as essential to the curriculum. They highlighted the importance of the social orientation during their transition into medical school and noted experiencing complex social pressures during this time. They shared how incoming students were introduced to the dominant medical professional identity during orientation. While participants noted several tensions, many of which revolved around the dominant identity as related to their past, present and future selves, such tensions were particularly salient for students from diverse backgrounds.
Discussion and Conclusions: Longstanding issues of diversity and inclusion in medicine manifest from day one of medical school. While orientation may be seen as a student-run week to welcome students into the profession, it is a crucial period for medical schools to properly set the stage to intentionally demonstrate their commitment to an inclusive culture. Waiting to do so after identity formation has already begun is a missed opportunity.
Take-home Messages: Medical school orientation is a critical transition period for first-year medical students. Students with diverse, intersectional facets of identity experience tensions during this period as they become aware of the dominant medical professional identity. Medical schools have an opportunity to facilitate an inclusive transition for a diverse student body by intentionally reflecting on their orientation week programming using an equity-minded lens.
# SCOD5.1: SCOD - Diversity

# SCOD5.1.8 Harnessing the medical humanities to consider LGBT+ elder healthcare within the undergraduate curriculum (8695)

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ABSTRACT:
Background: Many older LGBT+ adults [elders] in the UK will have endured extraordinary discrimination and homophobia/transphobia during their life course, often intersectional, which may have had an enduring impact upon their physical and mental well-being. LGBT+ elders experience significant health disparities related to ageing, with an increased risk of disability, poor mental health, smoking, and higher alcohol consumption than their heterosexual/cisgender counterparts. They are much more likely to have chosen support networks which can be endangered by ageing and illness.

Summary of Work: At present, very few medical schools include specific LGBT+ elder healthcare learning objectives in their curricula. Students entering medical schools have a diverse range of socio-cultural backgrounds. Undergraduate medical education represents the first opportunity for medical educators to ensure that all future doctors have the same foundational understanding of sexuality and gender, including in relation to LGBT+ elders. This humanities-based study will therefore identify (i) evidence-based pedagogy and (ii) relevant extant narratives in the form of art, literature and film in order to determine how such material might allow for greater understanding and compassionate care of LGBT+ elders via an integrated curriculum.

Summary of Results: *WORK IN PROGRESS A scoping review of curricula-based evidence in medical education is underway to identify effective modalities in delivering content on LGBT+ elder healthcare. A parallel review will identify art, literature and film which captures and conveys narratives relevant to the LGBT+ elder experience

Discussion and Conclusions: The research findings will be used to determine whether extant humanities-based narrative materials can provide a resource for undergraduate medical students in understanding the LGBT+ elder experience in pursuit of culturally competent care and combat healthcare inequalities. An evidence-based intervention will be subsequently incorporated into an undergraduate medical curriculum and evaluated for efficacy to determine whether modalities may be transferable to other topics in an integrated curriculum.

Take-home Messages: Medical students should receive greater instruction on the social and healthcare-related experiences of older LGBT+ patients. At present, very few medical schools include such provision in their curricula. This study explores how the medical humanities may provide a vital source of understanding for the LGBT+ elder experience.
Background: Influenced by social movements, gender equity and respect for diversity have become a global priority. As a result, higher education institutions are concerned with reviewing their policies and practices; regarding the generation and transfer of knowledge, practices and values. Medical schools, in particular, govern and set standards on what are considered healthy bodies, sexualities, and identities. To increase diversity (in terms of gender) and prevent discrimination, we need to know the challenges universities are facing and the different initiatives created to address them.

Summary of Work: This study analyses the main initiatives carried out in the last five years by four important Medicine Schools in Argentina. Data was obtained through semi-structured and in-depth interviews with the main authorities and gender referents, and through the analysis of open access institutional documents. The information was systematized in the following mainstays: 1- Institutional gender norms. 2- Training programs for university authorities and teachers. 3- Gender perspective in curricula and programs. 4- Work developed with the community. 5- Funded research on related topics.

Summary of Results: The analysis evidenced that the four Medicine Schools prioritize open initiatives that provide training in gender perspective to academic staff, human resources, health workers and primary care personnel. In addition, all the interviewees refer that university life must change for violence to end in its different forms: stereotyped assumptions of gender roles, glass ceiling, sexual and gender discrimination. However, the study showed that few curricula and programs consider the gender perspective in their educational content, and activities with the community and research on the subject are incipient.

Discussion and Conclusions: Gender perspective is a very new topic in educational institutions. All members of the university express the desire to become better teachers, doctors and educational authorities.

Take-home Messages: Institutional initiatives that address and take a comprehensive approach to reduce gender inequality and discrimination are valuable and need to be promoted in Argentinas Medical Schools.
# SCOD5.1: SCOD - Diversity

# SCOD5.1.10 Decolonising the Medical Curriculum: A Collaborative Model of Improving Health Inequalities through Structurally Competent Training (8484)

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ABSTRACT:
Background: Decolonising medical curricula ensures improved training of tomorrow’s doctors and their ability to treat a diverse population. Our project focuses on building a holistic, structurally competent teaching system. This ensures inclusivity and revision of unrepresentative teaching materials are at the curriculums core. The project aims to detail an evidence-led, collaborative approach to decolonising medical education at Kings College London, by implementing a tri-directional mode; this incorporates feedback from students, lecturers and subject experts.

Summary of Work: In order to implement relevant, sustainable change in medical training, we developed an evidence-led methodology and piloted the Human Development module in Year 2 of the MBBS programme. As a Year 3 medical student, the first author could identify clinically relevant additions to teaching materials reflecting the needs of a diverse patient population. Each suggestion was supported by high quality, multi-sourced evidence obtained through literature review of medical research, government policies and from subject experts. Professional frameworks and MBBS Learning Outcomes were consulted to ensure the new contents relevancy.

Summary of Results: After presenting our findings to lecturers, they all agreed with the suggestions for improvement and wanted to include them in future teaching. They commented that integration of teaching (to avoid repetition), incorporation of student feedback and creation of additional material (such as webinars) would be beneficial for more detailed, inclusive medical training. They affirmed the importance for formulating guidelines for the medical school to take up to structure and revise teaching material, for more widespread change across the programme. We aim to develop this in a wider project, concluding later in the year.

Discussion and Conclusions: From this project we learnt that clinical educators affirmed support for our tri-directional method and the need for inclusive teaching material. From teachers, we understood that feedback systems and supplementary materials would be useful additions, ensuring our final guidelines allow for continuous evaluation and enhancement of teaching, centred around structural competency. If successful, this could be taken up across multiple healthcare courses.

Take-home Messages: Decolonising medical education is the responsibility of both educators and students and a tri-directional method of decolonisation, will build structurally competent doctors, improving healthcare inequalities for future patients.
#SCOD6.1: SCOD - Education Management – International

#SCOD6.1.1 Educational program in Medicine and Humanities: Challenge and perspective for international virtual exchanges between medical students from Lyon and Ottawa, keeping fair principles (8830)

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ABSTRACT:
Background: Each year since 2016, an international summer school is organized about Medicine and Humanities, with the Faculties of Medicine of Ottawa, Shanghai and Lyon. In 2020, the event have been hold virtually to let the students from the different countries work together on the topic of: Artificial Intelligence (AI) and Health relation during pandemic.

Summary of Work: The working plan of an educational program. During one month, 15 students divided in group of trio were guided to lead research on five important topics: reliability of information, interface in care relations, AI and geriatrics, AI and social disparities and transhumanism. Each group of students was invited to do a presentation on their topic after 4 weeks autonomy or works with a tutor. During this time, they did bibliographic research, they interviewed experts or health professionals and prepared a presentation to share their results. Finally, five experts in philosophy, sociology, health management and engineering of AI were debating their results in round table, giving feedback to the students about their presentations. Overall, a work of adaptation have been done to keep principle of feedback, activity, personalization and relevance have been preserved (Harden, 2013), in this international virtual exchange.

Summary of Results: Three surveys have been conduct about the quality of their training: after the first conferences and the constitution of the groups, after their autonomous work by group, and finally after their final presentation. Results show that students were challenged with the organization of virtual exchanges with time difference between France and Canadian, but they were satisfied with the pedagogical plan and the knowledge they get from it.

Discussion and Conclusions: In conclusion, this experimental training bring an interesting base for further development in virtual education between international students in Medicine and Humanities.

Take-home Messages: To preserve international exchange on medical humanities, in the context of pandemic, is a worthwhile challenge.
#SCOD6.1: SCOD - Education Management – International

#SCOD6.1.2 On line international joint clinical cases discussion to keep motivated students for future exchange programs (8766)

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ABSTRACT:
Background: During the year of 2020, due to COVID19 pandemic, medical students around the world were not able to make their clinical rotation abroad. This was a frustrating situation as most of them dedicated time to prepare for this event. For this reason, Nagoya University organized jointly with the University of Korea and the Chinese University of Hong Kong, an on line joint clinical cases discussion where Ludwig-Maximilian University of Munich was also invited to participate to offer our students the opportunity to have an abroad virtual experience.

Summary of Work: We delivered an on line joint clinical case discussion program with total of 4 sessions including introduction session, pediatrics, internal medicine and surgery (60-minutes each). Total of 16 students on 4th and 5th year from 4 universities participated in the sessions. All participants had desire to be able to have a medical rotation abroad. Our pre-survey data (responded by 15 students) showed that 66.67% of students had never had any medical session with other universities abroad, meaning this was a new experience for them. Their main expectation was the interaction with students abroad (73.3%). Highlighting, that this interaction was 83% important for the decision of taking the course (more than the clinical case discussion itself).

Summary of Results: The course reached/exceeded the expectations in 68.8% of our students. 87.5% of our students mentioned having good interaction with other students. They were also able to try different types of teaching. The course had a very good rating from students, where the main complaint was about the duration being too short.

Discussion and Conclusions: Even with a short notice about the course, 16 students participated; fact that highlights the desire of students to interact with students abroad. The challenging part in organizing such events is to set schedules that are convenient for different time zones. However, with the support of academic staff, this is a very feasible event. We are continuing this program with extra topics with a longer time of delivery.

Take-home Messages: Making a joint on-line session between various university is a very important program to keep motivation of students who wish to study abroad.
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ABSTRACT:
Background: Dentists educated outside EU, EEA and Switzerland who seek to practice as dental practitioners in Sweden have the option to undergo recertification through proficiency testing. Which participants pass the test and what influences passing the test and validation of the tests abilities to pass acceptable candidates, has not been explored. The aim was to examine the associations between background factors and overall results, blueprint of professional qualifications, dental disciplines, and to identify knowledge gaps in the theoretical examination within the proficiency test.

Summary of Work: In a cohort study design, test results were collected from 316 participants, over seven examinations during 2018-2019, combined with background data from public documents. The outcome variables were Pass-limit, Professional qualifications, extracted from blueprinting against the Degree of Master of Science in Dental Surgery and Dental disciplines, derived from eight dental disciplines. Background variables were; age at first test, gender, education length and years since graduation. Data were analyzed using linear regression.

Summary of Results: Being a younger participant and taking the test multiple times were associated with better scores overall and performance regarding professional qualifications. Certain disciplines were particularly challenging for the whole group taking the test e.g., prosthodontics, endodontology, oral medicine and pediatric dentistry. The group passing the test predominantly scored the most points in each dental discipline. However, a few passing participants had less than 40 percent of the possible score in some disciplines.

Discussion and Conclusions: Although age was a predictor for scoring well, other important factors are known to covariate with age, e.g. personal and professional experience, family situation, language skills and culture. Future studies of the theoretical test, the clinical skills test, the 6-month clinical practice as well as recertified dentists and employers perceptions of knowledge gaps are important parts of the proficiency tests quality assurance and will bring deeper understanding of this topic.

Take-home Messages: Young age and taking the test multiple times were associated with better results overall and in professional qualifications. Exploration of knowledge gaps indicates that some dental disciplines are challenging and that there are passing participants with knowledge gaps in separate areas.
#SCOD6.1: SCOD - Education Management – International

#SCOD6.1.4 International Medical Graduates’ experience in the National Health Service: Challenges and educational solutions (9162)

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ABSTRACT:
Background: Many International Medical Graduates (IMGs) face significant challenges when starting work for the National Health Service (NHS) and some of these are not fully recognised. Studies exploring their experiences when transitioning to the NHS are rare. Our aim is to address this gap in knowledge.

Summary of Work: A qualitative survey was distributed among IMGs working in General Medicine in the NHS. There were nine open questions examining the following themes: reasons for choosing the NHS, the challenges faced on starting the job, things they liked to know prior to arrival. We conducted thematic analysis to identify the main themes and sub-themes.

Summary of Results: A total of 26 IMGs responded to the survey. The main reason for choosing the UK was training opportunities, which they regard as one of the best healthcare systems. With regards to challenges, the main theme that emerged was the lack of IMG-tailored educational induction, exacerbating the difficulties in adapting to the new system. Indeed, adjusting to the new healthcare system and its nuances was highlighted as one of the immediate challenges. They also reported perceived mistrust in their abilities and skills, inadequate shadowing opportunities and lack of advice about adapting to life in the UK which was further exacerbated by the COVID-19 outbreak. To mitigate these challenges, many felt that a specific induction process and information about settling in the UK is necessary.

Discussion and Conclusions: The challenges facing the IMGs can potentially affect their work performance and wellbeing. Our data suggest a need for a tailored induction process and a robust peer-support network to help the IMGs adapt to the new environment and gain confidence. In a more globalised world, improving the experiences of a diverse workforce is crucial for successful health systems and better patients outcomes.

Take-home Messages: To facilitate IMGs transition to the NHS it is essential to: - Introduce an IMG-tailored induction including health system information and cultural aspects of living in the UK. - Start initiatives that celebrate the diverse cultural origins of IMGs. - Develop a support network where each new IMG is matched to established IMGs.
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ABSTRACT:

Background: With UHC being a major part of the SDGs 2030 Agenda, IFMSA, representing medical students worldwide, aims to increase the contributions of its members in achieving UHC on both national and global levels. However, IFMSA survey showed that UHC is not included as a topic in over 50% of medical schools worldwide, with data from 262 students from 80 countries. With this in mind, in order for the contributions of IFMSA to be of a meaningful impact, the approach taken had to be one that integrates all levels and areas of needs from a medical students perspective, including capacity building with required knowledge and skills, quality activities carried out by National Member Organizations and Local Committees, and advocacy efforts towards relevant stakeholders.

Summary of Work: IFMSA's efforts were focused on campaigns and advocacy towards relevant stakeholders, and incentivizing local and national action through IFMSA members. In addition, the education, capacity, and empowerment of medical students through various activities were also included.

Summary of Results: IFMSA conducted 2 international UHC campaigns with an average reach of 550 likes and 200 shares, established the UHC Activities Map with 18 submissions from 5 regions, and conducted 2 UHC Activities Competitions with 19 submissions from 5 regions. Also, manuals on UHC activities and simulations were created, and 10 UHC-related sessions were conducted during 4 General Assemblies. 3 A2P and 3 PHLT workshops were held with a total of 92 participants.

Discussion and Conclusions: Although the interest of medical students in their health systems is high, their educational systems rarely offer the knowledge and skills to match that interest, and opportunities for involvement are far too scarce and of minute extent, leading to the marginalisation of medical students voice. But, as evidenced by the activities conducted by IFMSA members, their presence in stakeholders conversations, and rates and quality of participation in IFMSA UHC efforts, medical students are a powerful force that can drive the change needed to achieve UHC.

Take-home Messages: Medical students are very aware when it comes to issues facing their healthcare systems, and if given the opportunity for meaningful engagement and properly equipped, they can offer substantial contributions in achieving UHC.
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ABSTRACT:
Background: The increasing opportunities for medical students to participate in international, supervised and structured electives have been shown in our recent study, which enhanced students professionalism, cultural competence and clinical reasoning skills in preclinical years. However, there is scant evidence with respect to achieving the specific learning objectives and improving clinical reasoning during clinical years. This study aims to demonstrate how the short-term supervised elective can improve students clinical reasoning skills, skills of case report writing and satisfactory academic performance.

Summary of Work: We recorded daily discussions on the demonstrated skills and cases collection during a 19-days supervised elective. The daily clinical reasoning discussions, case collection and bedside demonstrations in different disciplines become the main content of the reflections discussed. Their feedbacks were recorded post-exchange to examine the impact of the exchange in their ongoing case report writing, clinical reasoning skills and academic performance.

Summary of Results: The main themes of case-based clinical reasoning identified in the daily feedbacks were described by the students in two frameworks. Clinical reasoning learning is well demonstrated during students-supervisors daily debrief. The students have used these clinical reasoning skills in ensuing clinical placements with satisfactory academic performances. The students have completed two case reports individually with cases publication in both Australian Doctor and BMJ case report. The supervisors obtained students feedbacks at the time of the elective, 6-month and 12-month post-exchange. The summary of the students feedbacks is highlighted in three aspects including clinical reasoning, scientific writing and academic performance.

Discussion and Conclusions: These reflections provide insight into how this exchange elective may improve students clinical reasoning, enhance scientific writing skills and strengthen academic performance.

Take-home Messages: 1, International elective with pre-designed specific learning objective can play an important role for clinical reasoning. 2, Dual supervision from both institutions is of paramount importance in bedside demonstration teaching and learning. 3, Daily case presentation and clinical reasoning discussion is improving students clinical assessment skill. 4, Daily case-based discussion with case selection for case report writing is boosting students scientific writing skills. 5, Clinical reasoning learning is greatly enhanced with case report writing and the ongoing student-supervisor interaction, may contribute to students satisfactory academic performance.
ABSTRACT:

Background: The International Federation of Medical Students Associations (IFMSA) runs the largest students run exchange program in the world, envisioning to prepare future global health leaders through its professional exchange program. One of the priorities addressed is Universal Health Coverage (UHC), and educating medical students on how to advocate for this topic in their health systems, showcasing the importance of structured medical mobility programs in global health education.

Summary of Work: The Standing Committee on Professional Exchange (SCOPE) in collaboration with the Standing Committee on Public Health (SCOPH) coordinated a Small Working Group to implement a UHC Campaign on the International UHC Day. During this campaign, the following goals were set to showcase the role of our exchange program in approaching this topic: -Increase the knowledge of IFMSA members about UHC. -Promote the integration of UHC within IFMSAs professional exchanges. This was achieved through promoting the IFMSA materials and efforts, and facilitating training sessions on the matter, such as UHC within Exchanges.

Summary of Results: The campaigns goals were achieved through various activities, addressing a problem previously identified. At the end, we measured the reach and engagement for the activity on different social media platforms. By starting with a poll, we addressed the implementation of UHC activities in exchanges, with only 14.29% positive results. Our response was sharing the UHC simulation manual, which has reached 1,303 people and 152 engagements, a UHC within exchanges video, which reached 1,537 people and 152 engagements, and holding a UHC within exchanges session with 33 attendees from 18 countries.

Discussion and Conclusions: It has been shown that medical students have the will to work and advocate for global health education, but they do not have enough orientation, resources and space for this topic in their health systems or medical curricula.

Take-home Messages: There is a crucial role that can be played by the medical students mobility programs to compensate for the lack of global health education in the medical curricula including but not limited to UHC. Obtaining the full support and recognition of these mobilities from both the faculties and Global Health Education stakeholders can move a step forward in this area.
#SCOD6.1: SCOD - Education Management – International

#SCOD6.1.8 Promoting the Development of Medical Education in China through a National Medicine Education Platform (9813)

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ABSTRACT:
Background: There are currently more than 600 medical schools (including higher medical schools and specialized medical schools) in China, specializing in 61 majors in 11 directions. Among them, 192 colleges and universities offer undergraduate programs in clinical medicine, enrolling more than 100,000 clinical medicine students every year. In order to promote the development and reform of medical education nationwide, and to coordinate and bring together medical education scholars nationwide to conduct in-depth research on the current situation and development direction of medical education in China, in May 2018, the Ministry of Education and the National Health Commission commissioned Peking University to establish the National Centre for Health Professions Development to undertake medical education research and training, education quality evaluation and accreditation, and promote communication among relevant industry sectors. In 2020, the National Centre for Health Professions Development conducted a student development survey for graduates and current students greeted by clinical medicine programs in 107 institutions nationwide, and nearly 160,000 questionnaires were collected for analysis. In 2021, the survey is expanded to include public health, nursing, and pharmacy, and will be distributed to wider samples. The National Centre for Health Professions Development has built a national medical education data platform to gather data related to medical education, including institutional data, student data and faculty data of medical schools nationwide, to further carry out relevant research to understand the current status of development and make decision consultation for future medical education reform.
# SCOD6.2: SCOD - Education Management – Management & Leadership

# SCOD6.2.1 Academic Promotion: What is Considered in Medical Schools and World Ranking Systems? (9086)

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ABSTRACT:
Background: World medical university ranking systems are commonly utilised as parameters of academic excellence, and regulations for academic promotion in medical schools are measures to enhance academic performance of faculties. However, the association between ranking system and regulations of academic promotion is yet to be explored. This study aims to understanding the similarities and differences between world ranking systems and regulations in medical schools in Taiwan.


Summary of Results: Reviewing the ranking methodologies and regulations, a total of 162 items were collated. Both emphasise publications, industrial collaboration, international awards, conference participation, performance of collaborated teaching hospitals, and student teaching. Distinct features from ranking systems are number of citations of publications, income related to research, and professional development, whilst medical school regulations put more emphases on project and society leadership, educational promotion, and national service roles. A trend for crediting in medical education was noted in the regulations such as performance in bedside and clinic teaching, innovative medical teaching, and clinical examination participation. Researchers had disagreement among 13% of items in regulations per medical school.

Discussion and Conclusions: An increased trend for research reputation has been examined by number of citations and leaderships in societies. However, the system has not yet developed approaches other than citation indices to determine importance and novelty of research. Although educational promotion is listed, not much relevant credits were given due to lack of convincing parameters. Promoting medical education can be credited, but providing relevant evidence is challenging. Researchers had relatively high disagreement over many items in regulations, suggesting ambiguity of regulations. More transparent and explicit items should be listed in both methodology and regulations.

Take-home Messages: Large proportions of ranking system and item of promotion regulations emphasise publications, industrial collaborations and conference participation. Future system may develop parameters regarding to novelty of research, and credits of medical teaching, and international leadership.
#SCOD6.2: SCOD - Education Management – Management & Leadership

# SCOD6.2.2 Women in medical education: An exploration of women educators’ narratives of career transitions (9032)

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ABSTRACT:

**Background:** Although increased attempts by institutions and employers to increase the number of women working in medical education have led to improvements in the numbers of women leaders in the field, significant gender-based differences persist. Women clinicians are still under-represented at higher levels in education, and more likely to work less than full time and change careers and roles. There have been few attempts to explore the lived experiences of women clinical educators. This study focuses on women medical educators accounts of career transitions, exploring the complex interplay between career decisions, professional development and career paths.

**Summary of Work:** Data comprised nine semi-structured interviews and 55 short written accounts of career turning points, transitions and decision-making from women clinical educators. Independent analysis of both datasets was first performed using narrative analysis approaches. The results were subsequently pooled and compared to identify areas of inconsistency, ambiguity and narrative tension.

**Summary of Results:** Previous studies focussing on the barriers to educators career development have tended to assume that participants, if properly supported, wished to develop careers in medical education. However, our study revealed significant ambiguities. While many participants expressed satisfaction at having chosen a medical education career, others reported feeling pushed into medical education by circumstances, including toxic clinical environments. Narrative analysis revealed widespread ambiguity regarding personal, educator and clinical identities. Additionally, participants wanted to assert their autonomy in taking control of their career decisions but there was simultaneous acknowledgement that their individual agency was undermined by cultural, social and organisational expectations both within medical education and in the wider clinical environment. Even where an individual had been strongly motivated to pursue an educational career, resultant challenges and disappointments led some to doubt their initial decisions.

**Discussion and Conclusions:** While considerable advances have been made in supporting women clinicians to develop satisfying careers in medical education, career advancement may still involve individuals undergoing personal sacrifices and enforced high stakes decisions, along with lingering regret at the concomitant effect on their clinical careers.

**Take-home Messages:** Many decisions associated with career advancement in medical education come with significant personal and career costs to women, of which may lead to lingering regret and resentment.
#SCOD6.2 Netting educational opportunities: The impact of a clinical teaching fellow network on the professional development of junior doctors (8849)

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ABSTRACT:
Background: Clinical teaching fellowships (CTFs) are an integral component of UK medical education faculty (1). CTFs are diverse, with variation in specialty focus, clinical commitments, and involvement in curriculum development and research (2). At our institution, a CTF network was established in 2014, with ongoing support from senior faculty. We aim to evaluate the value of CTFs and CTF network in supporting clinicians in their professional development.

Summary of Work: An online survey with quantitative and qualitative questions was sent to 229 CTFs (2014-19) through our network mailing list. We received 44 complete responses (20 current, 24 previous). Free-text data was coded and thematically analysed by two researchers and audited by a third researcher, before consensual agreement was achieved between the research team. These were mapped against a value assessment framework based on the immediate, potential, applied, realised and reframing value of CTFs and our CTF network (3).

Summary of Results: CTFs enjoyed teaching and education whilst having more autonomy and respite from clinical work. CTFs developed a range of skills including pedagogically informed teaching, experience in educational processes and research, improved clinical skills, and professional values and behaviour. CTFs continued to employ these in future roles. CTFs described a change in attitude towards learning in HE institutions, reframing of beliefs and shift in role identity. CTFs enjoyed feeling part of an educational community and benefitted from this through shared access to knowledge, collaboration on teaching and research, and development of professional values and behaviour. Although some CTFs described a new appreciation towards communities of practice, others felt these benefits could be maximised further.

Discussion and Conclusions: CTFs experience transformational learning as a result of clinical teaching fellowships that impacts their personal and professional development. CTFs enjoy and learn from collaborative working within a formalised institutional CTF network. However, this warrants improvement to allow greater benefit to members and the mechanisms of this require further evaluation.

Take-home Messages: By capturing the experiences of CTFs, our research supports the expansion of the CTF post for personal and professional development of junior doctors and the development of faculty supported networks at higher education institutions throughout the UK to strengthen these impacts.
Abstract: Health professional education (HPE) is arguably the most expensive tertiary education but related fields have not formed a very clear outline of funding input in HPE and the financial situation of health professional institutions (HPIs) worldwide. Double First-Class initiative categorizes Chinese HPIs into three different levels. Existing studies can hardly provide an overall picture of the funding level and diversity among HPIs with stratification in China.

Summary of Work: We aim to analyze the funding trends of HPIs of different levels from 1998 to 2017 by stratifying the 152 HPIs in three different levels according to Double First-Class initiative and solve two problems: 1) What is the temporal trend of funding levels among HPIs of different levels? 2) How does the stratification of institutions affect the funding? Statistics are calculated by mean, GINI coefficient and Theil index.

Summary of Results: The average funding per institution (FPI) at the national level has continued to increase. Funding per student (FPS) of different levels of institutions has declined slightly in the early years of the 21st century, but the growth trend has resumed around 2008. For FPI, there is a decline of differences between different levels of HPIs over the years and funding differences between HPIs rest more on their difference within groups in 1998-1999 while between groups in 2000-2017. In terms of FPS, GINI coefficients of all levels of institutions are small, where the difference within groups is decreasing but between groups is increasing yearly.

Discussion and Conclusions: Although FPI has increased for 17.5 times from 1998-2017, FPS has only limited increase 1.3 times during the same period, the reason for which is that China implemented the numeric expansion of enrollment movement since 1998. The results of China's analysis have some implications for other developing countries. We call for a further increase in FPS and a reduction of the funding disparity to improve the homogeneity of medical education in China.

Take-home Messages: The funding effect of stratification in HPIs in China is obvious, bringing both opportunities and challenges (e.g. quality differentiation) for HPE.
# SCOD6.2: SCOD - Education Management – Management & Leadership

# SCOD6.2.5 The Impact of Local Health Professions Education Grants – Is It Worth the Investment? (8491)

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**ABSTRACT:**

**Background:** Medical education research has increased significantly, but funding remains limited to support high quality research. Local grants are an important resource to fill this gap. Understanding factors which predict successful outcomes is highly relevant to administrators who wish to distribute funds to projects most likely to be successful. The purpose of this project was to identify factors that contribute to the success of local medical education grants in a Canadian context.

**Summary of Work:** Surveys were distributed to previous Department of Innovation in Medical Education (DIME) and Department of Medicine (DOM) grant recipients (n=115) to gather information about principle investigator demographics and research outcomes. A backward logistic regression was used to determine the effects of several variables on publication success.

**Summary of Results:** The overall publication rate was 64/115 (56%). Due to incomplete data, 91 grants were included in the logistic regression. Variables associated with a higher rate of publication: DIME grant (cross departmental) compared to DOM (single department) OR = 2.82 (p= 0.04), being presented OR = 3.30 (p=0.01), and multiple grant acquisition OR = 3.85 (p=0.005). Academic rank, post graduate training, and amount of money awarded were not associated with publication status.

**Discussion and Conclusions:** Our results showed that a large number of recipients do not publish. However, increased research publications from local grants may be facilitated by pooling funds across departments, making research presentations mandatory, and allowing successful researchers to re-apply. Grant administrators can use this information to their advantage in ensuring applicant success, which may further attract external funding and lead to overall improvement in local grant outcomes.

**Take-home Messages:** We identified 3 key factors impacting publication success. Local grants programs can increase their chances of grant recipient publication by carefully considering and investing in these factors. While further research to confirm and expand these results is needed, but we hope this will inform other centers who currently have, or are considering a local grants program. In this era of accountability, it is imperative to demonstrate to stakeholders that local grants are impactful and lead to successful research dissemination.
Abstract:

Background: The WHO estimates there will be a shortage of 18 million health workers by 2030 and health professional schools will need to be expanded dramatically to fill this gap. Multiple barriers exist to expanding existing schools and starting new health professional schools, especially in medically underserved communities. These barriers include financial, technical (curricula design), operational (business plan design, operational plans), logistical (purchase of equipment such as for labs and medical simulation,) faculty shortages, and clinical site shortages.

Summary of Work: The 500 Health Professional Schools Initiative is committed to catalyzing the founding or expansion of 500 health professional schools, preferably directly in medically underserved communities. This will be done through advocacy, facilitating access to financing, creation of global public goods such as free online curricula, a shared pool of instructors for online or travel teaching, sample operational documents, group procurement of equipment and supplies, and networking groups, etc.

Summary of Results: The 500 Health Professional School Initiative has been launched and is in the process of forming partnerships, identifying schools for participation, and collecting and creating sample school documents. The Initiative has partnered with NextGenU and Nurses International to create the first several modules in a full online nursing curriculum that schools can use for free. The Initiative has started working with several schools in Africa and Asia to perform assessments and expand and improve their programs.

Discussion and Conclusions: The work will be undertaken over the next 10 years with the goal of providing significant assistance to at least 50 schools a year. Most efforts towards advocacy and creation of global public goods will be completed in the first two years. Metrics of success include the number of new education seats created, the number of schools receiving assistance, number of dropouts prevented, the dollar value of negotiated discounts for equipment, the number of instructors in the shared teaching pool, the number of participants in networking groups, and social media impact.

Take-home Messages: In order to train enough health workers to meet global healthcare needs, a global initiative has been launched to assist health professional schools all over the world to be founded, expand, and thrive. We aim to create a world in which any person can pursue a career in health, no matter what their community of origin, and that all communities have access to qualified, caring health workers.
SCOD6.2: SCOD - Education Management – Management & Leadership

# SCOD6.2.7 The Characteristics of effective clinical supervision: A rapid evidence review (9351)

AUTHOR(S):
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ABSTRACT:
Background: Understanding what makes clinical supervision effective, and learning more about the barriers and challenges of effective supervision is an important concern for the health and social care workforce. Aim: to identify the characteristics of effective clinical supervision. Objectives 1. What do individuals need from a system of clinical or peer supervision, and what areas should supervision focus on? 2. What are the outcomes of effective clinical supervision and peer supervision? 3. What are the barriers to effective clinical and peer supervision? 4. How much supervision is appropriate?

Method/eligibility criteria
Summary of Work: A rapid evidence review was undertaken, following the systematic search of relevant papers. Five databases were searched: CINAHL, OVID Embase, OVID Medline, OVID Psychinfo and ProQuest. Inclusion criteria were: clinical supervision focused on regulated healthcare professionals and published within the last ten years.

Summary of Results: The search identified 15922 papers, which were reduced to 809 full papers following the removal of duplicated and papers outside the inclusion criteria (eastern culture, non-English, pre-qualification students). Once full papers were read, 135 were included in the review. This review identified that effective clinical supervision is based on the following characteristics: 1) When supervision is based on mutual trust 2) there is a shared understanding of purpose 3) the focus is on providing support, enhancing development and improving service 4) occurs regularly and when needed 5) a range of models are beneficial including distance, group and supervisors outside the organisation 6) protected time and private spaces provided by the organisation 7) supervisors are trained 8) timed sessions are flexible to meet the needs of all staff including those on night shift.

Discussion and Conclusions: Positive benefits of clinical supervision included: able to cope with the job, less likely to leave, increased resilience and job satisfaction and reduced stress and anxiety. Barriers included; a lack of time, heavy workload, lack of resources, unsupportive management and colleagues.

Take-home Messages: Support from management is needed to enable effective implementation, but supervision is subject to different interpretations by managers, who tend to focus more on service delivery rather than on staff development.
# SCOD6.2: SCOD - Education Management – Management & Leadership

# SCOD6.2.8 Should we train medical students to be Health Care Assistants? Nursing faculty perspectives (8113)

**AUTHOR(S):**
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Elizabeth Anderson, University of Leicester, UK
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**ABSTRACT:**

**Background:** Medical students spend their earliest years learning theory away from the realities of front-line clinical practice, preventing them from being practice-ready (Mounrouxe, 2017; Anderson, 2020). One solution is early alignment of the medical curriculum for gaining the competences of the care certificate (CC). Recent evidence suggests benefits for students working as Health Care Assistants (HCAs) (Davison, 2019). We report on a UK medical school HCA project from the view of the nursing faculty who led it.

**Summary of Work:** In 2019, a team of nursing faculty were recruited to deliver the CC programme to thirty first year medical students (pilot). Using a qualitative approach, applying constructivist theory, faculty experiences and perspectives were collated using audio-recorded, semi-structured interviews (independent researcher KP). The transcribed-transcripts were analysed using reflexive thematic analysis (Braun, 2019). All researchers (KP, SG, ES) worked together to agree final themes.

**Summary of Results:** Seven (of ten) faculty members were interviewed. Five themes were identified; i) hierarchical challenges; ii) new affinity with students; iii) benefits for students; iv) anxiety about teaching students; v) uncertainty about making CC compulsory. The interviews revealed a gulf between nursing and medicine with this training as a route for closer understandings: There’s a very good hierarchy in the NHS ... job roles have ... evolved ... maybe attitudes haven’t. The faculty had new insights into medical training and greater affinity for the curriculum challenges. They questioned medical insights into nursing when other professions could never gain insights into medical practice and if this should be compulsory: if you want to go and study to be a doctor its not going to be everybody's choice to then be made to go and work as a HCA.

**Discussion and Conclusions:** These medical students were the only first years who could step-up in the pandemic. The nurse-led faculty were open on their perspectives of medicine and concerning the integration of CC competencies. This training was seen as a way to break down barriers between professions and gain early experiences of practice in a patient-facing role. In 2020 all first year students were trained for the CC.

**Take-home Messages:** This intervention offers a motivated and prepared workforce in times of need during COVID-19.
ABSTRACT:
Background: Competence by Design (CBD) is a major change initiative that aims to ensure physicians graduate with the competencies required to meet local health needs, and to enhance patient care by improving learning and assessment across the continuum from residency to retirement. Described as a paradigm shift, CBD requires deep systems transformation; a change which seeks to shift mental models resulting in the emergence of new organizational cultures. This type of change is incredibly challenging to bring about. Often such educational initiatives result in change without reform, where the surface is turbulent with the introduction of new practices but the underlying assumptions driving teaching and learning remain unchanged. In evaluating CBD then, we wanted to create an approach that would help us understand the extent to which we are achieving change with reform or actual system transformation. We set out to create a program evaluation framework with this goal in mind.

Summary of Work: First we identified three key aspects of the change process; Readiness to Implement, Fidelity & Integrity of Implementation, and Outcomes. Readiness to implement examines an organization’s capacity to implement CBD and identifies factors that enable or inhibit successful implementation. Fidelity of implementation captures the extent to which critical components of CBD are being implemented. Integrity describes the extent to which the changes embody the desired qualities of the reform. Combined, fidelity and integrity help us to understand if we are actually achieving the desired level of system transformation. With this information we can then turn to examining outcomes confident that there is a clear link between CBD implementation and the desired impact. These aspects form the three pillars of a longitudinal program evaluation framework.

Summary of Results: Studies addressing the three pillars are currently ongoing, monitoring programs as they prepare to implement, and as they undertake implementation of CBD.

Discussion and Conclusions: This evaluation framework is being used to inform and adapt implementation as CBD is introduced to all Canadian residency education programs.

Take-home Messages: When evaluating a large system change, it is critical to examine if the changes are actually achieving the desired system transformation.
ABSTRACT:
Background: Advancing excellent healthcare requires a strategic funder approach to develop and retain talented, research-focused healthcare professionals who can balance clinical and academic activities effectively for the benefit of patient care. Unfortunately, there are many inequalities in clinical academia, often based upon protected characteristics. The aim of this study was to (a) conduct a systematic review to explore barriers, facilitators and existing interventions within CA careers and, (b) collect qualitative data to explore the lived experiences of CAs across the career trajectory.

Summary of Work: The systematic review follows PRISMA reporting guidelines. Five databases were searched; outcomes were study defined; full text screening was performed in duplicate; and risk of bias assessed. The qualitative phase involved thematic analysis of (a) semi-structured interviews with 104 CAs and (b) audio and written diary data over an 8-month period, during the global COVID-19 pandemic. Data were triangulated through the observation of funding panels, case studies and seeking expert opinion.

Summary of Results: The systematic review identified 34,230 records. 239 studies were included in the review of barriers and facilitators, 141 included in the review of interventions and seven in both reviews. Of the 148 studies included in the interventions review, 28 were included in the quantitative synthesis, 17 included in the qualitative synthesis and two included in both. The literature lacked high quality, well-reported research studies. The majority of included studies were from North America. Interview data broadly pertained to eight major themes: identity; motivation to pursue; barriers; enablers; myths and the hidden curriculum; interventions; advice and top tips; prescriptive and descriptive biases. Across the data, discrimination based upon protected characteristics was rife; this led to many CAs leaving the research environment.

Discussion and Conclusions: The findings provide comprehensive evidence that CAs struggle to navigate the CA pathway and balance clinical duties with conducting research. Existing literature is limited by rigour and reporting, but there are significant lessons to be learned.

Take-home Messages: Research funders should commit to evaluating any future interventions they put into place which aim to address inequalities in the CA workforce. Successful interventions are likely to be comprehensive multi-faceted programmes of training, in which relational and supportive factors are key.
#SCOD6.3: SCOD - Education Management – Medical Education Research

# SCOD6.3.1 Visual Excavation: Reconstructing Health Professions Education Research into Visual Artifacts (8241)

AUTHOR(S):
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ABSTRACT:
**Background:** Despite common use in patient care, interprofessional practice is less utilized in health professions education (HPE) research. Using visual art as the impetus for exploring new avenues in presenting science, our objective was to create hand-made artist books with haiku poems, representing the lived experience of interprofessional researchers during their scientific discovery.

**Summary of Work:** Forming a unique collaboration, a visual artist/ethnographer and surgeon/biomedical researcher worked together to analyze and extend the data from three ongoing IRB approved research projects. Drawing on each others professional expertise and creativity, they converted the text-laden narratives contained in field notes and interviews to white board schematics, representing the shape, rhythm, and texture of the research data into visual artifacts. This extraction process incorporated a visual interpretation of not only the research results, but also their joint experiences of performing the research, elucidating new patterns and structures of investigation. The schematics served as scaffolding in creating visual artifacts in the form of five hand-made artist books with haiku poems.

**Summary of Results:** The 25 visual art images and five poems in the artist books are reflective of the researchers lived experiences conducting HPE research. Going beyond charts and graphs, the final visualization of data made evident the embodiment of the research process, coupled with interprofessional perspectives concerning data analysis.

**Discussion and Conclusions:** In HPE research, visual data provides especially compelling evidence for deciphering meaning. It frees the written word and uncovers the characteristics of the research process by exposing the interrelatedness of the observed and connecting phenomena that may otherwise remain elusive. The visual narrations developed from our scientific research serve as stories by asking how researchers from complimentary disciplines collaborate to analyze scientific data. Scientific work is often isolated. An interprofessional collaborative approach can provide a new lens for interpretation. Understanding the implications of cross-disciplinary approaches in HPE research may open up possibilities for collaboration for both scientific research and science informed artmaking.

**Take-home Messages:** The intersection of art and science expands both thinking and discovery for finding meaning in HPE research.
AUTHOR(S):
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Harm Peters, University of Berlin, Germany
Panel for scientific competencies of the GMA scientific competencies of the GMA*, German Association for Medical Education (GMA), Germany

ABSTRACT:
Background: The teaching of scientific curricula differs around the world. Germany has very highly trained scientists, but little was known about the implementation of scientific curricula in medical studies (1, 2). The panel for scientific competencies of the German Association for Medical Education (GMA) developed a questionnaire and initiated a study aiming at gathering curricula and best practice concerning scientific competencies in a baseline study.

Summary of Work: In two workshops and several panel meetings the questionnaire was developed by an expert group. It consists of 79 questions covering different topics (faculty, mapping, goals, research projects, assessment, quality management, financial issues, corona).

Summary of Results: In total 28 of 40 German medical faculties have answered, 74 % teach a standard study course. 46 % have already mapped their full scientific curriculum, 77 % used the German catalogue of learning objectives (NKLM) as basis therefore (3). 61 % taught according to an obligatory scientific curriculum, 94 % of these longitudinal. 64 % had more scientific goals ready for implementation. 96 % of the faculties covered goals in ethics in science, 71 % in EbM, 75 % in science methodology and 68 % in science theory. 86 % assessed scientific competencies (85 % MCQs, 70 % open questions, 5 % key features, 39 % abstracts, 72 % presentations, 52 % posters, 41 % oral examinations, 25 % feedback, 13 % OSCEs, 50 % scientific term papers). 77 % evaluated and 35 % created research around their scientific curricula. 82 % of the curricula and 26 % of the assessment methods were changed because of the corona pandemic.

Discussion and Conclusions: The panel successfully developed and used the questionnaire. It will also be sent to Austrian and Swiss Medical faculties. 50 % of the faculties have already assessed by means of a scientific term paper according to the coming version of the German Medical Licensure Act for Physicians (4). Nearly two-thirds of the German medical faculties have already implemented scientific curricula, thus demonstrating that the importance of creating scientific competent physicians has been recognized.

#SCOD6.3: SCOD - Education Management – Medical Education Research

# SCOD6.3.3 Introducing Master students to the peer review-rebuttal process: A peripheral participation-based module (8702)

AUTHOR(S):
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ABSTRACT:
**Background:** The peer review process, in which a manuscript or grant proposal is evaluated by invited referees (peer reviewers), is a cornerstone of (bio)medical research. Researchers respond to peer-review by rebuttal, i.e. with additional analyses and/or experiments and by giving solid arguments to the comments. Often, (bio)medical students only learn how to rebuttal after their master studies, i.e. as a PhD fellow or junior (clinical) researcher. This is at odds with the importance of obtaining funding for projects and getting manuscripts accepted for publication.

**Summary of Work:** A module was developed based on a real-life review-rebuttal process in which students interact with an invited researcher in his/her role as corresponding author of an actual manuscript. Students received the submitted paper and comments, presented the rationale behind a specific reviewers comment and proposed an (experimental) approach to address it adequately. The corresponding author gave feedback and also revealed how he/she responded to the criticism in reality. In 3 subsequent editions, students evaluated their experiences quantitively and qualitativel \(n=112\) and the invited researchers \(n=3\) also provided qualitative feedback.

**Summary of Results:** On a 5-point Likert scale (strongly disagree-strongly agree), students scored the module with 4.6 ± 0.6 as being helpful and instructive. Students indicated its unique character but also how it supports their development into a researcher (I really liked this exercise, very useful as part of being trained as a scientist). The invited researchers also clearly appreciated the module (A very nice way to introduce students into the real life of a scientist, with all the fun and the frustration.).

**Discussion and Conclusions:** A hands-on experience with key elements of the peer review-rebuttal process (e.g. critical thinking, creative thinking, learning and practicing argumentation) introduces students to and makes them partake in true scientific practice and thereby contributes to developing their professional identity as researchers. The invited researchers feedback underscores how the module also strengthens the research-teaching nexus. The module can be a valuable addition to other curricula and courses that aim for (bio)medical research training.

**Take-home Messages:** Students should be introduced to the peer review-rebuttal process by authentic peripheral participation before submitting their first research manuscript.
#SCOD6.3: SCOD - Education Management – Medical Education Research

# SCOD6.3.4 Zooming in for the theory tree in a forest of theories: On finding the best fitting theoretical framework for a medical education research (9745)

AUTHOR(S):
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Sophie Park, UCL, UK
Nathan Davies, UCL, UK

ABSTRACT:
Background: Theories are critical to frame research questions, guide research designs, analyse data and draw conclusions. This process is difficult, and often painful because a researcher may get lost in the forest of theories, having read many theories relevant to the topic, but still could not identify the specific theory tree. In this abstract, I explained how I systematically deliberated and chose theories that best fit my research aim.

Summary of Work: Using a simple grid technique, I mapped different theories that could inform my study on clinical reasoning teaching and learning in undergraduate primary care medical education. The grid consisted of a list of theories filling the left-most columns mapped against a set of criteria that made the rest of the columns. The criteria include the description and characteristics of the theory, the research questions, the units of analyses, the participants from which I can collect data, the potential knowledge claims, and the pros and cons of using the theory.

Summary of Results: At the beginning of this exercise, I identified six theories that ranged from grand-theory to mid-range to micro-range theories. I chose these theories based on my study nature, the research questions and the theories used in relevant past research. Through discussions with two theory experts, supervisors and colleagues, I shortlisted three theories that approximated the best fit. Further iterations with my supervisors reduced the theory choices to two; with the final theory-choice deliberated through writing a one-page reflective rationale on why I chose the final theory.

Discussion and Conclusions: This theory mapping using a simple grid technique has been useful in facilitating me on how best to think and systematically choose the theory for my research. The limitation of this exercise was a single case use. I suggest further study to investigate the usefulness of this tool among other early career researchers and graduate students of medical education.

Take-home Messages: 1. Thinking systematically about a theoretical framework for research is like finding a specific theory tree in a forest of theories. 2. Theory mapping using a simple grid technique may serve as a useful tool to stimulate reflective thinking with one-self and facilitate discussions with others.
AUTHOR(S):
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Paul Paes, Newcastle University, UK  
Charlotte Rothwell, Newcastle University, UK

ABSTRACT:
Background: The use of online synchronous videoconference data collection pre-dates the COVID-19 pandemic. There is a growing literature regarding the function, scope and best practice of online qualitative methods. However, little is known about how this translates to the field of medical education, and there is a paucity of data concerning healthcare students.

Summary of Work: This study is a component of a grounded theory based medical education research project which transitioned from face-to-face to online qualitative data collection. The purpose was to address the following objectives: - To develop an understanding of how the context of data collection (online versus face-to-face) influenced researcher-participant interaction - To explore the barriers and facilitators for collecting rich data using videoconference techniques The researcher kept a reflexive account throughout the investigation. An anonymous online questionnaire was used to understand the experiences of medical student participants post-participation. Ten of the 18 online focus group participants and 7 of the 16 online interview participants responded (overall response rate 50%).

Summary of Results: Research by videoconference was very well received by medical student participants. Respondents with previous face-to-face research experience considered the videoconference experience comparable and even preferable. The majority of participants (16/17) said they would take part in similar sessions again. Key themes of the free text analysis were: logistical benefits and challenges, changes to conversational dynamics and the conditions for success. The researcher found the online videoconference interviews analogous to the face-to-face interviews, yielding rich qualitative data. Additional measures were required to optimise researcher-participant rapport.

Discussion and Conclusions: The survey findings were consistent with previous studies using online videoconference data collection in terms of widening access, convenience benefits, internet-related difficulties and communication challenges. The researcher experience supports existing evidence that online videoconference techniques can yield rich qualitative data.

Take-home Messages: Remote videoconference online focus groups and interviews are an acceptable means of engaging in medical education research for medical student participants and were considered preferable for some respondents. Medical education researchers can have confidence that online videoconference mechanisms can replace face-to-face data collection strategies where adaptations are in place to support researcher-participant rapport.
ARTICL:

Background: My research explores the link between medical student performance during undergraduate training and measures of patient care quality. This research will help understand how medical schools can combine medical education and patient outcomes data to improve patient wellbeing. This is a novel field with only limited prior research. This presents a challenge of understanding how to effectively plan this type of research and how to create a blueprint that can be followed elsewhere in medical education.

Summary of Work: Firstly, I established what medical education data I felt was important and feasible for the project. I compared these to the roles a newly qualified doctor has in contributing to the care and wellbeing of patients. Simultaneously I developed a philosophical approach at the beginning of my project to fully answer my research question in a clear and non-conflicting way. In this short communications presentation, I wish to share my own approach to overcoming the challenges in selecting a philosophy for medical education research. I share my own experiences of how a researchers views on reality, knowledge, education, and social interaction shape the design of their research.

Summary of Results: My journey of selecting a research philosophy began by selecting two opposing philosophical approaches, namely a positivist stance and a constructivist stance. Through further reading I established that my own views and interpretations of knowledge, reality and education lay somewhere between these two philosophies. Next, I wanted to ensure I was able to answer my research question effectively within a chosen philosophy.

Discussion and Conclusions: At this stage of my research, I have settled on a Critical Realist approach closely associated with the work of Roy Bhaskar. This presentation will give an insight to the rationale behind choosing a philosophy to set the foundational principles and appropriate philosophical lens to carry out this type of medical education research.

Take-home Messages: This short communications presentation will provide an insight to skills that can be used as a tool kit when selecting an appropriate theoretical perspective at the beginning of your research journey.
AUTHOR(S):
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Lucy Tague, East Kent Hospitals University NHS Foundation Trust, UK
Melissa Bowen, East Kent Hospitals University NHS Foundation Trust, UK
Philip Chan, Kent and Medway Medical School, UK

ABSTRACT:

Background: Participation in extra-curricular activities has been longstanding consideration of medical admission panels as an indication of non-academic qualities that may demonstrate suitability for medicine. They may also predict students subsequent performance on the medical course, and are frequently used in selection.

Summary of Work: Applicants were split into discussion groups of 6 people, with an external chair/facilitator, to discuss how participation in extra-curricular activities should be considered in medical school selection. Applicants were specifically asked to rank extra-curricular activities and create guidance notes for an admission panel. 35 minutes were allowed. Facilitators notes were consolidated and thematically analysed.

Summary of Results: Data was available from 3 facilitators notes, involving 126 applicants. Most groups developed lists of relevant values and skills that could be gained through extra-curricular activity. The most agreed value of an activity was gaining experience of team-work. Activities could also develop applicant skill in communication, time management, problem solving and leadership. Nearly all groups described the need to reflect upon the activity, particularly what relevant skills were gained. There was disagreement amongst applicants regarding the attainment of leadership skills and empathy.

Discussion and Conclusions: Applicants were quick to appreciate that ranking extra-curricular activities was a near-impossible task as no single activity was felt to be of more value than others. The need to reflect on what an applicant has learned and gained from participation in an activity and the importance of articulating this in personal statement and interview was present in all group discussions. It could be assumed that this may be a result of application training. Although groups were diverse, and respected the activities suggested by other group members, there was a notable lack of consideration of disadvantage on access to participation in activities. We believe that few candidates have overcome adversity in these areas and therefore did not or could not comment on the relevance of these issues.

Take-home Messages: Applicants appreciated the consideration of extra-curricular activities in application to medical school. However, it was interesting to note the differing views of learned and taught skills and the expectation of a medical school training to achieve sufficient development in these areas.
SCOD6.4: SCOD - Education Management – Selection

SCOD6.4.2 Are age, gender, language, ethnicity and socioeconomic status associated with Casper scores? Findings from a multicenter study in Quebec, Canada (8154)

AUTHOR(S):
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Sébastien Béland, Université de Montréal, Canada
Jean-Sébastien Renaud, Université Laval, Canada
Annie Ouellet, Université de Sherbrooke, Canada
Saleem Razack, McGill University, Canada
Xin Wei Yan, Altus Assessment, Canada

ABSTRACT:
Background: Casper is a situational judgment test widely used for selection in healthcare professions programs. Associations between sociodemographic characteristics and scores, which can impact diversity in admissions, were described in the USA. However, it remains unclear if these findings are generalizable or can be observed in other contexts. Therefore, this study aimed to assess subgroup performance differences for applicants in the province of Quebec, Canada.

Summary of Work: Sociodemographic data were collected using an exit-survey after Casper completion. Data from unique applicants to any of the four medical schools in Quebec were anonymized and linked with Casper z scores. A multiple regression model was created using backward stepwise regression.

Summary of Results: Of 5012 applicants who took Casper for the 2020 admission cycle, complete sociodemographic data was available for 3493 (69.7%). Among those, 17.3% were aged 26 or more, 61.8% were women, 55.9% self-identified as white and 4.1% as black, 36.4% declared a family income <75,000$ and 19.3% spoke a different language than French or English at home. In a regression model, age 26 or more (beta=-0.069; 95%CI -0.110;-0.028), male gender (beta=-0.064; 95%CI -0.105;-0.022), language other than French or English (beta=-0.102; 95%CI -0.136;-0.068), self-declared black race (beta=-0.116; 95%CI -0.177;-0.055) were associated with significantly lower scores. In an interaction term, other non-white applicants had lower scores only if aged 26 or more (beta=-0.125; -0.166;-0.084) or if their parental income was <75,000$ (beta=-0.066; 95%CI -0.120;-0.012). Parental education level and size of community where candidates grew up (rural vs. urban) were not associated with Casper scores.

Discussion and Conclusions: For the 2020 application cycle in Quebec, Casper scores presented subgroup differences related to gender, age, language, parental income, and ethnicity/race. These findings are in accordance with previously published studies and need to be monitored and compared to subgroup differences observed with other admission tools such as academic measures to inform selection methods. Further studies are required to understand why these performance differences occur.

Take-home Messages: Casper, a widely used situational judgment test, shows some associations with sociodemographic characteristics that need to be considered when developing admissions processes.
#SCOD6.4: SCOD - Education Management – Selection

# SCOD6.4.3 Adapting selection tools to language and culture: Examples from a German pilot study of Casper (8213)

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ABSTRACT:
Background: Selection tools for medical admission are usually developed in specific cultural contexts. When an established tool is adapted to a new language and culture, it is essential to retain its psychometric properties. We illustrate such an adaptation process through the example of Casper, an open-response online situational judgement test (SJT) mainly used in anglophone countries, and its piloting in Germany.

Summary of Work: Like Casper, the German adaptation consisted of twelve scenarios from the original question pool, carefully selected for the German context. All scenarios and related questions were translated to German and video scenarios were subtitled. We invited medical school applicants and students to voluntarily participate. Responses were rated by faculty members. Sociodemographic data and data from other admission tests were available via a central research database. We compared reliability, subgroup differences, and discriminant validity to previous findings from English-speaking countries.

Summary of Results: 395 individuals participated. Similar to the original version’s internal consistency (0.75≤α≤0.85), the adapted version’s mean internal consistency was 0.73. Native German speakers scored significantly better than non-native speakers with a large effect size (d=0.89). In comparison, mean performance differences between native and non-native English speakers in the original Casper are small (d=0.23). While the standard Casper version only shows negligible correlations to cognitive measures (e.g. GPA, MCAT), German CASPer scores were more related to GPA (r=.22) and subtests of logical reasoning of the TMS and HAM-Nat (.16≤r≤.33).

Discussion and Conclusions: While in the German pilot, internal consistency of Casper could be retained, subgroup differences for non-native speakers and relations to cognitive measures were more pronounced. Possible explanations might be procedural differences (scenario presentation mode, rater pool) or deeper cultural and language differences. In future research, the first explanation will be examined by reducing procedural differences between German and English studies.

Take-home Messages: Applying established selection tools to other cultural contexts offers an efficient way of introducing new test strategies. We recommend thoroughly checking content fit and empirically examining psychometric properties under comparable conditions to original studies before broad implementation.
SCOD - Education Management – Selection

SCOD6.4.4 A feasibility study of the first automated interview grounded in MMI methodology (8095)

AUTHOR(S):
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Angela Kubacki, St Georges University of London, UK
Drew Tarmey, Manchester University, UK
Paul Tiffin, University of York, UK

ABSTRACT:
Background: Global, Covid-driven restrictions around face-to-face interviews for healthcare student selection have forced admissions staff to rapidly adopt adapted online systems before supporting evidence is available. We have developed, what we believe is, the first fully automated interview-based assessment grounded in Multiple Mini-Interview (MMI) methodology. The system uses natural language processing to identify evidence of construct-relevant attributes and values from interview content, thus automatically deriving candidate scores. We report preliminary findings from a feasibility study evaluating the system for selecting applicants to healthcare courses.

Summary of Work: The system was administered to a sample of Physician Associate (PA) students. Volunteers took (T1), then repeated (T2), the automated MMI, with a seven-day interval (+/- 2) then completed an evaluation questionnaire. Admissions staff participated in focus group discussions. We assessed test re-test reliability using intra-class correlation (ICC) and acceptability and usability through descriptive statistics, thematic and content analysis.

Summary of Results: Sixty-two students and seven admission staff participated; 34 students and four staff from UK and 28 students and three staff from US universities. Good-excellent test-retest reliability was observed with T1 and T2 ICC between 0.62-0.81 (p<0.001) when assessed by individual total scores (range 80.6-119), station total scores 0.6-0.91, p<0.005, individual site (all ICC > 0.76 p<0.001) and mean test retest across sites 0.82 p<0.001 (95% CI 0.7-0.9). Admissions staff reported perceiving a substantial potential to reduce resource costs and bias via the use of a potentially more objective screening tool for pre-selection or to replace some face-to-face MMIs in a hybrid interview model. Maintaining some human interaction through touch points was considered essential. Users positively evaluated the system, stating it was intuitive with clear instructions and an accessible interface. Concepts chosen for dynamic probing needed to be appropriately tailored.

Discussion and Conclusions: These preliminary findings suggest that the system is reliable, generating consistent scores for candidates and is acceptable to end-users. Further research will focus on evaluating the validity of the automated scores generated against construct-relevant outcomes.

Take-home Messages: The potential of such an automated system to augment candidate selection was evidenced. The importance of ensuring complementary human input, through touch points was highlighted.
#SCOD6.4: SCOD - Education Management – Selection - MMI

# SCOD6.4.5 Does First Impression Predict Performance Ratings in Multiple Mini Interviews? (8297)

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ABSTRACT:
Background: The phenomenon of first impression is well researched in social psychology, but less so in the study of the Multiple Mini Interview (MMI) and other OSCE-like measures. To explore its bearing on the MMI method we included a rating of first impression in the MMI for student selection executed 2012 at the University Medical Center Hamburg-Eppendorf, Germany.
Summary of Work: We analyzed how an initial assessment of first impression was related to subsequent MMI performance ratings made (a) by the same rater, and (b) by a different rater. First impression was rated in response to the question: Does this applicant appear to be qualified for studying medicine?. Each MMI-task took 5 minutes to complete. Both variables, first impression and MMI performance rating, were used to predict a validity criterion: mean performance in two psychosocial OSCE-stations 18 months later.
Summary of Results: Internal consistency was $\alpha = .71$ for the first impression rating and $\alpha = .69$ for the MMI performance rating. First impression and MMI performance correlated by $r = .49$. Both measures weakly predicted performance in psychosocial OSCEs, used as a validity criterion. MMI performance did not increment prediction above the contribution of first impression and vice versa. Prediction was assessed in two ways: (1) first impression and MMI assessed by the same judge, and (2) first impression and MMI assessed by different judges. Prediction of psychosocial OSCEs was the same with both assessments.
Discussion and Conclusions: The correlation between first impression and MMI-performance is in line with results of social psychological studies showing that judgements based on minimal information often predict behavioral measures substantially. It is also in accordance with the notion that raters often blend their specific assessment task outlined in MMI-instructions with the self-imposed question of whether a candidate would fit the role of a medical doctor.
Take-home Messages: First impression in MMI-like measures cannot be considered simply a nuisance factor, to the contrary, it may contribute to validity.
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ABSTRACT:
Background: The National Medical Schools Widening Participation (WP) Forum started in 2015 to address disparities in undergraduate medicine in the UK. It includes over 20 medical schools and other stakeholders, and has a student subcommittee. This subcommittee aims to provide a national strategy for student societies involved in WP work. The student group delivered one-day conferences in 2018 and 2019, supported by the Medical Schools Council (MSC). The conferences highlight the work of WP student societies, enabling staff and students to share best practice. In 2020, cancellations of face to face events due to Covid-19 meant the team had to consider alternative options.

Summary of Work: The subcommittee created an online conference, a one week programme of daily sessions in November 2020. The sessions included WP student society work, and talks and workshops on student access, success and progression. Feedback forms collected short-form qualitative comments evaluating enjoyment and utility of the sessions.

Summary of Results: 88 people attended: 89% medical students and 11% doctors and academic staff. 65% of attendees self-identified as being from a WP background. Evaluation was overwhelmingly positive, with comments including: Really interesting hearing about the various WP initiatives, especially how they had started up from scratch. I really enjoyed being in a virtual room of like-minded people who all have similar aims and goals.

Discussion and Conclusions: Covid-19 threatens to widen existing inequalities in medical education. Strategies to counter this issue can mitigate this. This conference provided an opportunity for collaborative learning and working, and provides a model for other careers wishing to diversify their workforce. Future work could look at a dedicated conference for academic staff.

Take-home Messages: WP work must continue during Covid-19 to ensure inequalities do not worsen Online events are effective at continuing this work More work should be done to integrate WP work led by students with the wider academic landscape
#SCOD7.1: SCOD - Empathy

# SCOD7.1.1 Art-based Training in Clinical Observation and Empathy Skills for First Year Medical Students (9537)

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ABSTRACT:
Background: Clinical decisions are often made based on what a physician sees. However, it is very rare for trainees to receive formal teaching on clinical observation, or how to look. Recent studies have found that incorporating formal, visual arts observation training can improve learners observational skills. However, an evident gap in the empirical literature highlights the need to evaluate the impact of such training on clinical observation and empathy skills. This study aimed to explore the impact of art observation training on general observation skills, clinical observation skills, and empathy.

Summary of Work: Study participants (n=16) completed a pre-survey, where they rated their current observational skills and described six images: four clinical images (e.g., a skin lesion), one artwork, and one interpersonal image of individuals in the clinical environment. Participants completed four art observation sessions, 1.5-hour each, at a local art gallery, followed by a post-program survey. The post-program survey was similar to the pre-survey, with the addition of open-ended questions on their experiences. Image descriptions were marked by two raters using predefined rubrics (e.g., Wald et al., 2012). Pre- and post-program scores were compared using a one-way repeated measures analysis of variance. Narrative feedback was analysed using qualitative content analysis.

Summary of Results: The results suggested raters scores were significantly correlated (ps < .02). Amongst pre-post scores, a statistically significant main effect of time [F(1, 9) = 6.449; p =.032], measure [art, clinical, interpersonal image; F(5, 23.36) = 4.043; p =.023], and time by measure interaction [F(5, 22.49) =10.37; p < .001] were identified. Narrative comments suggested that the program was enjoyable, improved participants observational skills, increased awareness of biases, and highlighted connections between art and medicine.

Discussion and Conclusions: These results suggest that art observation programs may be a novel approach to improving art observation, clinical observation, and empathy skills amongst medical trainees. Future work should continue to explore how to formally incorporate such programs into medical training, and their impact on clinical skills.

Take-home Messages: Art observation programs offer a novel method for improving observational skills and may help medical trainees recognize biases, assess body language, and empathize with others.
#SCOD7.1: SCOD - Empathy

# SCOD7.1.2 Survey of Medical Student Empathy at a Canadian Medical School (7610)

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ABSTRACT:

Background: Within a medical context, empathy is defined as an appropriate understanding and communication of a patient's experience. While it has been established that empathy is an important quality to have as a future doctor, studies have shown that empathy in medical students declines during their clinical years. However, there are no studies to date that evaluate medical student empathy in Canada. Therefore, we aimed to evaluate medical student empathy at McGill University Medical School using the Jefferson Scale of Empathy (JSE).

Summary of Work: This study evaluated medical student empathy scores at McGill University. The goal of the study was to assess differences in empathy based on gender, age, specialty of interest and year in medical school. While gender, age, and desired specialty did not result in significant differences, year in medical school did - specifically, we found a difference in empathy score between Med-2 and Med-3.

Summary of Results: A total of 133 students from all 4 years responded, proportionate across each year. Differences in mean questionnaire were not statistically significant for gender (p=0.364), age (p=0.2746) or specialty interest (p=0.436). The ANOVA for differences in year of medical school was significant (p=0.0104). Between groups analysis revealed a statistically significant decrease between Med-2 empathy scores (average score 117.6) and Med-3 (107.5), p<0.01.

Discussion and Conclusions: The results mirror findings in other studies, where students seem to experience a drop in empathy as they begin clinical training. This study helped us understand the change in empathy during medical school according to year, age, gender, and desired specialty after graduation at a Canadian medical school. Our study found a significant decline in empathy between the second and third years of medical school. It is unclear what factors into this decline, however further research with greater participation and qualitative data will help us in order to potentially adapt the medical curriculum.

Take-home Messages: Empathy is an important quality in a physician. Our statistical analysis determined that medical students empathy declines between the second and third year of medical school in a Canadian context. This information can help us target changes in the medical curriculum to preserve empathy in students, and prevent this decline.
ABSTRACT:

Background: In the light of the social accountability of medical schools, teaching clinical empathy to medical students lies in the center of improving the health outcomes of patients and communities. Thus, through our study, we aimed to compare the level of empathy among medical students and their perception and perspective of addressing clinical empathy in the medical curriculum.

Summary of Work: We addressed a self-reporting questionnaire to medical students from the first through the sixth year of medical education at the Faculty of Medicine and Pharmacy of Casablanca. It comprised two main sections, in addition to their sociodemographic characteristics. The first section consisted of the medical students version of the Jefferson Scale of Physicians Empathy (JSPEMS), while the second section was composed of 7 items to analyze the students perception and perspective of addressing empathy in the curriculum. This latter was based on the AMEE guide on curriculum mapping and the CanMEDs competency framework.

Summary of Results: The average JSPEMS score was 108.52 (13.51) for a total of 442 respondents. Participants who identified as women or chosen people-oriented careers have had significantly higher empathy scores. No significant association was found with the year of study. The majority were in favor of addressing empathy through simulation courses and clinical training, whether at the community level or university hospital.

Discussion and Conclusions: The steadiness of the level of empathy among medical students from different years of study suggest the influence of the early exposure to patientcare in our curriculum. Nevertheless, students have expressed a motivation to reform the curriculum so as to acquire empathy related competencies, through the inclusion of simulation-based teaching and competency-driven assessment, such as OSCEs.

Take-home Messages: Thanks to the validity of the JSPEMS in our context, it is recommended for further studies to analyze the dynamics of the level of empathy through educational interventions. Moreover, student-centerdness is important to identify which curricular framework will engage best medical students in the learning experience.
#SCOD7.1: SCOD - Empathy

# SCOD7.1.4 Can an early exposure to family practice improve medical students’ empathy? (8733)

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ABSTRACT:
Background: Half of French medical students will become general practitioners. Many patients are never admitted to a hospital in their lifetime. Students have rotations in university hospitals beginning in their third year of medical school, but they rotate only later in general practice. Empathy is key to doctor-patient relationship and students develop this competency mostly during rotations. As it is a teaching challenge for medical schools, the aim of this study was to identify if an early exposure to primary care improves medical students empathy.

Summary of Work: Since 2018, second year students from the Lyon Est Faculty of medicine must complete a 2.5 days rotation in general practice. An empathy questionnaire will be sent by e-mail to all second- and third-year students in May 2021. Due to the sanitary situation, only half of the students will have completed the rotation. Students who have not completed the rotation will serve as control group when comparing questionnaire scores.

Summary of Results: We expect to find higher empathy scores among students who have completed the primary care rotation, compared to students who have not. We expect to define which areas of empathy are improved after this rotation.

Discussion and Conclusions: This early family medicine rotation remains experimental in France, our study is therefore original. One of its main limits will be a selection bias of students choosing to respond the questionnaire. We expect our results to add to the already identified benefits of this early rotation in general practice. We intend to carry on monitoring students empathy to understand the complexity of its variations during medical school and the impact of their second GP rotation in 5th or 6th year.

Take-home Messages: An early exposure to primary care is expected to improve students empathy, questioning the place for GP rotations in the undergraduate medical curriculum.
#SCOD7.1: SCOD - Empathy

# SCOD7.1.5 Adaptation and Validation of the Interpersonal Reactivity Index for medical students (9127)

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ABSTRACT:
Background: Interpersonal Reactivity Index (IRI) and Jefferson Scale of Physician Empathy for students (JSPE-S) are the most common empathy measuring instruments used in medical students. With its four subscales, IRI is designed to measure the multi-dimensional aspects of empathy in the general adult population. This study aims to develop and validate a modified version of IRI for medical students whilst maintaining its original essence.

Summary of Work: 1,293 medical students from 40 medical schools in South Korea participated in an online questionnaire consisting of 48 items; 28 from IRI and 20 from JSPE-S. Exploratory factor analysis (EFA) with promax rotation and maximum likelihood estimation method was applied to extract the factors of the modified tool which we have named IRI for medical students (IRI-MS). Rasch model was used to validate the EFA results. Reliability was tested using McDonalds Omega.

Summary of Results: The newly named IRI-MS (IRI for medical students) consisted of 20 items in four subscales: empathic concern (EC), fictitious situation (FS), perspective taking (PT), and personal distress (PD). EFA contributed to 43.39% of the total variance. A good model fit was shown through a Kaiser-Meyer-Olkin test (KMO=0.867), and the Bartlett test was significant. Rasch model confirmed acceptable validity and reliability as all items were in the range of adequate goodness-of-fit. Entire IRI-MS, FS and PD showed suitable item reliability, meanwhile EC and PT showed close to suitable item reliability. McDonalds Omega suggest that EC, FS, and PT are able to reliably differentiate between the high and low scoring students.

Discussion and Conclusions: IRI-MS is an instrument with acceptable validity and modest reliability to measure the multidimensional and complex nature of empathy in medical students. Five-point Likert scale items in IRI-MS were sufficient to measure empathy levels of medical students by identifying the latent characteristics of each item which was intended to measure. The robust validation process by various psychometric analysis and meticulous interpretations on socio-cultural and language differences conducted in this study may help those who wish to conduct similar studies in the future.

Take-home Messages: IRI-MS could be used to measure the multidimensional and complex nature of empathy in medical students
#SCOD7.1: SCOD - Empathy

# SCOD7.1.6 Nurturing Empathy in New Medical Professionals through Service Learning – A Mixed Study (7924)

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ABSTRACT:
Background: For decades, empathy has been viewed as an element of medical professionalism. Previous research showed a decline in empathy during the clinical phase of medical education. To cultivate empathy, service learning, such as serving the poor, has been an effective method for medical and nursing students. However, there is limited research on the relationship between empathy and service-learning for new doctors and nurses.

Summary of Work: We organized a newcomer camp in Taipei Tzu Chi Hospital to nurture new medical professionals empathy through service-learning. These new doctors and nurses experienced a mixture of didactics, role modeling, experiential learning, and reflective practice in the camp. Their empathy was measured using the Jefferson Scale of Empathy (JSE) before and after the camp's service-learning part. To understand how these newcomers learn from this service and cultivate their empathy, we collected their responses to three open-ended questions in the reflective journals were collected and analyzed by two researchers using a thematic analysis approach.

Summary of Results: In September 2020, 20 new resident physicians and 96 new nurses joined the newcomer camp. Our study showed improved empathy in both residents (scores: 115.9±15.2 versus 123.0±11.6, p<.05) and nurses (scores: 114.2±14.5 versus 121.5±14.0, p<.001) after the service-learning. The thematic analysis results of their reflective journals were shown as follows. Most participants identified social inequity and developed perspective-taking ability soon after they knew the case to be served. The role models who had served the poor helped cultivate the participants' unselfishness. In the experiential learning part of the service, the participants would develop affective empathy and be filled with hope. The participants later formed the ideas of altruistic motivation when reflecting on themselves.

Discussion and Conclusions: This study found that medical professionals can cultivate empathy, including perspective-taking and affective empathy, through service-learning. Based on our findings, role modeling, experiential learning, and reflections are essential components of service learning to improve the participants' empathy.

Take-home Messages: A well-designed service-learning experience can enhance the new medical professionals' empathy toward the poor and better prepare them for clinical practice.
#SCOD8.1: SCOD - Faculty Development

# SCOD8.1.1 Identifying and communicating the actual value of our work via a Theory of Impact: Stories from the field of education scholarship (8694)

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ABSTRACT:
Background: Evaluating the impact of education efforts often focuses on the measurement of planned outcomes (1). Within complex systems, the true value of our work is often a composite of what we plan to achieve and how our work brings value in ways that could not have been predetermined. Yet, our methods of evaluating typically do not capture emergent outcomes. Evaluation practices can be leveraged to better understand how our interventions work within context to achieve both planned and emergent outcomes. This presentation will illustrate the value and iterative nature of articulating a Theory of Impact for the evaluation of both outcomes. We will provide an overview of the theory-building process, discuss how storyboarding is a promising approach to communicate the Theory of Impact and argue that a Theory of Impact that is iterative is best to maximize utility of information.

Summary of Work: The Office of Education Scholarship (OES) was established to nurture faculty to engage in and lead education scholarship at the University of Toronto. We developed an evaluation strategy that asked faculty two questions: 1) what was the most significant change from engaging with the OES? 2) how did working with the OES enable these changes to occur? We answered these questions and generated a Theory of Impact (2) for the OES.

Summary of Results: The OES identified several key moments in its evolution where the value of the evaluation process and its inclusion of emergent outcomes was uncovered. Underlying mechanisms were identified and a Theory of Impact was generated. The Theory of Impact illuminated a cultural shift in education scholarship knowledge and practice through relationships between faculty, scientists and education leaders. To help communicate these findings, a storyboard was generated as a knowledge dissemination strategy.

Discussion and Conclusions: Evaluation practices can be leveraged to better understand how our interventions work within context to achieve both planned and emergent outcomes. The programs impact theory is an invaluable tool to aid leaders in making key programmatic decisions.

Take-home Messages: 1) The full value of your education scholarship work can be illuminated through a Theory of Impact, 2) Storyboarding is an innovative and accessible way to talk about program processes
ABSTRACT:
Background: Coaching is gaining momentum as a mechanism to support learner development across the continuum of health professions education (HPE). Yet, little is known about coaching in this context, despite a recent literature review of coaching in medical education (Lovell, 2018). This includes how we define coaching and how this differs from mentoring, which is complicated by the interchangeable use of these terms. This ambiguity is problematic and can result in ad hoc coaching approaches that are not informed by the evidence of best practice.

Summary of Work: This scoping study sought to extend Lovell’s (2018) coaching review to the broader HPE context. Specifically, we sought to understand: What is known about coaching and how is this concept defined in the HPE literature? Because of the complex nature of coaching, coupled with our broad research question, the literature review was guided by Arksey and O’Malley’s (2005) methodological framework and informed by other authors recommendations for conducting scoping studies (e.g., Thomas et al., 2019). A comprehensive search was conducted across five databases (Medline, Embase, CINAHL, Scopus and ERIC) to identify citations related to coaching in HPE. Key search terms included coaching, mentoring, learning, goal setting, and health professions education. Citations were limited to those published in English, but were not limited by citation type (e.g., empirical research), as is consistent with scoping study methodology.

Summary of Results: Of the 956 unique citations identified, 312 underwent title and abstract screening and 62 citations were selected for full text screening (currently underway). As is consistent with subjectivist approaches to scoping studies, inclusion/exclusion criteria are being iteratively developed through discussion with research team members. The key findings will be reported during the presentation.

Discussion and Conclusions: This scoping study is intended to further develop our understanding of coaching in HPE. It also seeks to establish clarity around possible definitions of coaching in this context.

Take-home Messages: This scoping study seeks to map the coaching literature in HPE. The findings suggest that coaching is a complex and burgeoning area of HPE research, with opportunities for enhancing definitional clarity and identifying future research directions.
#SCOD8.1: SCOD - Faculty Development

# SCOD8.1.3 Oral Presentation Skills Development in the Foundational Science Curriculum (7930)

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Era Buck, University of Texas Medical Branch, USA
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ABSTRACT:
Background: Strong communication skills are essential in healthcare. In addition to communicating with patients, physicians must be able to communicate patient information with colleagues efficiently and succinctly. Novice medical students begin to learn this skill through the oral patient presentation. Although addressed in our pre-clerkship curriculum, our observations during the clerkships suggested that students needed more practice and feedback on this skill prior to beginning their clinical rotations. We describe our approach to enhancing oral presentation (OP) skill training and additional lessons learned.

Summary of Work: Our Year 1-2 curriculum uses problem-based learning (PBL) for foundational science training. Each PBL case is spaced over two or three sessions. Previously we had recommended starting day 2 or 3 with an OP covering the patients medical history, physical exam and lab data as presented in earlier PBL sessions. This was not occurring consistently, in part because many of the PBL small groups facilitators are basic science faculty unfamiliar with the appropriate content and structure of OPs. Using a template, we extracted relevant data from each PBL case and developed an OP guide. Guides were provided along with the facilitator notes for each PBL case.

Summary of Results: Course directors review guides during case previews and answer questions as needed. Consistent reinforcement by curriculum leadership has been important to engage the PBL facilitators to include OP practice. Students appreciate the focused OP training and feedback; the OP also allows review of case information. Development of the OP guides has exposed content deficits in some PBL cases. Feedback to course directors has allowed enhancement of educational materials.

Discussion and Conclusions: Providing a content guide and brief training on the oral case presentation has allowed PBL facilitators to engage students more consistently in OP practice. This takes only a few minutes at the start of the session yet reinforces this important clinical skill. Feedback to the courses on PBL content has been an unintended benefit of this process.
#SCOD8.1: SCOD - Faculty Development

# SCOD8.1.4 First insights into Faculty Engagement in Medical Teachers in Venezuela (7475)

AUTHOR(S):
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ABSTRACT:
Background: Faculty Engagement (FE) and Work engagement (WE) are brother concepts that are receiving growing attention from academics and managers, as they have been proven to influence teacher and employee performance and consequently, contribute to sustain a positive work-life and enhance organizational goals. WE on Health Professionals Education is a crucial research field because of its relevance to any society.

Summary of Work: This analytical paper aims to understand better faculty engagement in medical teachers, measuring work engagement through the UWES-15 survey, in teachers of Luis Razetti School of Medicine (LRSM) at Universidad Central de Venezuela.

Summary of Results: The hypothesis stating that work engagement levels were high on teachers of LRSM, was demonstrated. The participants showed higher mean scores in all dimensions of Work Engagement, compared to the control group. The dimension in which this group of teachers performed higher was Absorption.

Discussion and Conclusions: Faculty engagement seems to perform differently in this particular setting. These findings support Self-determination Theory, whereas teachers with high-work engagement show internal locus of causality and act independently from organizational determinants of Work Engagement. Understanding the factors that play a role in faculty engagement in medical teachers may assist in the development of strategies to attract, retain, and inspire them in this crucial role for society.

Take-home Messages: Directing strategies aiming at the teachers and employees growth in the education context can definitively nurture the learning environment for all, and finally, improve the education outcomes and social accountability of Universities.
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ABSTRACT:
Background: Professional identities are required in developing professionalism. Having a professional identity means acquiring the understanding of the knowledge, skills and values of a profession. However, most medical teachers still identify themselves as clinicians or researchers. One of the underlying reasons is better recognition towards this profession, such as clear career pathway. Nevertheless, developing professional identity as medical teachers is important for wellbeing and productivity. Therefore, this study aims to explore the integration of professional identity as teachers in clinical teaching staff of a relatively new medical school.

Summary of Work: This study is a qualitative study employing three focus group discussions and 13 in-depth interviews. The participants were clinical teachers who were selected using a maximum variety sampling strategy based on the length of working experience, gender, specific educational roles, and the clinical department.

Summary of Results: This study identified three narratives used by the participants to integrate the professional identity as a clinical teacher into their existing identity, and also the influencing factors. These narratives were coalition of professional identity as clinical teacher and clinician, holding onto professional identity as clinician, and meta-position.

Discussion and Conclusions: The identified narratives demonstrate an ever-changing process depending on how clinical teachers make meaning of their experiences. Recognition of the teaching roles and the impact of becoming a clinical teacher play important roles in the integration process. Teachers with good internal motivation to teach, but do not get the deserved recognition from institution tend to holding onto professional identity as clinician. Meanwhile, those who are able to integrate their professional identity as teacher mostly experience the positive impact of teaching. Therefore, institution needs to develop a supportive community of practice as social support allowing the clinical teachers to feel welcomed in teaching community and share their teaching experiences to one another.

Take-home Messages: It is important for medical school to provide a supportive community of practice for the clinical teachers. Recognition of teaching role is needed the most. Furthermore, since teaching give positive impact to the clinical teachers, opportunity to teach is an important factor in developing teacher professional identify.
AUTHOR(S):  
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Fereshteh Bagheri, International Federation of Medical Students Associations, Iran  
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ABSTRACT:  
Background: The International Federation of Medical Students Associations (IFMSA) has been advocating since 1958 for quality medical education, and through the years patient-centered education has shown its effectiveness. Therefore, for this term, the Standing Committee on Medical Education (SCOME) focused its work on Patients Involvement in Medical Education (PIME). A topic that dismissed the preconceived idea that a patient can only play a passive role in medical education and led faculties to engage patients in several aspects such as teaching, assessment, curriculum development, and students selection. IFMSA considers it a responsibility to promote this issue among students and assess their perspective towards it.  
Summary of Work: IFMSA has been working on PIME from multiple levels, the current work is focused on collecting data from a Global Assessment as well as a Student Toolkit on the perspective of medical students worldwide and Patient Involvement within their faculties. The Global Assessment was shared widely in order to have the highest outreach. Additionally, a toolkit is under preparation to provide necessary skills and information for our members, and to promote the topic locally. Regionally, PIME is a priority for the Eastern Mediterranean Region and will be the focus of a campaign in May, alongside a global campaign spearheaded internationally in September engaging our members.  
Summary of Results: Results will be analyzed in the period March - April and ready for presentation at AMEE2021 in August.  
Discussion and Conclusions: Besides meeting the patients needs, through Meaningful Patient Involvement we can ensure a better biopsychosocial understanding for students. The objective of the different activities mentioned above is to raise healthcare students awareness on the importance and the different aspects of PIME. Thus, leading to collaborative efforts and advocacy, highlighting students and patients perspectives and respecting both quality education and medication. This can not be met without enhancing and maximizing students and patients engagement while increasing and diversifying their encounters. The ultimate goal of IFMSA is to accomplish, through this, dual student and patient-centered medical education.  
Take-home Messages: By analyzing the students perspective and knowledge on PIME, we can move one step forward in advocating for its implementation thus one step towards more patients safety.
#SCOD9.1: SCOD - Patient Safety

# SCOD9.1.2 Immersive virtual reality (VR) trainings increase the self-efficacy of in-hospital healthcare providers about tracheostomy-related knowledge and care skills: A prospective pre-post study (8111)

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**ABSTRACT:**

**Background:** Virtual reality (VR)-based simulation in hospital settings facilitate the acquisition of skills without compromising patient safety. Although with regular text-based training, a baseline survey of randomly selected healthcare providers revealed deficiencies in their knowledge, confidence, comfort and care skills about tracheostomy. In order to improve the self-efficacy of trained skills, satisfaction of training and transfer the learnt skills of participants, we developed VR materials and implemented them regularly in trainings.

**Summary of Work:** Between January 2018 and January 2020, 60 physicians, nurses and respiratory therapists were enrolled. For the intervention, head-mounted display (HMD) and web-VR materials were developed and implemented separately in training and clinical services. Subsequently, healthcare providers were trained through either text or HMD-VR materials in the regular or intervention modules, respectively. Serially, trainees satisfaction, self-efficacy, and degree of application of web VR were evaluated.

**Summary of Results:** For the tracheostomy care skills, the preceptor directly audited the performances of the trainees and gave feedback. At follow-up stage, compared with the regular group, a higher percentage of intervention group trainees reported that they are strongly agree or somewhat agree that the HMD -VR simulation increases their self-efficacy, including the aspects of familiarity and confidence, and reduced their anxiety about tracheostomy-related knowledge and care skills. The increasing trend of the average written test scores among the intervention group trainees were significant than those in the regular group.

**Discussion and Conclusions:** After implementation, higher degree of trainees average satisfaction to the VR-based trainings and VR materials was observed in the intervention group than in the regular group. Most of them reported that the VR materials enabled accurate messaging and decreased their anxiety. The benefits of HMD-VR simulations and web-VR materials-based clinical service for healthcare providers were persisted until 3-4 weeks later.

**Take-home Messages:** This VR intervention module achieved the the Kirkpatrick Level 1 that trainees who underwent the VR training were satisfied with the trainings and materials; the achievement of the level 2 (earning) that interventional trainings increases trainees tracheostomy-related knowledge and care skills; the achievement of the level 3 (behavior) that the intervention group trainees applied the acquired knowledge and skills in clinical practice.
SCOD9.1: SCOD - Patient Safety

SCOD9.1.3 Improving the lumbar puncture pathway in a district general hospital: The use of a simulation based mastery learning programme as part of quality improvement (8696)

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ABSTRACT:
Background: Atraumatic needles for lumbar puncture (LP) performance have been established as best practice to reduce the risk of post-dural puncture headache. Forth Valley Royal Hospital embarked on a project to introduce atraumatic needles as standard practice and improve asepsis during LP performance. Despite great effort, the desired change in practice had not occurred. From October 2020 and ongoing, we used quality improvement tools to establish the challenges that had prevented this and aimed to find solutions.

Summary of Work: Following initial process mapping with stakeholders, we established challenges in equipment procurement, equipment access, and lack of training with atraumatic needles and asepsis for LP. A survey of 32 doctors in training (DIT) explored self-reported issues around culture and training experience. The first solution identified was the introduction of a simulation based mastery learning programme (SBML) for LP. A pilot session with 5 DITs gathered self-reported pre and post-intervention data. Programme delivery and evaluation is ongoing. A retrospective review of LP procedure documentation is also underway.

Summary of Results: The DIT survey showed 51.6% had been observed by a colleague as the method of training. Written consent for an LP is the gold standard, yet 55% reported getting verbal consent. Only 16.7% reported using an atraumatic needle and 1 listed the full PPE required for a sterile procedure. Regarding delay in timely LPs, responses of inexperienced juniors and little access to formal training and finding equipment stood out. A pilot with 5 DITs showed that all attained the minimum passing competency to perform a supervised LP, and knowledge around PPE and consent improved significantly.

Discussion and Conclusions: SBML has a robust evidence base with translational outcomes; as an intervention it has been shown to be wanted, feasible and improves clinician competence. SBML, alongside other interventions around equipment access, will likely have downstream effects on patient safety.

Take-home Messages: SBML for clinical skills is a high quality, evidence-based approach which is feasible.
#SCOD9.1: SCOD - Patient Safety

# SCOD9.1.4 Applying a Metacognitive Mnemonic To Mitigate Cognitive Biases in Clinical Decision Making (7861)

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**ABSTRACT:**

**Background:** Defined as ones deviations from rationality, cognitive biases can predispose a clinician to commit diagnostic errors. TWED checklist is a 4-item checklist purported to encapsulate 6 categories of common cognitive biases in clinical setting, where the item T = Threat, W = Wrong/What else?, E = Evidences, and D = Dispositional factors (and these can be divided further into 2 Es-- E = Environmental influences and E = Emotional influences). This 3-part project was designed to evaluate the effectiveness of TWED checklist in supporting the differential diagnoses generation (script activation stage) and differential diagnoses evaluation (script evaluation stage) in a classroom setting as well as its usefulness in a real clinical setting.

**Summary of Work:** A set of five case scenarios, designed to embed subtle cues that point to the likelihood more of urgent diagnoses was used to answer the first research question. To answer the second research question, script concordance test was used. To answer the third research question, Nielsens usability metric was adapted as the conceptual framework and Pentlands narrative network was used to map out the various ways that this checklist can be implemented in daily clinical routine.

**Summary of Results:** TWED checklist was shown to have some beneficial effect in facilitating metacognition during the script activation and script evaluation stages although in the script evaluation stage, this beneficial effect seemed to have been traded off by the time and effort in using it. In real clinical setting, TWED checklist was perceived as an easy-to-learn, pleasant-to-use, effective tool that can be implemented seamlessly. Not all items in the checklist can be applied in the same manner and/or with the same frequency.

**Discussion and Conclusions:** The benefit of TWED checklist is thought to be due to the theoretical notion that by slowing down and reflecting on ones actions as prompted by the questions in the checklist, one is more likely to pick up and evaluate more nuanced alternative diagnoses.

**Take-home Messages:** The TWED checklist may mitigate cognitive biases to reduce diagnostic error and improve patient safety. However, it should not be used in isolation, but rather, as an adjunct together with other cognitive aids, tools and guidelines.
ABSTRACT:
Background: International student mobilities tend to change the global medical education landscape by preparing future medical professionals with skills to operate within different health systems in the world. While students move internationally, not just for tertiary studies but for a large integration of international and intercultural perspectives, many studies addressed the ethical dilemma that might be faced by those students while performing or observing medicine abroad.

Summary of Work: The Standing Committee on Professional Exchange (SCOPE) International Team has performed a detailed analysis of the data collected through a previous survey on the academic competencies of our program (summing 231 responses). Through this analysis we studied the impact of the Ethics Pre-Departure training (PDT) manual created by IFMSA in collaboration with UNESCO. The data collection and analysis processes were organised by the International Team members who assessed the impact of this manual on students vision on ethics. This evaluation was addressed by the following question in the assessment for this manual: How much do you think your exchange helped you improve Work ethics? categorizing the answers from 1 - Minimally/much worse, 2 - No change, 3 - Minimally improved, 4 - Much improved, 5 - Very much improved.

Summary of Results: Based on the assessment performed, we've seen the vast majority stating improvements in their ethical performance after their exchange, from very much improved (43.2%) to minimally improved (13.4%), while a small percentage showed no change (7.3%) or a worse performance (0.04%).

Discussion and Conclusions: The IFMSA manual on Ethics pre-departure training used by the exchange officers had achieved its purpose in tackling ethical dilemmas within international medical mobilities, establishing a development ground for the future medical professionals.

Take-home Messages: For the mobility programs, we recommend to have standardized regulations for what medical students should be trained on before performing their medical mobilities abroad, in order to avoid ethical dilemmas and to refrain from endangering patients and affecting the health system of the hosting country.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.1 Educational supervision in residents training in internal medicine – a scoping review (8926)

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ABSTRACT:
Background: Supervision is considered an important part of residents’ training, yet the scope of supervision and how it relates to other types of support such as mentoring, precepting and feedback remains unclear. (Kilminster et al, 2007). Clinical supervision and educational supervision can be viewed as two distinct types of supervision: While clinical supervision describes on-going instructions and feedback in the workplace setting, educational supervision is a formalized component of postgraduate medical education and supports the process that facilitates a trainee’s progression throughout their training (Patel 2016). There are different supervisory traditions between the medical disciplines such as medicine, surgery and psychiatry. This study focuses on educational supervision in internal medicine.

Summary of Work: Based on Arskey’s and O'Mally’s six-step framework (2005), modified by Levac et. al (2010), we conducted a scoping review of literature on educational supervision in residency training in internal medicine to identify knowledge gaps. The literature search was performed in these databases; Medline, Embase, Web of Science and ERIC and we followed the guidelines of PRISMA for systematic research. Our aim was to investigate the importance of educational supervision and how it was conducted for residents training in internal medicine.

Summary of Results: Based on our inclusion criteria approximately 111 out of 2654 articles were included in the first screening process. A preliminary review based on title and abstracts of these articles, describe residents views on educational supervision and how educational supervision is planned as a part of the residency program activities. We find few empirical studies describing how educational supervision is conducted and what effects routine educational supervision have on residents learning.

Discussion and Conclusions: Our preliminary findings suggest that the distinction between clinical supervision and educational supervision is not clearly defined in the research literature. A better clarification of the definitions and the concepts of educational supervision would be beneficial.

Take-home Messages: This study may indicate that the term supervision is used as a quality criterion without a clear definition of its content or the effect it has in the educational process.
Evaluating the quality of narrative comments in psychiatry: Just because we use them more doesn’t mean we’re better! (7775)

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ABSTRACT:
Background: Narrative comments have become increasingly important in medical education as programs shift towards competency-based medical education (CBME). Narrative comments help competence committees contextualize learner performance and make judgments about their competence. Prior research has suggested that the quality of narrative comments can be variable. Two new tools for assessing narrative comments have recently been developed but have not yet been applied to contexts outside of surgery. In this study, we aimed to use both tools to assess the quality of narrative comments provided to psychiatry residents.

Summary of Work: All residents PGY2-5 (N=40) in the McMaster Postgraduate Psychiatry were invited to have in-training assessment reports (ITARs) completed between July 2018 and 2019 used as part of this study. After narrative comment extraction and identification, two independent coders rated each comment using two pre-existing tools: the McMaster Narrative Comment Rating System (MNCRS) and the Quality of Assessment of Learning (QuAL) Score. Ratings were summarized using descriptive statistics and inter-rater reliability was calculated using intraclass correlation coefficients.

Summary of Results: Thirteen of 40 eligible psychiatry residents consented to participate, resulting in 30 ITARs and 146 narrative comments for analysis. Using the MNCRS, the overall quality of the comments was rated as fair. Comments had a slightly positive valence and reinforcing content but were less specific and actionable in description. Using the QuAL tool, most comments did not link suggestions to a described behaviour. Inter-rater reliability was good to excellent in all but two categories.

Discussion and Conclusions: These results are somewhat surprising and potentially concerning in the discipline of psychiatry where descriptive qualifiers are common in a clinical context. Additionally, the data are shaped by the specific assessment form, which can affect the quality of narratives. The ownership of the evaluation data is somewhat ambiguous, potentially promoting evaluations that avoid specificity.

Take-home Messages: Given the novelty of the narrative comment rating tools used in this study, the results provide some useful insights about their operationalization and application in medical education. This study also speaks to the need for faculty development in the provision of meaningful and actionable narrative feedback in the era of CBME.
#SCOD10.1: SCOD - Postgraduate Education

**SCOD10.1.3 A mobile application to support entrustment decisions stimulates meaningful feedback in anesthesiology training (9502)**

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**ABSTRACT:**  
Background: Entrustment decisions are usually based on workplace-based assessments (WBA). WBAs require considerable time, are often provided in less authentic clinical situations, and thus may be perceived less meaningful.  
Summary of Work: To address these weaknesses, we designed a mobile application (prEPAred App) to be used in the workplace for assessing and discussing the level of supervision (LoS) with anaesthesiology trainees directly after the task. We aimed at shortening the time of single assessments while increasing their total number. Trainees and supervisors independently rated the complexity of the task and the proposed LoS, based on the actual performance. Subsequently, the immediate comparison of the results may trigger an optional feedback conversation. The App was tested on a voluntary basis over one year in six anesthesia departments. We collected data on usage patterns, on acceptance, and on the quality of feedback provided via the App (classified as reassurance, unspecific learning goals, specific learning goals).  
Summary of Results: We recorded 1518 full datasets with a range of 1-60 assessments (mean 9.5) per trainee, and of 1-387 assessments (mean: 17.1) per supervisor. Median time for a complete rating of the LoS was 56s for trainees (IQR: 39s - 85s) and 17s for supervisors (IQR: 11s - 30s). The median time for feedback was 151s (IQR: 80s - 310s). Electronic feedback via the App was started in 767 cases (50.5%); in 89 cases (5.9%) the resulting learning goal was reassuring, in 152 cases (9.4%) it contained unspecific learning goals, and in 443 cases (29%) specific learning goals. Disagreement in ratings between trainees and supervisors increased the odds of documenting a learning goal. Acceptance of the prEPAred App was good to excellent for 95% of the trainees, and 78% of the supervisors.  
Discussion and Conclusions: Our app facilitates efficient real-time rating of LoS at the workplace. In more than 50% of cases the App triggered a feedback conversation, specific learning goals were provided in 29%. Thereby, the App improved flexibility and meaningfulness of WBA.  
Take-home Messages: We developed a mobile application for discussing the level of supervision at the workplace to support entrustment decisions.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.4 The use of Biannual Multi-format In-Training Examination in an Emergency Medicine Residency Training Program: a Four-Year Longitudinal Validation (8754)

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ABSTRACT:
Background: Residency is a period when undifferentiated young doctors transform into specialists. Learning during this time is characterized by hands-on clinical learning. During residency, periodic performance assessments, which facilitate identifying strengths and weaknesses and ensuring program quality, are essential in the era of competency-based education. This study aimed to longitudinally validate a multi-station, multi-format bi-annual in-training examination (ITE) project in an emergency medicine (EM) residency training program.

Summary of Work: This is a four-year cohort study conducted in a 3600-bed tertiary teaching hospital. Nine residents who were admitted to the program in 2015 were enrolled since the first year of residency. Their performances on six rounds of bi-annual ITEs and their final EM board exam results were collected. Each round of ITE contained 8-10 stations of different topics or skill domains. All stations were categorized into one of the four formats: multiple-choice question written tests (MCQ), timed stations with questions and answers (QA), oral examination (OE), and high-fidelity simulation (HFS). Overall and individual reliability, as well as correlations between ITEs and board exam results, were calculated. Learners perceptions and costs were also analyzed.

Summary of Results: A total of 486 station marks were prospectively collected. It consists of 45 MCQ, 198 QA, 90 OE, and 135 HFS marks. The Cronbachs alphas for the forms of MCQ, QA, OE, and HFS stations were 0.44, 0.93, 0.85, and 0.90, respectively. The overall reliability of the whole ITE project reached an alpha value of 0.968. HFS yields the highest correlation with board exam results ($\rho=0.66$) and the participants best feedback comments. Further qualitative data will be presented at the conference. The average costs of an OE and an HFS were approximately four and six times the QA stations cost.

Discussion and Conclusions: Multi-dimensional assessment contributes to good reliability. Program directors must understand each test formats strengths and limitations to bring forth the best combination of exams under the local context.

Take-home Messages: High-Fidelity simulation correlates best with final training outcome but is also the most expensive format among ITEs. Increased testing domains with various format improves ITEs overall reliability.
ABSTRACT:
Background: The Department of Psychiatry is creating a Clinician Scholar Program (CSP) for psychiatry residents interested in pursuing careers in education scholarship, quality improvement (QI), and creative professional activities (CPA).
Summary of Work: Our project aims to provide recommendations to our Department with respect to curricular development, including scope, program length, enrollment, faculty capacity, and financial implications of the new CSP. We conducted an environmental scan in July 2020 for existing similar programs within the Faculty of Medicine at our institution. Programs for medical residents relating to education scholarship and QI were included. A brief literature review was also performed to identify publications in 2015-2020 from institutions where similar programs were offered in North America.
Summary of Results: Based on the environmental scan, we recommended enrollment capacity in the first few years of the CSP to be a minimum of two residents per year, depending on departmental resources and faculty capacity in education scholarship, QI, and CPA. Lessons learned pertaining to curriculum development, program evaluation, and key recommendations from other similar programs reported in the literature will also be considered prior to the implementation of the CSP.
Discussion and Conclusions: The CSP is expected to be operationally aligned with the Departments existing Clinician Scientist Program with respect to its program requirements, duration, selection process, on-boarding and off-boarding procedures, as well as the option for residents to enroll in a residency stream or a graduate stream of the program during which a concurrent graduate degree can be pursued in the final residency years. The CSP will create a home-base for department members interested in scholarship broadly defined.
Take-home Messages: Past resident feedback to our current Clinician Scientist Program indicated that there is a need for the Department of Psychiatry to create a new Clinician Scholar Program (CSP) for psychiatry residents interested in pursuing careers in education scholarship, quality improvement, and creative professional activities. Information acquired from existing similar programs within our institution and lessons learned from the literature pertaining to curriculum development, program evaluation, and key recommendations are helpful for the implementation of the CSP.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.6 A case for the use of machine learning algorithms to optimise orthopaedic resident call scheduling at a major academic institution (9099)

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ABSTRACT:
Background: Excessive resident duty hours (RDH) is a recognised issue with implications in both physician well-being and patient safety, especially at trauma centres. While considerable research has been put forth to address this problem of reducing resident call workload, there is a paucity of research in optimising resident call scheduling. Currently, call coverage is typically scheduled without quantitative demand forecasting and can lead to over-scheduling in order to prevent a service gap. We believe that machine learning can be used to efficiently schedule residents to optimise their time while ensuring high quality patient care. We test a mathematical model to determine key variables driving resident workload and identify potential scheduling optimisation.

Summary of Work: Daily handover emails of the orthopaedics department at a major academic hospital over a one year period were collected. Key variables were extracted and used to calculate the demand per day in hours of the residents (demand function). Reduction capacity was measured by determining the number of second-call resident shifts that were not necessary, defined by days when the demand was less than 20 hours.

Summary of Results: The multivariate linear regression model determined three predictive variables involved in the demand function: 1) spine call duty, 2) weekday vs weekend, and 3) season. When not on spine call, the percentage of days with extra shifts per season was 55.3% in summer and 72.5% in winter. When on spine call, the percentage of days with extra shifts per season was 19.0% in summer and 28.9% in winter. Overall, the number of extra resident shifts was 169 per annum.

Discussion and Conclusions: Key drivers of resident demand have been identified. Further optimisation may be achieved by using a machine learning model that takes into account patient factors and historical trends to accurately predict future demand. Appropriately scheduling residents according to the predicted demand will improve resident well being while ensuring high quality patient care.

Take-home Messages: Potential for optimising resident scheduling hours using machine learning algorithms has been identified. Efficiently scheduling residents to match demand is a viable method of improving resident well being via the reduction of excessive RDH.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.7 A webinar series to educate applicants about the UK Academic Foundation Programme: Acceptable and effective (8879)

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**ABSTRACT:**
**Background:** The UK academic foundation programme (AFP) is a competitive programme for medical graduates and forms the initial stage of the integrated academic pathway. The application process lacks transparency and vital teaching on the topic varies significantly between universities. Historically, targeted courses have charged fees and been face-to-face in central locations. This generates inequality in accessibility. Online education provides a low-cost and accessible platform for medical education, which also withstands challenges of an ongoing SARS-COV2 pandemic. We aim to assess the acceptability and effectiveness of an online, free to access webinar series to educate students.

**Summary of Work:** Utilising a cross-sectional questionnaire-based study, we evaluate participants during a free, six-part, one-hour sessional educational webinar series. The event was delivered by current AFP trainees with supervision of a deanery AFP lead professor. We collected participant demographics, opinions of webinar education and AFP understanding via a Google Form (Google, USA) pre- and post-course. Where applicable a five-point Likert scale (1-Strongly disagree to 5-strongly agree) was utilised and analysis using non-parametric paired statistical analysis.

**Summary of Results:** Participants completed the pre-course questionnaire (n=303). Students were from all 35 UK universities with 46.5% in final year. They thought webinars were useful for education (mean=4.2 s.d. 0.7) and felt they may not have accessed AFP education if there was a cost (mean=4.1 s.d. 0.9). Post-course questionnaires (n=90) demonstrated the series was significantly convenient (mean=4.7), effective (mean=4.7) and suitably interactive (mean=4.4) (p<0.001 compared to neutral). Participants preferred the concept of multiple short sessions to a full-day event (mean=4.6 vs 3.1, p<0.001) for webinar education. Paired analysis of participants completing both forms (n=47) demonstrates a significant increase in self-rated understanding of AFP content, CV building, application process, acute clinical scenarios, interview technique and overall confidence in acquiring an AFP post (p<0.001).

**Discussion and Conclusions:** The UK AFP requires competitive preparation. We have demonstrated that an accessible and cost-efficient webinar platform is acceptable and effective for education on the topic. **Take-home Messages:** We suggest comprehensive webinar courses for similar topics and demographics will provide valuable utility in the provision of future medical education.
ABSTRACT:
Background: Clinical oncologists are physicians with the competencies to manage cancer patients through the entire disease pathway combining the competencies of radiation and medical oncologists. The 4th edition of the European Society for Radiotherapy and Oncology Core Curriculum for Radiation Oncology/Radiotherapy (ESTRO curriculum) has received wide support by the clinical oncology community. The aim was to develop a clinical oncology module that could be combined with the ESTRO curriculum to enable clinical oncology trainees to follow a single curriculum.

Summary of Work: A range of stakeholders including National Society representatives, an oncologist from a low- middle-income country, and a recently appointed specialist, developed and commented on iterations of the curriculum. Further modifications were made by the ESTRO Education Council.

Summary of Results: The module is based on the CanMEDS 2015 framework and identifies 20 enabling competencies in the Medical Expert role that are required in addition to the ESTRO curriculum for the training of clinical oncologists. Recommendations are made for the levels of Entrustable Professional Activities (EPAs) to be attained by the end of training.

Discussion and Conclusions: The Clinical Oncology module, when combined with the ESTRO curriculum, covers the entire cancer pathway rather than being modality specific. It is hoped it will aid in the development of comparable standards of training in clinical oncology across Europe and may also have utility in low- and middle-income countries as well as providing a single curriculum for trainees.

Take-home Messages: Conjoining the functions of radiation and medical oncologists and encompassing the innovative and demonstrably effective educational concept of EPAs, the total of ESTROs CC and CO core curriculum is tailored as a comprehensive training program to generate superbly trained Oncologists able to generally provide cancer care to the patient.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.9 Improving the Quality of Discharge Letters in an OPAL Unit in Birmingham, UK (7580)

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ABSTRACT:
Background: Older persons assessment and liaison (OPAL) service is a geriatric specialist service that assesses elderly patients at admission to prevent unnecessary admissions and meet holistic care goals. There are 15 domains that are well documented in the literature that are key to a quality OPAL service and need to be documented on discharge.

Summary of Work: Analysis of 70 randomly selected discharge letters produced by the service over a period of a month analysing whether the domains were addressed. Created a discharge proforma which was implemented to help ensure the domain were documented in OPAL discharge letters. Post implementation analysed 70 randomly selected discharge summaries again.

Summary of Results: The percentage of discharge letters meeting each domain were analysed. The proforma resulted in better documentation of these domains on discharge. The qualitative analysis is still in progress. Next cycle will result in education sessions to implement an improved proforma.

Discussion and Conclusions: Quality of information available on discharge letters should ideally cover domains that are specific to the patient demographic. Covering these domains not only ensures patients receive adequate care on that admission but set the basis for future care.

Take-home Messages: This audit has implemented a system for this to occur long-term and be applied to all discharge letters in the future.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.10 A participatory project with and for PhD-students on intersectionality in public health research: Developing postgraduate education and building capacity (8955)

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ABSTRACT:
Background: Public health education benefits from integrating diversity (gender, age, etc.) across its intersections (intersectionality) in (post)graduate curricula. Intersectionality can help understand health inequalities, improve validity, and contribute to more tailored programs and policies for monitoring, prevention and maintenance of population health. Goal of this Participatory Action Research project (PAR) was to develop and implement a PhD-training Intersectionality & I. By empowering stakeholders, building capacity, and facilitating change agents, we aim for social justice in public health.

Summary of Work: We engaged a core group of nine PhD students* within the Amsterdam Public Health research institute (APH), and developed a 2-day PhD-training. The training, taught by the core group to 20 PhD-students, consisted of on- and offline building blocks, e.g. an online lecture (knowledge), a privilege walk (reflexivity), and an innovative research obstacle run (skills). Additionally, the core group developed teaching skills. Participants in the PAR project or the training received credits. The RE-AIM framework was used to assess implementation endpoints.

Summary of Results:
Reach: 9 PhD-students developed and taught the training, 20 PhD-students participated in the training which was presented to the APH program directors and advisory boards, and to departments. Effectiveness: the training was highly valued by the 20 participants. Adoption: All PhD-students actively engaged with intersectionality as theory and methodology. They engaged in conversations about intersectionality and its relevance for their PhD projects with PhD-supervisors and interns. Implementation: Follow-up meetings have taken place; a new training is planned. The training is implemented in the APH training programme, and research guidelines are implemented in the quality handbook. Maintenance: A Network Intersectionality & Health Netherlands (50 members) is established. The core group of PhD-students actively engage with the network and organize bimonthly meetings.

Discussion and Conclusions: Young researchers find intersectionality relevant to their research. PAR has proven highly effective to develop the training and to further intersectionality in a public health research institute. The bottom-up approach with enthusiastic PhD-students has received institutional appreciation and support.

Take-home Messages: Intersectionality is relevant to young researchers work A PAR approach to co-develop a PhD-training and implement intersectionality in a public health research institute has proven successful *Co-authors of this presentation and the training
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.11 Program directors strategies to foster (organizational) socialization of newcomer residents in PGME (8823)

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ABSTRACT:

Background: In Postgraduate Medical Education (PGME), newcomer residents experience the transition to their new role as demanding. Part of Program Directors (PD) role is to facilitate this transition. However, they tend to focus on organizing / structuring the curriculum rather than supporting residents in their organizational socialization process, an important topic that has received little attention. To deepen our understanding and develop strategies to foster residents socialization, we investigated PDs perceptions of how they support residents socialization.

Summary of Work: We conducted a multi-site, qualitative study with semi-structured interviews. An inductive-deductive approach was employed. In an iterative process, we inductively analyzed the data by thematic analysis and deductively interpreted the data through the theoretical lens of OS. The latter was based on the six organizational socialization tactics of van Maanen & Schein (1). A key characteristic of these tactics is the description of how others in the organization facilitate socialization processes for newcomer individuals in transition from one role to another.

Summary of Results: We inductively discovered that some PDs supported socialization explicit, other PDs were more implicit in their approach. This is illustrated alongside the six organizational tactics; collective-individual, formal-informal, sequential-random, fixed-variable, serial-disjunctive and investiture-divestiture. (I) PDs implicitly valued peer group processes and used explicitly individual tactics when residents failed or underperformed. (II) One PD explicitized socialization in the introduction program, but often socialization was not considered a learning objective. (III) Some PDs explicitly sequenced the socialization process, but in other situations collaboration had not been arranged. (IV) The fixed and variable tactic could not be divided in explicit and implicit support. (V) Role modelling influenced residents socialization. PDs awareness and explicit use of role modelling varied. The disjunctive tactic (absence role modelling) was not identified. (VI) Some PDs accepted newcomer residents as who they were, but others expected residents to conform to their (implicit) expectations.

Discussion and Conclusions: PDs support to promote residents organizational socialization was often implicit, occurred more by default than by design and lacked structure. However, some PDs structured and formalized their support.

Take-home Messages: The challenge for PDs, faculty and residents is to establish socialization as learning objective for all newcomer residents in transition.
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ABSTRACT:
Background: Despite encouragement by WHO to incorporate elements of play in treatment, care, and rehabilitation of patients, the approach to play education appears unsystematic characterized by person-to-person training and learning by doing. To explore the design, implementation, and evaluation of the curricula, we systematically mapped the literature in the field of educational play programmes aimed at healthcare professionals.

Summary of Work: We conducted a scoping review searching PubMed to map the field of educational play programmes. Inclusion criteria were educational play programmes aimed at healthcare professionals at somatic hospital departments irrespectively of study design, year of publication, and country of origin. We analyzed the curricula based on Kirkpatricks Four-Level Model.

Summary of Results: Eight studies out of 1173 references met the inclusion criteria. In general, the studies were monoprofessional with varying defined general goals and objectives based on implicit general needs assessments. The studies reported little information about the design, implementation, and evaluation. The nursing staff constituted the complete or partial target group in five studies. Healthcare professionals such as physiotherapists, occupational therapists, and doctors took part in one study respectively. Six studies evaluated a workshop, two studies evaluated a distraction kit with a minor educational session as the intervention. The studies used different and several learning methods. Six studies used training sessions as learning method, others used electronic learning, scenario-based-training, and supervised practice. Referring to Kirkpatricks Four-Level Model, four studies reported on participants modification of knowledge. Three studies reported modification of attitudes. Four studies assessed a behavioral change including adherence to the programme. Three studies reported on improvement in childrens reaction on distress and level of pain during procedures.

Discussion and Conclusions: Based on the literature search, the educational play programmes aimed at healthcare professionals seem to lack a theoretical approach to curriculum design and well-structured evaluation. Despite the preliminary nature of the field and limitations of our search, the results indicate a need for greater evidence-based practice in future.

Take-home Messages: The field of educational play programmes aimed at healthcare professionals are characterized by a lack of systematism, transparency, and a theoretical framework. The programmes predominantly target nurses and none of the studies are interprofessional.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.13 The Cognitive Load of Inpatient Consults: A Convergent Parallel Mixed Methods Study Using the Consult Cognitive Load Instrument (8006)

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ABSTRACT:
Background: Consultation is crucial for inpatient care and a primary responsibility of fellows. Understanding the cognitive load associated with the complex skill of consultation would enhance fellow learning. The authors aimed to determine themes describing the fellow experience during consults, align these themes with Consult Cognitive Load (CCL) scores, and identify strategies to manage cognitive load.

Summary of Work: The authors studied 16 fellows using mixed methods. Fellows who accepted an invitation completed a consult followed by the CCL, a measure of cognitive load during consults, and an interview. Three authors conducted a thematic analysis. Member checks and triangulation with fellows supported theme trustworthiness. Subsequently, three authors rated the extent and cognitive demand of each theme expressed in each transcript. The authors measured interrater reliability and used Spearman correlation to describe the association of these ratings with CCL scores. The authors examined themes to identify strategies that educators might use.

Summary of Results: Analysis revealed four themes: nature and scope, which conceptually aligned with intrinsic cognitive load (IL); leveraging resources, which had elements of both IL and extraneous cognitive load (EL); extraneous factors, which aligned with EL; and drivers of learning, which aligned with germane cognitive load (GL). Interrater reliability for extent and demand ratings ranged from 0.57 to 0.79. The correlation between nature and scope and IL was 0.37, extraneous factors and EL 0.71, and drivers and GL 0.32. Leveraging resources did not correlate with IL (0.06) or EL (-0.09). Potential strategies based on themes included offering level-appropriate assistance to match IL, focusing the fellows attention to reduce EL, and providing succinct teaching to promote GL.

Discussion and Conclusions: The mixed methods approach provided insights into how fellows experience cognitive load during inpatient consults such that educators can refine their approach. The CCL can be used to gauge the fellows cognitive load, and the insights from the thematic analysis suggest strategies that attending physicians can use. The theme leveraging resources merits further exploration.

Take-home Messages: This study provided deep insight into the fellow consult experience and suggested trustworthy strategies that educators can use to design and guide consult learning.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.14 Multisource Feedback: Comparing performance within International Medical Graduate-dominant and Australian Medical Graduate-dominant General Practice training programs in Australia (9077)

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ABSTRACT:
Background: Multisource Feedback (MSF) is an evidence-based and validated tool used internationally to provide clinicians feedback on their professional and interpersonal skills. MSF is utilised variably in the Practice Experience Program (PEP) and Australian General Practice Training (AGPT) programs both of which are General Practice (GP) training pathways. The cohort undertaking the PEP is demographically different from that of the AGPT in that most of the PEP cohort have gained their primary medical qualification overseas. There are currently no benchmarks available for comparison of the two groups to identify areas of performance that could benefit from education interventions.

Summary of Work: Data comprised the MSF results of PEP participants and AGPT registrars, between January 2018 and April 2020, for statistical comparison. MSF includes up to three measures, the patient questionnaire, colleague questionnaire, and self-evaluation.

Summary of Results: PEP doctors demonstrated significantly lower scores on the patient feedback items ability to listen, explanations, express concerns, respect shown and time for visit. With respect to colleague feedback, responses to PEP doctors tended to be lower than for AGPT doctors. However, this difference was not significant except for the item communication with patients. PEP doctors were rated significantly better for the item ability to say no. With respect to self-evaluation, both PEP and AGPT participants rated themselves lower than their colleagues, with this more pronounced for AGPT GP trainees.

Discussion and Conclusions: The finding that GP trainees on the PEP were rated lower than AGPT trainees in some communication skills was reinforced by the similar finding in both the patient and colleague scores. PEP doctors were rated higher in their ability to say no which may be related to most of the cohort having a greater time since graduation before undertaking their vocational pathway. It is not surprising that both PEP and AGPT GP trainees self-evaluated lower than their colleagues, given the trainees have yet to be fully credentialed as General Practitioners.

Take-home Messages: Based on the demonstrated differences, GP trainees in both programs might benefit from the addition of tailored education programs that include activities to target the less developed skills.
AUTHOR(S):
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ABSTRACT:
Background: e-Posters, a modification of traditional paper-based posters have gained popularity in medical education conferences since 2011. e-Posters differ from the traditional poster in that it allows the e-Poster creator to focus on the learning process rather than reporting scientific outcomes. However, there is limited literature comparing e-posters to traditional paper-based posters and their impact on the student learning experience.

Summary of Work: The Technology and Simulation in Teaching and Learning course was delivered remotely by the University of Saskatchewan in the Fall 2020 term. The course used e-poster presentations as an innovative active learning strategy and a component of student assessments. This study aims to assess the effectiveness of e-posters as an assessment method and identify effective strategies for engaging students in the class using a concurrent mixed methods study design. A short online questionnaire to understand the overall engagement with e-posters was followed by virtual in-depth semi-structured interviews to gain a deeper understanding of the attitudes of the students towards e-posters and their experience with creating, presenting, and engaging with e-posters.

Summary of Results: The students showed an appreciation for e-posters and a clear preference for e-posters over traditional paper-based posters. Emerging themes show an appreciation for the interactive nature of e-posters, and the potential to incorporate non-traditional sources of information (such as videos, podcasts, audiobooks, etc.).

Discussion and Conclusions: e-Posters were well-received as a classroom assessment tool by students. Students appreciated the potential of e-posters to go beyond that of traditional posters to include varied sources of information in an interactive manner. An important limitation of the e-poster was identified to be its reliance on an internet connection, as this may prevent the presenter from streaming content during a presentation.

Take-home Messages: e-Posters as an assessment tool are well suited for online learning. Students will benefit from an orientation session introducing e-posters, a tutorial on their creation, and a discussion board for learners to peer review and share resources.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.16 Evaluation of emotional intelligence among health professionals in a pediatric hospital (8951)

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ABSTRACT:
Background: The importance of emotional intelligence (EI) to the success of health professionals has been increasingly acknowledged. Research into the use of emotional intelligence by health professionals has found a positive correlation between high levels of emotional intelligence, staff wellbeing, and performance. Based on these considerations, the objective of the present work was to validate a questionnaire called Emotional Intelligence Measure (EIM) focused on nursing professionals, pharmacists, nursing technicians, and clinical analysts of a large childrens hospital in southern Brazil.

Summary of Work: This research is a cross-sectional study with a quantitative approach. The EIM measurement instrument assesses the five skills of Emotional Intelligence, the questionnaire contains 24 questions with alternatives using a four-point scale (1 = never, 2 = few times, 3 = many times, and 4 = always), participants should indicate how often emit the listed behavior. The questionnaire was answered by 106 health professionals. The study sample consisted of 7 social workers, 9 biomedical, 41 nurses, 10 pharmacists, 8 psychologists, 16 nursing technicians, and 11 clinical analysis technicians.

Summary of Results: Results were summarized according to the dimensions assessed by the instrument (self-awareness, self-motivation, self-control, empathy, sociability, and general). It was observed that there are no significant differences in all dimensions between the gender variable in health professionals. A significant difference was noted in the dimension of Self-awareness in the age variable. Health professionals over 30 years old showed greater awareness of their emotions concerning health professionals under the of 30 years. In the dimension of Self-awareness Pharmaceutical professionals reported be less aware of your emotions. Nursing technicians showed lower sociability concerning other health professionals.

Discussion and Conclusions: It was observed that older participants showed higher levels of EI compared to younger ones, so the IE evolves throughout life according to new experiences and maturity. Professionals with a Patient-oriented approach showed greater empathy in relation to those in the technology area, in this study the empathy dimension showed lower.

Take-home Messages: Organizations should implement intervention programs that promote the well-being and satisfaction of workers during the period of active employment, in order to improve the training of professionals in skills such as strategy, empathy, emotional intelligence, and self-efficacy.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.17 The status of neurology fellowships: Needs, factors behind the choice, barriers and future outlooks (9457)

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ABSTRACT:
Background: The need for subspecialty trained neurologists is growing in parallel with increasing disease burden. However, despite the growing burden of neurological diseases, including headache and neurodegenerative disorders, sufficient recruitment into these subspecialties is still lacking in some countries.

Summary of Work: Here, a group of educators from the American Academy of Neurologys A.B. Baker Section on Neurological Education reviewed the current landscape of neurology fellowships in the United States, the factors driving fellowship recruitment and the perceived barriers. Moreover, suggestions to potentially improve recruitment to under-selected fellowships, which can contribute towards an alignment between neurological education and clinical needs, are discussed.

Summary of Results: Several factors influence subspecialty fellowship choices by neurology residents: educational factors include recommendations or modelling by education leaders, the diversity of neurology exposure in residency, elective opportunities within training programs and abroad, opportunities in research and clinical practice, and work-life balance. Understanding prospectively and in real time what trainees in their first years of residency know about neurology careers and subspecialties can aid in developing curricula or elective opportunities for residents in the early part of their training to have more exposure to various subspecialties.

Discussion and Conclusions: There is a mismatch between the number of neurology subspecialties and clinical care needs in the United States, leading to inadequate care of chronic illnesses such as migraine, Alzheimers Disease, and Parkinsons disease. Several barriers remain, but they can be overcome through interventions designed to expose and mentor residents and, potentially, medical students early on to foster interest in these underrepresented subspecialties. Though data efforts are being made to provide neurology residents with exposure and mentorship into various subspecialties, there is still much to be done to enhance recruitment into fields such as headache medicine and behavioural neurology to compensate for the lack of subspecialty care for these chronic patients.

Take-home Messages: Barriers can potentially be removed through effective strategies chiefly aimed at early exposure and proper mentoring.
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.18 Analyzing Intensive Care Clinicians Narratives to Understand Their Professional Journey (9065)

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ABSTRACT:  
Background: Clinicians in Intensive Care Units practice in high acuity contexts where patient and their families bear witness to life loss and tragedies. Clinicians narratives make visible key transformative moments in their professional lives and provide insights into development of professional identity in the midst of this life-altering context. The goal of this study was to analyze narratives written by ICU clinicians to determine experiences that most profoundly impact their professional identity formation.

Summary of Work: Looking across 31 journals that publish content to intensive care, we identified one journal who published narratives monthly since 2013. These 85 narratives constituted our data source. The research team that consisted of a clinician educator, art historian and anthropologist analyzed these pieces using a narrative analysis technique identifying major themes and subthemes. Once the research team agreed on a thematic structure, a clinician and ethicists and a trainee read all the pieces for analytic validation.

Summary of Results: The overarching main theme across all the pieces, was the experience of existing at the heart of a dynamic tension between life and death. Within this main theme, three major subthemes were identified: the experience of being able to straddle seemingly contradictory roles, of seeking to bridge the existential divide between dissimilar worlds and contexts, and the simultaneous experience of dissonant emotions.

Discussion and Conclusions: The analysis shed light into the key experiences of personal identity formation of intensive care clinicians. These tensions between life and death can be identified as a disorienting experience that can be used by medical educators to guide reflection and cultivate a supportive and active professional identity formation as trainees adopt new perspectives. In an era of soaring numbers of clinicians burnout, professional identity formation encourages self-regulation and resilience building a capacity to respond to stressful clinical context.

Take-home Messages: Narrative analysis and narrative as a reflection can help in professional identity formation
#SCOD10.1: SCOD - Postgraduate Education

#SCOD10.1.19 Post-graduate Training Breaks: A scoping review of The F3 Phenomenon (8115)

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ABSTRACT:
Background: Over the past 10 years increasing numbers of doctors have taken a break from clinical training. In the UK, the most popular point at which doctors do so is after completion of their Foundation Programme (the first two years immediately after graduation) and has been dubbed the Foundation 3 (F3) Year. The trend has been steadily increasing, and since 2017 more than 50% of doctors take an F3 year rather than enter specialty training. Despite this, there is little published evidence on the subject, leaving many questions about this trend unanswered. Our scoping review gathered the current evidence surrounding the F3 year and identified gaps for future empirical research.

Summary of Work: Our scoping review followed Arksey and O'Malley's guidelines, and used search terms related to foundation and training across 12 databases (Medline, Pubmed, EMBASE, CINAHL, Psych INFO, ERIC, ASSIA, Scopus, Web of Science, ETHOS, OpenGrey, GoogleScholar) and three national post-graduate organisation websites (BMA, GMC, UKFPO). All articles published in English were included. Following title, abstract and full-paper screening, the remaining articles underwent both quantitative and qualitative extraction data.

Summary of Results: Of the 4766 articles originally found, 45 were included. All articles were published after 2009, with almost one-third published in 2019. The majority of articles reported research, and the remainder were commentaries. Thematic analysis revealed reasons doctors personal motivations for the F3 year, demographic trends, typical activities undertaken, and wider issues highlighted by the phenomenon.

Discussion and Conclusions: There is a lack of information surrounding how F3 impacts healthcare services workforce, whether training programmes must incorporate some of the incentives of F3 posts to attract more trainees, and if the rising F3 phenomenon is negatively impacting specialty training application competition. This review encourages the investigation of these aspects through further empirical research.

Take-home Messages: The F3 phenomenon is increasing at an unprecedented rate, but the systemic reasons driving it, and its impact the UK healthcare system, require further investigation. Training breaks such as the F3 year are common in other countries and therefore the lessons learned are translatable to different nations, with the aim of better supporting the healthcare workforce and ultimately optimising healthcare provision for patients.
# SCOD11.1: SCOD - Simulation

# SCOD11.1.1 Designing and piloting the evaluation of complex system-wide simulation-based interventions in healthcare (8165)

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ABSTRACT:

Background: Health Education England Technology Enhanced Learning (HEE TEL) is pursuing a series of projects underpinned by a long-term vision to better understand how simulation and immersive learning technology-based (SimTech) programmes can address system-wide healthcare workforce issues (https://www.hee.nhs.uk/our-work/technology-enhanced-learning/simulation-immersive-technologies). This requirement has become even more relevant in terms of training recovery and workforce development amidst COVID-19. Effective evaluation of these SimTech interventions is a key focus to demonstrate benefits realisation at scale and inform future commissioning models.

Summary of Work: This project aimed to synthesise and validate principles underpinning effective evaluation of complex system-wide SimTech interventions. Phase 1 included a literature review and interviews with key stakeholders involved in the evaluation of SimTech interventions. This generated a set of evaluation principles, application of which were tested (in phase 2) within a purposive sample of SimTech interventions designed to enhance or increase placement capacity, return to training, and training recovery (related to COVID-19 in different healthcare professions).

Summary of Results: Phase 1 identified a gap between evaluation theory and practice within healthcare oriented SimTech interventions, with activities published or reported infrequently and highlighting that a set of principles would be more useful than any single evaluation model. The phase 2 pilots demonstrated the relevance and usability of the principles in practice, helping create a catalogue of case study exemplars to help broaden application and inform future commissioning practice.

Discussion and Conclusions: Embedding the principles of effective evaluation in the form of practical tools and techniques within SimTech interventions in healthcare is critical. These interventions are playing an increasingly important role in transforming professional education, training and workforce development. The challenge is to build an evidence-base and the principles and practical application guidance will support this endeavour using real world exemplars to help widen adoption and refinement at scale.

Take-home Messages: Evaluation of SimTech interventions at scale within a complex healthcare system are necessary and can be designed from a set of core principles. Case study exemplars help describe the practical tools and techniques required across such a diverse range of contexts. Synthesising this approach aligned to a national strategic vision will enable benefits realisation and impact, and inform commissioning practice.
#SCOD11.1: SCOD - Simulation

# SCOD11.1.2 Ranking the factors that impact a Virtual Patients learning experience (9464)

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**ABSTRACT:**
Background: Nowadays, Virtual Patients Simulators provides an immersive learning environment to clinical training. An international multicentric study was conducted with 11 medical and nursing schools, from January to August of 2020. 617 students, from both curriculums, participated in small group sessions with the Virtual Patient Simulator Body Interact™.

Summary of Work: An instrument was created to assess, pre- and post- session, the impact of the simulator on students attitudes, learning and experience. 25 paired items from this tool enabled the assessment of progress in the answers of the group test-takers. The sum of variation in the pre- and post-data gathered, properly normalized, determined an Impact Score, seeking to measure if the use of the simulator could be translated in a learning outcome for students. The items with the higher discriminatory power regarding the positive Impact Score values were represented hierarchically using a decision tree method, through CHAID (Chi-square Automatic Interaction Detection) algorithm.

Summary of Results: Positive Impact score (n = 329), was firstly discriminated by the clinical decision-making strategies item. Positive progress of this item (n = 152, Impact Score mean = 6.81) was highly discriminated by the opportunities created to participate in clinical simulation item. In the opposite branch, students who do not recognize the benefits of virtual patients in decision-making strategies (n = 177, Impact Score mean = 3.08), the Impact Score was highly discriminated by the adequate training in communication techniques progress item.

Discussion and Conclusions: Virtual Patients are crosswise used as a valid tool to develop and train clinical reasoning and decision-making skills, both in Medicine and Nursing curriculums. Features and uses regarding the use of this type of simulation can be defined to foster the educational benefit, since a set of conditions, both in terms of quality and quantity, have been identified through students perceptions.

Take-home Messages: The design of Virtual Patient educational interventions, in a formal curriculum setting, should take in account the factors and conditions that enhances its potential in student learning, such as promoting the effective possibility for students to put into practice decision-making strategies and the frequency in which students participate in clinical simulation activities.
Background: With the declining birthrate in Taiwan and peoples growing expectations for labor and delivery treatment, sophisticated obstetrics and gynecology treatments have emerged. Preparing medical students for this through vaginal delivery simulation training has become an essential instrument of teaching to facilitate medical students ability in labor and delivery.

Summary of Work: Using a one-group pretest-posttest design, trainees answered six questions concerning labor-related knowledge before the training. In the stimulation training, LUCINA, a highly realistic childbirth stimulator, was used to assist trainees in the preparation and process of labor and delivery. The TRM technique was used by lecturers to remind students of the main points, and the trainees used the ISBAR method to communicate the condition of the parturient during shift changes. They also went through debriefing and a post-test after the training.

Summary of Results: A total of 164 people participated in the pre-test and 140 people participated in the post-test. The overall attrition rate was 14.7%. When the test results were compared, the rate of right answers increased; right answers to the practical question increased from 40.2% to 87.8%. In the student satisfaction survey, 121 of 140 students said that they were very satisfied with the course, 19 people were satisfied, and the qualitative feedback of the students was also positive, revealing a high overall satisfaction rate.

Discussion and Conclusions: The use of the childbirth stimulator LUCINA in the labor and delivery training may positively influence the effectiveness of learning about vaginal delivery. The course has also won positive feedback and affirmation of the students.

Take-home Messages: 1. With the simulation training program with CAE Lucina maternity simulator, the accuracy of all test questions has increased. It is speculated that the simulation training is helpful to both knowledge and technical learning of students. 2. In terms of teaching satisfaction, the qualitative feedback from students was also positive with high overall satisfaction. 3. The novel effect of ecological effectiveness: Because the teaching methods and equipment are different from traditional in-class learning, students may be promoted to achieve this learning result due to the freshness of learning.
ABSTRACT:
Background: Success of simulation based training (SBT) is highly based on adequate scenario development. A scenario script is an essential tool that plans and details all relevant information and steps of the envisioned scenario. The script ensures the quality of the simulation sessions, including its consistency and standardization, guaranteeing its repeatability/reliability. The quality of the script is not only dependent of its developer but also on the scenario template. Several examples of scenarios templates are currently available; however, these templates were developed considering specific purposes, and not being able to provide a full overview over the whole process of scenario design, including implementation and execution.

Summary of Work: The aim of this work is to propose a new template that accompanies and supports the developer throughout the steps of the scenario development, implementation and execution. The development process of the proposed template combined revision of previous published templates and the current recommendations/standards for scenario design. Additionally, new requirements were included: Modular structure - sections that can be included/excluded, as needed; Multipurpose use - all relevant information for scenario development, implementation and execution; Various users - specific information for the instructors, technicians/operators, confederates/SPs, etc; Chronological structure - sections arranged considering the different phases of a scenario: preparation, briefing(s), scenario, debriefing.

Summary of Results: The proposed template is constituted by 8 sections: Scenario overview, Curriculum integration, Preparation of the setting (environment), Preparation of patient(s) and other intervenient, Briefing of the simulation environment, Case briefing, Scenario progression and prompts, and Debriefing aid. A full version of the template can be downloaded from https://simulacao.med.up.pt/tools-resources/

Discussion and Conclusions: The proposed template represents an extension to traditional templates, broadening the application to other relevant phases of a scenario. It is expected that such an integrative tool will facilitate and optimize the successful application of SBT.

Take-home Messages: The proposed clinical scenario template aims for consistency and standardization of the simulation based training method. The main distinct features of this novel template are: Modular and chronological structure, multipurpose use and improved usability for several users. The template is intended to be used during the design, implementation and execution of a clinical scenario.
#SCOD11.1: SCOD - Simulation

# SCOD11.5 Online Simulation Curriculum to Prepare Interdisciplinary Medical Teams for Electronic Dance Music Festivals (7913)

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ABSTRACT:
Background: Patient care in Electronic Dance Music (EDM) festivals presents unique challenges, including resource limitations, loud music, crowded environments, and working in ad hoc teams to manage situations uncommon to most clinical practices. We developed an online simulation curriculum and evaluated its impact on healthcare providers self-efficacy and knowledge in managing life-threatening EDM festival cases.

Summary of Work: Teams of 4-5 multidisciplinary healthcare providers and trainees participated in 3 online simulations (cardiac arrest, serotonin toxicity, and seizure). Facilitators managed case progression through a Zoom screen-share of Google Forms. Participants completed self-efficacy and knowledge assessments 1 week pre- and post-session, as well as surveys immediately post-session, reflecting on teamwork, learning points, and program quality.

Summary of Results: Average self-efficacy ratings (n=18) increased pre- vs post-session (one-tail repeated-measures t-test) for cardiac arrest (3.80 to 4.31/5.00; p<0.01), serotonin toxicity (2.60 to 4.13/5.00; p<0.001), and seizure (2.70 to 3.83/5.00; p<0.001). Average knowledge quiz scores (n=18) increased pre- vs post-session (one-tail repeated-measures t-test) for all subsections (p<0.001): cardiac arrest (67% to 80%), serotonin toxicity (65% to 83%), and seizure (54% to 76%). Participants reported collaborative decision-making and communication as teamwork strengths. Commonly reported learning points were related to pharmacology/toxicology, clinical approaches, and differential diagnoses. Average satisfaction rating (n=22) was 4.36/5.00.

Discussion and Conclusions: The online simulation curriculum increased participants self-efficacy and knowledge on learning objectives 1-week post-session. Online festival simulations may have several benefits: i) faculty development and continuing education on unfamiliar topics, ii) global collaboration and teamwork with multiple participants in various locations, and iii) elimination of physical distractions from in-person simulations (e.g., crowdedness, equipment, extra sounds and noise) to focus on applying clinical concepts and practicing clear communication.

Take-home Messages: Online simulation training can be an effective and satisfying experience for interdisciplinary medical teams looking for an accessible way to rehearse and retain clinical knowledge and approaches. Online simulations can be adapted to teach and review topics in clinical practice.
#SCOD11.1: SCOD - Simulation

# SCOD11.1.6 Debriefing interaction patterns and their effect on learning outcomes in simulation-based medical education (8089)

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**ABSTRACT:**

**Background:** Simulation-based medical education allows deliberate practice of high-risk events without putting patients at risk. An integral part of simulation-based medical education is the debriefing, which enhances individual learning. Current debriefing literature suggests the debriefer should act as moderator and participants should share their own reflections. Little is known about how different interaction patterns during debriefings influence the learning of participants. Therefore, we performed this observational mixed-methods network study to establish different interaction patterns and their association with short- and long-term learning outcomes.

**Summary of Work:** At the Bern Simulation- and CPR-Centre, Bern University Hospital, Bern, Switzerland, two trained psychologists observed 5-h simulation sessions (3 scenarios and their respective debriefings) with 2 simulation instructors and 5-7 participants each. Participants were asked to fill in 3 questionnaires, one before the first scenario, 1 after the third debriefing, and 1 1-month later. Participants were asked about their degree of motivation, the usefulness and satisfaction, as well as the learning effects of the debriefings. During debriefings the psychologists counted all communication interactions and created a who-to-whom list. Interaction patterns were identified using qualitative-quantitative mixed network analysis by three different blinded psychologists.

**Summary of Results:** Fifty-seven debriefings containing 625±191 communication interactions were analysed. Three interaction patterns were identified: (1) fan - interactions between each individual participant and the debriefer; (2) triangle - additional to fan pattern also interactions between the debriefer and two participants in a triangle; and (3) net - additional to fan pattern interactions between all participants in a net. Prior participant motivation was significantly associated with participant satisfaction (p=0.036); and individual/team learning directly after and 1-month after simulation (both p<0.001). Learning effects were significantly higher in net pattern compared to fan pattern debriefings directly after simulation.

**Discussion and Conclusions:** The fan and triangle patterns were already previously described, the net pattern was newly discovered, and showed significantly increased effects on short-term individual and team learning. The net pattern follows a learner-centred debriefing style. These findings support current good-practice debriefing guidelines.

**Take-home Messages:** Focus also on debriefing process instead of only on the content of debriefing enhances short-term learning in simulation-based medical education.
ABSTRACT:
Background: Health literacy is a critical determinant of health. Low health literacy is associated with a suite of poor health outcomes from an individual and community perspective, as well as posing an increasing economic burden on nations globally. To date, strategies to mitigate this health inequity have been focused on assisting patients with low health literacy to overcome modifiable factors by patient-focused interventions. More recently, a health systems or organizational approach has emerged, shifting responsibility from the individual patient to a shared accountability with health care providers, including medical professionals. It is increasingly acknowledged that clinical environments and healthcare systems need to become health-literate in their interactions with patients and carers. Integral to this approach is the requirement for the healthcare workforce, including medical professionals, to be health-literate - that is, competent at identifying the health literacy of patients and responding to specific needs of patients with low or inadequate health literacy. However, the association between the medical professionals or medical students individual health literacy and their ability to become health-literate practitioners has not yet been explored. This study is the first in a series of studies from my Doctoral research program which is investigating the health literacy profiles of medical students during medical training.

Summary of Work: The health literacy of first year medical students enrolled in an Australian MD program was assessed at the commencement of their medical studies in February 2021 using the Health Literacy Questionnaire.

Summary of Results: Health literacy strengths and weaknesses of participating first year medical students will be analysed and results will be presented at the 2021 AMEE Conference.

Discussion and Conclusions: Study findings will be discussed at the conference. Conclusions will be drawn regarding the health literacy strengths and weaknesses of first year medical students enrolled in an Australian MD program.

Take-home Messages: Little is known about the health literacy profiles of medical students on entry to medical school. The findings from this study will contribute new knowledge to the interdisciplinary space between medical education and health literacy.
ABSTRACT:

Background: High stake examinations are one of the challenges medical students are faced. Understanding how medical students approach high stakes examinations through the lens of self-regulated learning (SRL) can inform student support. The aim of this study was to identify medical students use of forethought sub-processes of SRL including self-efficacy, goal-setting, and strategic planning while they are preparing for a high stakes exam at the end of the basic science phase.

Summary of Work: A questionnaire with a closed question for the measuring self-efficacy measure and two open-ended questions for goal setting and strategic planning were administered to students in three months, one month, and two weeks before the examination at Tehran University of Medical Sciences. The responses to open-ended questions were analyzed using a predetermined coding scheme developed according to previous research on SRL across basic science learning as well as experts discussions, and further refinement based on a pilot study.

Summary of Results: A total of 119, 120 and 121 students (n=300) responded to the questionnaire during the study stages, respectively. In terms of self-efficacy measure, 36.9% of students were pretty sure to pass the high stake exam successfully three months before the exam. 44% and 41.8% of respondents were very sure one month and two weeks before the exam, respectively. The most frequently reported strategies for goal setting were performance-specific outcomes during the three stages of the study (67.2%, 65.8% and 71%, respectively). Finally, the most applied strategies for strategic planning were study management across the first (44.5%) and second-round (37.5%) and the self-assessment throughout the third round (51.2%).

Discussion and Conclusions: We measured medical students SRL employing an event measure in several time points. Students self-efficacy was high in all three stages of preparation for the exam. Students use of strategies across goal setting and strategic planning measures and their pattern were consistent with the nature of the learning task. A greater understanding of how medical students approach high stakes examinations has the potential to inform future developmental support.

Take-home Messages: A greater understanding of how medical students approach high stakes examinations has the potential to inform future developmental support.
#SCOD12.1: SCOD - Students – Student Characteristics

#SCOD12.1.3 Workload and self-regulated learning – does curriculum design have an effect? (8137)

**AUTHOR(S):**
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Julie Browne, Cardiff University, UK
Stephen Rutherford, Cardiff University, UK

**ABSTRACT:**

**Background:** Medicine is a demanding course, and workload a major factor in student stress and attrition. To cope with heavy workloads, medical students must assume responsibility for their learning. Self-regulated learning (SRL) skills are key to managing workload, particularly as they prevent burnout. However, little is known about the interplay of SRL and workload in a Case-Based Learning (CBL) medical course.

**Summary of Work:** An online survey containing 5-point Likert-type scales was developed, and evaluated by expert review, undergoing 2 piloting rounds. In February 2020, it was distributed to year 1 Cardiff University medical students. Cardiff University's School of Medicine Research Ethics Committee gave ethical approval. SPSS statistics were used to analyse data and composite scales were created from related survey items.

**Summary of Results:** 32.3% (91/283) of invited participants completed the survey. The workload scale had sufficient internal consistency to measure concept with α = 0.805. It was not normally distributed (W[91] = 0.966, p = 0.01), and instead had a bimodal distribution with peaks at 2.50-2.83 and 3.16-3.49. There was no significant difference in ability to cope with workload between those who transitioned well to university, those who did not and those who were neutral (X2[2] = 5.215, p = 0.074). Students struggling with workload coped by sacrificing exercise, sleep and socialising. 54.9% would ask a peer for help; 35.3% would work through it alone.

**Discussion and Conclusions:** Approximately half of respondents struggled to cope with their university workload. Many did not ask for help and sacrificed elements of their wellbeing. Workload stress may predispose students to focus on surface learning and could be due to poor SRL skill in monitoring and appraisal phases. It may also be a welfare issue, and there is currently little focus in the literature on the impact of curriculum design on wellbeing.

**Take-home Messages:** As SRL can be taught through educational practice, work is needed to explore whether curriculum changes can improve SRL and increase students ability to cope with workload and subsequent wellbeing. Research should focus on why students struggle with their workload and themes generated should inform curriculum development.
AUTHOR(S):
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Khatuna Saganelidze, New Vision University, Georgia

ABSTRACT:
Background: In Medical Schools, there is a priority of creating a collaborative environment where contributors provide each other with assistance as they work together toward a common goal.

Summary of Work: The presentation introduces the idea of incorporating peer-coaching as a part of the teaching process and summarizes the results of qualitative analysis of the peer-coaching through portraying the opinions of participant students (both seniors and freshman & sophomores) as well as academic and administrative staff.

Summary of Results: Senior students at New Vision University, who have already encountered with the clinical subjects, hold the peer-coaching with the students of first and second years regularly. For them, it is an opportunity to retrieve the foundations of Medicine in subjects like, Neuroanatomy and Neurophysiology and Neurology, while for first and second-year students it is a chance to establish vertical integration with the clinical correlations and the actual cases which seniors have observed during their clinical rotations.

Discussion and Conclusions: For a program of peer coaching to be successful, senior students have to cooperate with the academic staff effectively for planning and delivering the information. The format of the meeting can include group meetings, individual discussions, or informal conversations, which help to set confidence and develop positive self-perception. Because senior students may have varied approach and concerns, the instructions should be arranged beforehand in order to set the common goals for the achievement. By meeting with junior students and providing them with relevant guidelines, the coach can inspire students to work together and concentrate on their common goals. Additionally, creating an atmosphere of trust, respect, and confidentiality is crucial for peer coaching, where contributors are prepared and ready for the new challenges.

Take-home Messages: Peer coaching provides students with the opportunity to learn and explore alternative methods of knowledge retrieval, to deliberate its effectiveness, to arrange adjustments if they are necessary and then to explore again. It can help to build and guide a culture of interactive student engagement in the education process. Indeed, Students need time to acquire new information and skills, but they also need support from their peers.
#SCOD12.1: SCOD - Students – Student Characteristics

# SCOD12.1.5 Creating, Evaluating, and Reinventing a Pre-Clinical Mentoring Program for Medical Students (9246)

AUTHOR(S):
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ABSTRACT:

Background: A common goal within mentoring is to develop the mentees ability to gain knowledge, skills, and self-confidence to reach their educational or professional goals. This is a process achieved by long-term investment of both mentor and mentee highlighted by reciprocal benefits (Hastings). Common identified outcomes for students include increased social and academic integration and academic success (Crisp).

Summary of Work: Spring 2016 Ross University School of Medicine made the decision to allocate significant resources to supporting their pre-clinical students by establishing a mentoring program focused on interpersonal connections, learning management, wellbeing, professionalism, and career attainment. Since rolling out many modifications have occurred due to student and faculty feedback, changes in resources, and a natural disaster that relocated the University.

Summary of Results: Throughout the duration of the mentoring program, learning objectives were evaluated. On average over 85% of participants reported a connection to their mentor, understood techniques and resources associated with wellbeing and learning management, and what professional behaviors are expected of them. Further, over the past five years 85-88% of participants reported the mentoring program overall had a positive impact on their medical education. Since the start of the program student and faculty engagement in and knowledge of a variety of student support services has risen. Academic gains were more often seen in students not involved in a course remediation.

Discussion and Conclusions: Moving forward, RUSMs mentoring strategic oversight committee is reviewing learning objectives and looking to shift towards better aligning with ACGME core competencies and enhancing a mentors ability to actively contribute to their students MSPE. This new direction will be discussed along with any initial results from these changes.

Take-home Messages: Given the intensity of curriculum and complexity of career paths, effective support for medical students in the form of mentoring is shown to be incredibly beneficial. For those looking to initiate a similar initiative, it is incumbent upon each institution to identify their areas of greatest need and available resources to create the right program to bring the greatest benefit to the most students. This presentation will aim to inspire participants to take a few steps forward in beginning or enhancing their own initiatives.
The development of medical students' motivation and self-regulated learning capabilities: Coaches' perspectives (9076)

AUTHORS:
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ABSTRACT:
Background: Self-regulated learning (SRL) is critical to functioning successfully and competently as a doctor. SRL is an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behaviour, guided and constrained by their goals and the contextual features in the environment (Pintrich, 2004). Individualised coaching can support medical students to develop SRL capabilities. Yet, understanding how medical students develop SRL capabilities remains unclear.

Summary of Work: This qualitative study sought to understand the development of SRL capabilities from the perspectives of medical student coaches at an Australian university. After obtaining ethics approval, 12 coaches were recruited for participation in semi-structured individual interviews (n=8) and focus groups (n=2). Data were audio-recorded, transcribed and de-identified before being analysed using Pintrich’s (2004) SRL framework and Self-Determination Theory (Ryan & Deci, 2000). This presentation reports on the study’s findings in relation to motivation and the development of SRL capabilities.

Summary of Results: Coaches observed an evolution in students motivation as they developed as self-regulated learners. Initially, coaches perceived students motivation to be based on external regulation and introjection, focussing on passing assessments. As students became immersed in the clinical environment, however, coaches noted a shift towards internalisation, with students motivation to learn shifting focus towards becoming better doctors for their patients while simultaneously demonstrating more SRL capabilities. Coaches also described their own behaviours: questioning, challenging and encouraging, which assisted students evolving motivation and development of SRL capabilities.

Discussion and Conclusions: Coaches clearly described medical students motivation to learn and the growth of their learning capabilities as a developmental process, supported by the transition to learning in the clinical setting and coaches autonomy supportive behaviours (Williams and Deci, 1998). Students motivation was seen to develop in parallel with the opportunities afforded to them to take on clinical responsibilities. Clinical immersion also facilitated professional identity development, which played an instrumental role in increasing motivation to learn.

Take-home Messages: Motivation plays a key role in supporting the development of SRL capabilities which is influenced by the learning environment and autonomy supportive educational partnerships, such as those seen between coaches and students.
# SCOD12.1: SCOD - Students – Student Characteristics

# SCOD12.1.7 Predicting scores of the preclinical clerkship OSCE in Japan through grit and voluntary practice (9566)

**AUTHOR(S):**
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**ABSTRACT:**
**Background:** The acquisition of clinical skills requires persistent efforts and deliberate practice; therefore, medical students not only need high intellectual abilities but also grit. Although previous studies have revealed that grit is correlated to higher academic performance, it remains unclear whether it is associated with the acquisition of clinical skills. This study thus examined whether grit can predict scores of the preclinical clerkship (CC) Objective Structured Clinical Examination (OSCE) when controlling for grade point average (GPA).

**Summary of Work:** Between 2017 and 2019, 308 fourth-year students at Kansai Medical University completed the Short Grit Scale at the beginning of the year. This scale consisted of two factors: perseverance of effort and consistency of interest. At the end of the year, students took the pre-CC OSCE. The total score was calculated from six stations. In addition, we counted how many times each student voluntarily practiced at the simulation center during the self-study period (about one week) before the pre-CC OSCE. The students third-year GPAs were obtained from school records. We conducted the hierarchical regression analysis to predict pre-CC OSCE scores. The GPA was entered in Step 1, grit scores for perseverance of effort and consistency of interest were entered in Step 2, and the number of voluntary practice sessions was entered in Step 3.

**Summary of Results:** The grit score for perseverance of effort was significantly correlated with the number of practice sessions \( r = .13, p = .018 \) and pre-CC OSCE scores \( r = .14, p = .017 \). The number of practice sessions was correlated with the pre-CC OSCE scores \( r = .35, p < .001 \). Hierarchical regression analysis revealed that perseverance of effort \( (B = .13, p = .017) \) and the number of practice sessions \( (B = .22, p < .001) \) predicted higher performance in pre-CC OSCE even after controlling for GPA \( (B = .34, p < .001) \).

**Discussion and Conclusions:** The study results showed that grit scores predicted pre-CC OSCE scores when controlling for GPA. Students with more grit engage in more voluntary practice, which enables them to acquire more advanced clinical skills.

**Take-home Messages:** Grit and voluntary practice are key factors for the acquisition of more advanced clinical skills.
**ABSTRACT:**

**Background:** United States medical students enter with diverse undergraduate experiences that are taken into account during curriculum planning. However, the effectiveness of this strategy on engagement and learning outcomes is unclear.

**Summary of Work:** We assessed all students from 2011-2020 in the 1st year epidemiology medical school course at Johns Hopkins. Students rated their pre-course proficiency in epidemiology and biostatistics as: advanced (advanced training), intermediate (some background), or elementary. We used these to divide students into small groups. At end-of-course, a multiple-choice examination assessed knowledge; a standardized survey had students rate on a 5-point Likert scale how engaged or effective their group was. Following the course, students pursued the longitudinal scholarly concentrations program, where they noted their baseline research self-efficacy using a modified Clinical Research Appraisal Inventory-Short Form (CRAI-SF). We performed analyses using logistic and linear regression.

**Summary of Results:** Of 1187 epidemiology course students, 53% identified as female and 19% from an underrepresented race/ethnicity (UIM) group. Most students (73%) rated their proficiency elementary, while 272 (23%) rated themselves intermediate, and 45 (4%) advanced. Factors associated in multivariable analysis with intermediate/advanced rating included course year (OR per year earlier 1.17, 95%CI [1.05-1.31]), male gender (OR 1.91, 95%CI [1.30-2.78]), non-UIM student (OR 1.77, 95%CI [1.03-3.05]), and advanced degree (OR 2.24, 95%CI [1.25-4.03]). Students with intermediate/advanced rating performed better on the exam, though by only 1% absolute difference (? 1.29, 95%CI [0.39-2.20]). Students with intermediate/advanced rating felt similar to others their group was engaged and effective (? 0.06, 95%CI [-0.01-0.13]). Students with intermediate/advanced rating had continued high perception of their self-efficacy across each research subscale and average score on the CRAI-SF (p?0.006 for each component).

**Discussion and Conclusions:** Asking students to self-identify their baseline epidemiology proficiency was associated with several gender and race/ethnicity considerations. Highly rating oneself also was associated with continued high self-rating on later scales. Rating oneself higher was associated with marginal improved course performance, and similar perception of the course. Self-identifying proficiency therefore may help students stay engaged, but has limited translation into other outcomes.

**Take-home Messages:** The use of self-rating of prior knowledge of epidemiology has limited value in predicting or enhancing performance in a medical school course on epidemiology.
#SCOD12.2: SCOD - Students – Student Engagement

# SCOD12.2.1 Student Autonomy and Support during transition: Co-creation of transition to Practice Curriculum (9754)

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ABSTRACT:

Background: The complexity of graduating medical students transition to clinical practice, with new roles and responsibilities is still a challenge in medical education. Medical students, college and clinical faculty provide different perspectives and bringing them together to co-create a transition to practice (TTP) curriculum is expected to provide a holistic approach.

Summary of Work: Using an exploratory qualitative approach, we conducted a co-creation study. We recruited 23 final year students and nine academic faculty at Qatar University College of Medicine alongside nine clinicians and five chief residents from Hamad Medical Corporation. We conducted three co-creation sessions (CCS) with college faculty and five with clinicians. Then based on the generated components, a survey was sent to stakeholders who did not participate in the CCS asking for their opinions. The final two CCS involved the three stakeholders to decide about the final components of the co-created curriculum.

Summary of Results: We identified four themes in template analysis of the CCS transcripts: components that clinical, academic faculty and students valued as important; differences in components between CCS with clinicians and with college faculty; components that faculty and students debated about but reached agreement; and added value of involving non-CCS participants. Nine out of 23 students (39%) and 71 out of 109 faculty (65%) responded.

Discussion and Conclusions: Transition from undergraduate to postgraduate training is a critical phase and students move from being taught by college faculty at one end to be taught by clinical faculty at the other end. Students engage in the discussion with faculty and demonstrate argumentation with resulting clarification of misconceptions and attainment of agreement at the end. We conclude that students and both college and clinical faculty provides different and unique insights that brings richness and holistic TTP curriculum. This offers a call for developing co-creation curricula with the involved parties.

Take-home Messages: Medical students voices should be considered in the development of curricula particularly during their transition when new roles, responsibilities and expectations are anticipated. Being a shared responsibility, college faculty and clinicians provide different perspectives that adds to the richness of the curriculum.
ABSTRACT:

Background: The Medical Student Alliance for Global Education (MeSAGE) aims to identify and develop educational content to address curriculum gaps. In 2019, our shared needs assessment identified Diversity, Equity and Inclusion (DEI) as a priority. Our goal was to propose a way to address diversity and inclusion in medical education and to provide context to students about the challenges within the educational environment and implications in achieving health equity. Relevance of this project was attested by the increasing number of publications exploring the field.

Summary of Work: Our curriculum is student-driven, supported by a rigorous peer review process. A group of students, guided by faculty, reviews the literature and defines the modules and learning objectives. Student authors develop content, with editorial and production support from ScholarRx. Content is delivered in the form of bricks, modular learning units consisting of illustrated text, interactive multimedia, and formative self-assessment.

Summary of Results: We found there is no consensus approach to addressing DEI from an international perspective. Issues of workforce diversity, under-representation and health equity vary greatly by country and region. We agreed to develop content in phases, the first focusing on a US perspective. It consists of seven modules: Health Equity, Social Determinants of Health, Diversity and Inclusion, Historical Disparities in UME and the Physician Workforce, Racism and discrimination, Biases and Microaggressions, and Cultural Humility. We will use a Kirkpatrick program evaluation model to measure student utilization and satisfaction and report our findings.

Discussion and Conclusions: Developing an introduction to DEI for medical education has proven challenging. Its complexity lies not only on it being an emerging field where concepts and models are starting to be proposed, but also on the sociological aspects, historical perspectives and interlinks it has to consider. Feedback from students, representative of different backgrounds, may prove invaluable in developing a comprehensive approach for medical curriculum.

Take-home Messages: MeSAGE hopes to serve as a model for a shared curricular ecosystem that can respond to the challenges traditional curriculum faces and that can be implemented worldwide. We demonstrate that students supported by expert faculty and an editorial team are capable of developing high quality curricular content.
#SCOD12.2: SCOD - Students – Student Engagement

# SCOD12.2.3 Policy 101: A Student Advocacy Project with a Medical Education Approach (9447)

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ABSTRACT:

Background: Physicians have a role as health advocates, which requires them to know the principles of health policy. To this end, advocacy teaching and opportunities to apply it in medical education are fundamental. Policy-making is an essential element of advocacy and medical students should be equipped with the knowledge required to engage in it. For this purpose, EMSA has been working to ensure that students can be a part of policy-making, such as with policy writing and awareness campaigns, as well as the Policy 101 Project.

Summary of Work: The Policy 101 Project was shared by the Health Policy Pillar in the 2018-2019 term and since then, it has been carried out in different ways. Designed as a four-part introduction to EU legislation and health policy, it consists of four interactive workshops, each addressing a component of student advocacy. In a recent digital adaptation, we conducted the workshop series aiming to present policy-making essentials and skills to advocate for renovated medical education, such as the inclusion of digital health skills into curricula.

Summary of Results: The feedback to our digital Policy 101 workshops indicated that for many participants; the topics covered by them were new and would represent important learning goals in medical education, helping students understand how change can be initiated through policy-making.

Discussion and Conclusions: The engagement achieved by and the feedback to our project reflect the need for improved advocacy teaching in medical education. As our participants stated in their feedback, we might know that medical students have a voice but we also need to be taught of paths that allow us to use it. This could be achieved by incorporating learning modules similar to our project, encouraging students to work together and build solutions. EMSA has dedicated itself to provide educational opportunities to promote participation in policy-making and been successful in creating a project to empower medical student advocacy.

Take-home Messages: 1. Medical students should have the necessary advocacy skills to help strengthen healthcare systems and structure their education. 2. EMSAs Policy 101 project is an example of peer education for supplementary skills needed in the medical field.
ABSTRACT:
Background: One important lesson for physicians is to understand that the key time for them to really help an individual is before they become patients, before they even get sick. By working in meaningful ways to engage participants in these disease awareness campaigns, students acquire skills and knowledge, but also fulfill a social responsibility to society and to patient-centered care. Making them a priority for medical schools to promptly reimagine new formats for these dynamics to take place despite the coronavirus.

Summary of Work: 34 medical students enrolled in the endocrine course designed and implemented an innovative disease awareness campaign. They designed an online strategy built on social media targeted to different highly prevalent endocrine diseases: dyslipidemia, diabetes mellitus, hypothyroidism, and osteoporosis. Their process of the implementation considered: thorough literature review, decided target audience, modularization of posts and distributed the content accordingly, designed the posts, and assess the implementation. The documentation of their campaign was presented in a final report as part of the assessment of the course.

Summary of Results: Students were divided into four teams that implemented a 1-week long campaign. The average number of posts was 20-25, mostly focused on preventive lifestyle changes by including posts about risk-factors and early diagnosis by describing manifestations. Their final reports were scored with a grading rubric with five levels of performance: 1) Unacceptable, 2) Poor, 3) Satisfactory, 4) Good, 5) Excellent. Students accurately presented a disease definition, risk factors, and clinical manifestations (4.48), and low in etiology, epidemiology, and complications (2.38). Students showed high motivation and creativity in developing their campaigns.

Discussion and Conclusions: A thorough literature review was the key to strengthening the campaign content with updated information on prevalence, complications, and mortality. An important step was to help students to accurately define their audience and to question the alignment of vocabulary, design, and final user. Students expressed that the use of a familiar social media platform contributed to their easiness in the campaign design.

Take-home Messages: The pandemic has made us change the way we do things, some of these new ways should continue once social distancing is not required. It makes it possible to reach the community with important information that may be life-changing.
# SCOD12.3: SCOD - Students – Student as Teacher - Peer to Peer Learning

# SCOD12.3.1 Trends in Peer Learning Among Medical Students of University of Khartoum (8060)

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**ABSTRACT:**

**Background:** Peer learning is a popular practice in medical schools for the social, psychological support, and the academic benefits it provides for students. It can be classified into mentoring, small group, large group and whole-class learning based on the number of students involved. This study aims to describe the trends and motives behind the use of peer learning across academic years in University of Khartoum's medical school.

**Summary of Work:** This was a descriptive cross-sectional study using a random sample of 344 medical students from different academic levels at University of Khartoum. Data was obtained using a self-administered questionnaire. Descriptive analysis of data and correlations were performed using SPSS version 26.

**Summary of Results:** The percentage of students who attended peer-taught sessions was 79.7%. Attendance increases as they transition from pre-clinical to para-clinical and clinical years (p<0.001). Highest attendance was for the small group type 73.6%, and 53.8% of students reported it was the most beneficial type. 56.6% of the students attend to improve grades, while 37.1% attend to pass exams. 70.5% attend peer taught sessions at the end of the semester before exams. Recorded peer taught sessions are used by 61.2% of students to improve grades and for better understanding of the taught material.

**Discussion and Conclusions:** The frequency of students employing peer learning activities increases as they advance in academic years, and this aligns with the increase in stress levels and academic load reported from previous studies of this setting. Students use peer learning for academic purposes, and a majority of them use it before exams, so this suggests that they are using it as a superficial method of learning to score better in exams.

**Take-home Messages:**
1. The institution should support activities that promote student’s wellbeing to eliminate the use of peer learning as a superficial learning approach and to enhance its use for deeper learning.
2. Allocating institutional resources to aid peer learning activities is recommended, given that it maintains its informal nature.
3. Recorded peer taught sessions can be used among the efforts to apply online learning in low-resource settings like Sudan.
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ABSTRACT:
Background: The International Federation of Medical Students Association (IFMSA) founded in 1951 stands as one of the oldest and largest youth organisations of the world. IFMSA develops Policy Documents (PD) for its advocacy work and activism, that are adopted by a General Assembly annually. These documents aim to empower medical students as future global health leaders by providing them the avenue to represent their stance on subject matters both internally and externally in high level meetings. They also provide an opportunity for medical students to build their capacity on specific Global Health (GH) topics within the broader context of the GH arena.

Summary of Work: A multiphase qualitative study was conducted across all WHO regions, to assess the interest of medical students in global health policy making through informal education. The participants were then assessed for their knowledge and motivation post intervention.

Summary of Results: A training session was designed from December 2020 to January 2021 collectively making up for 12 hours of educational activity. The training was delivered to 279 participants on Zoom®/Google Meet® whilst also using interactive platforms like Menti®, Kahoot® and Moodle®. It covered all aspects and skills required in developing a PD within IFMSA. It also taught the participants the art of advocacy and use of these PD(s) to represent their certain stance on behalf of a youth stakeholder at different platforms.

Discussion and Conclusions: In the current environment of rapidly changing landscape of medical education, non formal peer-education proves to be a changemaking approach. After qualitative analysis of the pre and post training surveys of participants, we were able to see that the majority (85%) of them showed an above average level of knowledge and interest in GH Policy making and advocacy for change.

Take-home Messages: The study sheds light on the impact of informal peer education by using easy to access resources that are quickly redefining remote learning and can be a useful tool for increasing the capacity of medical students as global health leaders with deep understanding of policy and advocacy.
ABSTRACT:

Background: The AMEE ESME Student course aims to respond to the growing need for student involvement in medical education. It also intends to equip participants with a basic foundation of medical education which is pivotal to start their professional development as future medical teachers.

Summary of Work: The course provides a unique window of opportunity for students that lack prior experience in medical education. With the implementation of its multi-threaded programme that introduces students to key topics in medical education, it aspires to empower them to begin developing the knowledge, attitudes and skills set that is paramount for their future development as medical teachers, scholars and leaders in medical education. Currently, students do not have a platform to share their post-course experiences. Therefore, this study aims to assess the potential impact of the course on facilitating the further development of its participants in medical education.

Summary of Results: The study consists of a broad analysis of four ESME Students alumni experience, who successfully completed the course in recent years, and seeks to follow their consequent progress in the field of medical education. Students perspective on the most important aspects of the course will be presented, underlining how they were used in practice during the many undertaken activities. Examples of developed projects will help to illustrate how the acquired knowledge influenced students self-improvement in areas such as research, advocacy or peer-to-peer initiatives. Furthermore, the authors being representatives of the larger student community, will attempt to broadly collect the experience of other ESME Student graduates.

Discussion and Conclusions: For many students, the ESME Student participation is an opportunity to begin their own medical education career. Observing students consequent progress may improve the course, as well as successfully advocate for the implementation of medical education knowledge into curricula. Students are eager to use the acquired knowledge in practice, getting involved in many local and international initiatives, and further spread the obtained experience on multiple levels, proving that the course may have a larger impact than currently considered.

Take-home Messages: Efficient and early transfer of medical education knowledge significantly increases students motivation, serving as the initial step towards achieving professional development in medical education.
SCOD12.3: SCOD - Students – Student as Teacher

SCOD12.3.4 Developing the student teacher: Impacts of a certificated MedEd programme on medical students’ learning and peer-teaching (9366)

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ABSTRACT:
Background: Approximately 80% of medical students engage in some peer-teaching during their time at medical school and the benefits are well documented (Topping, 1996; Pasquinelli and Greenberg, 2008; Yu et al., 2011), however, student teachers report feeling unsupported. Warwick Medical School (WMS) wanted to support these student teachers and to develop their appreciation of the pedagogical underpinnings of medical education.

Summary of Work: A new staff-student partnership created a 3-level (foundation, intermediate, advanced) certificated teaching programme (CTP to give students interested in teaching more opportunity to develop their skills. This involves attending three blocks of four to five intensive 90 minute faculty-led teaching sessions and conducting and gaining feedback from peer-teaching (total of 8 hours), and is assessed at each level by submission of reflections on their teaching practice. WMS employed a student intern to lead the development and run these new programmes bi-annually. The intended outcome was to improve students preparedness to teach peers and give them additional support, knowledge, theories and resources to enhance their own practice.

Summary of Results: This communication presents the initial findings of this project. All students surveyed from the first iteration (n=26) stated that they found the programme to be of benefit. Pre and post evaluations revealed a significant increase in mean scores across all categories relating to student preparedness and confidence in teaching. Furthermore, substantial free-text comments and submitted reflections indicate behavioural-level change in how students are responding to feedback when teaching. For example, by using new methods and applying new theories.

Discussion and Conclusions: The benefits of teaching students how to teach appears two-fold. It improves their conceptual knowledge of teaching and how fellow students learn. In turn, developing as a teacher helps students better understand the principles of learning medicine, in part by improving their understanding of the intention behind the learning modalities employed by faculty.

Take-home Messages: Developing student teachers brings an array of benefits to both students, peer-teachers and the wider faculty, in addition to the career-related benefits to developing their teaching skills. This targeted support develops their confidence as learners & teachers, bringing us closer to a real students-as-partners paradigm-shift; one that will be invaluable throughout their medical career.
#SCOD13.1: SCOD - Surgery Education

# SCOD13.1.1 Education in the consenting process for tomorrow's surgeons (7943)

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ABSTRACT:
Background: The issue of obtaining informed consent within medical and surgical practice is becoming ever more problematic. With increased litigation within this field, are doctors doing enough to obtain informed consent? More importantly, is enough being taught in medical schools to prepare the next generation of doctors to be confident in obtaining informed consent? The aim of this literature review is to evaluate whether medical students are being thoroughly educated on informed consent to prepare them for practice.

Summary of Work: Using the search term Medical students informed consent teaching within PubMed, any relevant papers were extracted and analysed.

Summary of Results: Available literature points to a dearth of evidence in this field, but also suggests there is not enough in the medical curriculum to make student doctors feel confident when dealing with informed consent.

Discussion and Conclusions: Conclusion: More attention needs to be paid to this ethical dilemma in the medical school curriculum. In spite of solid evidence that training in obtaining consent better equips doctors to handle complex situations, there is an obvious shortage of attention to integrating this aspect of ethics in our current medical education. With the lack of evidence in this field, it is clear that more research must be done in developing a better curriculum for students. Furthermore, teaching practices need to adapt to the ever-evolving field of ethics, to see how possible interventions could impact these students, and what may work best in strengthening the confidence of our future doctors.

Take-home Messages: More must be done in the teaching of the consenting process in medical school to better prepare the next generations of surgeons.
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ABSTRACT:

Background: Non-technical skills (NTS) have emerged as a vital area for improvement within surgery in the last decade. This study aims to develop and evaluate a Non-technical Skills for Urological Surgeons (NoTSUS) training curriculum and assessment scale.

Summary of Work: This international, observational and longitudinal study utilised Delphi methodology to refine the curriculum contents and rating scale. Sessions were delivered with up to 4 participants, where each candidate undertook an independent scenario within the validated full immersion simulation environment. Candidates were assessed using both the NoTSS (Non-technical Skills for Surgeons) and NoTSUS rating scales by NTS-trained and non-trained experts. A post-training evaluation survey was distributed.

Summary of Results: 62 participants undertook the NoTSUS course. The NoTSS and NoTSUS scales correlated well, with a mean difference of 3.3 in the overall total (p = 0.10, r = 0.53). However, there was significant differences in scores between the NoTSS-trained and non-trained raters (n = 28, p = 0.03). Significant improvement was shown throughout the four simulation scenarios in each session upon a one-way ANOVA test (p = 0.02). Neither level of ureteroscopy experience (p = 0.28) nor level of overall clinical experience (p value = 0.78), determined by training years, impacted mean NoTSUS scores. There were no statistically significant differences in NoTSUS scores between participants who had previously undertaken a form of NTS training (n = 15) and those who had not (n = 47; p = 0.57). The curriculum received positive feedback from participants and demonstrated educational value and acceptability.

Discussion and Conclusions: The NoTSUS curriculum demonstrated high educational value for NTS training aimed at urologists, with marked improvement throughout sessions. Correlation of NoTSUS and NoTSS scales proves its suitability for evaluating NTS in future training. Demonstration of inter-rater reliability indicates that the scale is reliable for use in assessment by expert faculty members, whilst the difference between NoTSS trained and non-trained raters shows the importance of training the trainers. Finally, qualitative feedback from participants suggests gain of transferrable skills over the course.

Take-home Messages: This curriculum is a valuable addition to surgical training regardless of participants previous experience, but to remain reliable when evaluating NTS, training the trainers is important.
#SCOD13.1: SCOD - Surgery Education

#SCOD13.1.3 Online small group discussions in orthopedic trauma: Recommendations based on participant feedback (8048)

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ABSTRACT:
Background: Small group discussion (SGD) is a well known educational method to promote active learning. In 2020 many educational opportunities had to shift from face-to-face to online. Best practices for running SGDs in face-to-face events are described in the literature, however, little has been reported about online versions. The aim of this study was to define what works best for online SGDs in terms of group size and composition and to formulate best practices based on participant feedback.

Summary of Work: We designed an online course for surgeons managing upper extremity trauma consisting of weekly SGDs delivered as 8 modules covering different anatomical areas (clavicle, scapula, humerus, etc.). Participants were pre-assigned into groups of either one faculty with five participants or two faculty with eight participants. We collected feedback from 103 registered participants from Europe, Middle East, and Africa over the 8 weeks in multiple ways (open text questions after each module to identify what went well and what could be done differently, multiple-choice questions and a post event evaluation at completion of the course, and 2 focus groups).

Summary of Results: For our course participants the optimal way to run online a SGD was having 2 faculty with 4-5 participants (80%), rotating to different faculty every week (67%), and interacting with peers from different countries (95%). Pre-course assessment questions and pre-recorded presentations enhanced the online discussions for 82%. 83% agreed each 90-minute module was adequate for 3 cases. 46% reported that 8 weeks made the course too long and 86% suggested online SGDs should continue once face-to-face education resumes. From open text comments, we identified what worked well (cases/content, faculty, participant engagement, technical support) and what could be done differently (more extensive technical and connectivity checks, different time scheduling, and more supporting materials).

Discussion and Conclusions: Gathering feedback from participants when running new types of educational activities is best practice to ensure their experiences can be applied to future events. Based on our data, we identified recommendations for participants and faculty to optimize future online SGDs.

Take-home Messages: Small group discussions can be run effectively online.
ABSTRACT:
Background: Clinical reasoning is one of the core competencies for medical doctors. It has been a challenge to teach clinical reasoning effectively. Our university introduced online active case-based learning for preclinical students using patient encounter videos in 2020 modified from an in-person course. This is a study to describe our modified course to teach clinical reasoning for undergraduate preclinical third-year medical students.

Summary of Work: In 2020, online active case-based learning was introduced. A total of 129 students were registered for this course. Students were divided into a group of 6 or 7 students. Students were provided with patient information using e-learning website. Patient history was provided using the pre-recorded simulated patient encounter videos played by the faculty members. Other information including physical examinations and laboratory testing results was provided by a written format on our university e-learning website. Students were instructed to discuss the patients problems, pathophysiology, and differential diagnosis.

Summary of Results: After completing the organ-based courses in English, our students were taught clinical reasoning in Japanese for the preparation of clerkship as fourth-year clinical medical students for Japanese-speaking patients. A total of 37 symptoms were taught for clinical reasoning in this course. Among them, twelve symptoms were taught using the patient encounter videos. After each session, meeting with teaching assistants among the third-year students were held to adjust the course with the faculty.

Discussion and Conclusions: Online active case-based learning provided students with more self-directed learning. Students met as a group after sufficient individual learning which was different from an in-person course where group discussion started from the beginning of the work. Although students had some difficulties to pursue group discussion online at the beginning, as the course proceeded, students felt more comfortable to concentrate on learning the material.

Take-home Messages: Online active case-based learning has promoted contextual fidelity, transfer of knowledge, and self-directed learning among preclinical medical students.
# SCOD14.1: SCOD - Teaching & Learning – Clinical Teaching

# SCOD14.1.2 Honing Therapeutic Relationship Communication Skills: A report of the holistic care training for undergraduate medical students in Taiwan (9073)

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ABSTRACT:
Background: The notion of the therapeutic relationship competence cannot be taught but be honed has been address by Carl Rogers who proposed the person-centred theory in 1965. The study has adopted the theory as the theoretical framework of the holistic care training curriculum for undergraduate medical students understanding patients through narrative and developing the therapeutic relationship communication skills. This three-month curriculum consisted of didactic lectures, mapping patients needs through narrative and developing the therapeutic relationship communication skills.

Summary of Work: A pre-posttest study was conducted. A sample of the medical students from one medical school in northern Taiwan participated the training programme, and randomly assigned to two groups: general medicine (GM) and general surgery (GS). After receiving the holistic care training, the participants experienced either GM or GS clinical practice accordingly for three-month. The self-scored Mandarin-Chinese version of the Barrett-Lennard Relationship Inventory mini version (B-L RI:MC-12) was administered before (T1) and after (T2) the training. Student t-test was used to examine the training effect and the general liner repeated measure (GLM) were performed to compare the difference between groups.

Summary of Results: Fifty-two participants for each group (GM=52, GS=52) were randomly recruited in this study. A significant difference in the therapeutic relationshipt competence was noted over time $[F(1) = 188.30, p= .000]$ with T1 [Mean=9.98, SD=10.61] and T2 [Mean=25.95, SD=5.329]. However, there was no significant differen$ce between GM and GS $[F(1) = 1.77 , p=.187]$, but shown a significant difference in changes between two groups over time $[F(1) = 4.25 , p=.042]$.

Discussion and Conclusions: The three-month holistic care training programme could significantly improve the therapeutic relationship and communication skills for undergraduate medical students. This study could be developed as a long-term assessment and further evaluated patients clinical outcomes for the holistic care training curriculum in the future.

Take-home Messages: This study provides an evidence-based report on the application of person-centred holistic care communication skills in medical practice and the integration of narrative clinical experience would enhance the therapeutic relationship skills for undergraduate medical students.
SCOD14.1: SCOD - Teaching & Learning – Clinical Teaching

SCOD14.1.3 Recognition of the essential skills related to doctor-patient communication for medical undergraduates in Sri Lanka (9044)

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ABSTRACT:
Background: Effective and supportive communication is an essential element of the doctor-patient relationship. In recognition, communication skills have become an integral component of undergraduate medical curricula globally. However, there is wide variation in the emphasis placed on components of communication taught in different local medical schools. This study aimed to achieve consensus regarding essential doctor-patient communication skills to be taught and assessed in local undergraduate medical curricula.

Summary of Work: Consensus was achieved in two stages. In Phase I, members (n=14) of the Sri Lanka Medical Associations Expert Committee on Communication in Healthcare (a national committee of healthcare professionals with expertise in communication skills) rated the 71 items of the Calgary-Cambridge Observation Guide based on perceived importance for local undergraduate medical curricula. A web-based form was utilised and Content Validity Index (CVI) was used to identify essential items. Through iterative rounds of feedback and discussion, the committee finalised the list of essential items, and grouped them into broader categories. A consensus conference (Phase II) comprising a more diverse group of stakeholders of healthcare (n=21) was conducted to achieve agreement regarding the most essential items in the list developed in Phase I. Participants first suggested additional items of local relevance to add to the list. In groups, they then rated each item for perceived importance. Modal distribution of responses was used to identify consensus regarding the most essential items.

Summary of Results: In Phase I, 53 items achieved a CVI>0.78 (cut-off to identify essential items). These were grouped to form 36 broader items. In Phase II, 34 of the initial 36 items achieved consensus as essential. Two (sets and confirms an agenda with patient and asks several appropriate questions) were agreed to be non-essential. Three more items of importance to the local context, were suggested during the conference - speaks in a language appropriate to the patient, addresses patient appropriately and manages time effectively. All three achieved consensus as being essential.

Discussion and Conclusions: The study enabled identification of 37 essential skills related to doctor-patient communication to be included in local undergraduate medical curricula.

Take-home Messages: It is important that undergraduate medical training develops essential, locally relevant doctor-patient communication skills in trainees.
SCOD14.1: SCOD - Teaching & Learning – Clinical Teaching

SCOD14.1.4 OSCE.AI: A novel medical education smartphone application offering simulated student history-taking (8479)

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ABSTRACT:
Background: With the increasing ubiquity of technology and smartphones, OSCE.AI is a smartphone application (app) offering conversation-based simulation training for medical students to practice patient history-taking, specifically in relation to Objective Structured Clinical Examinations (OSCEs). The app comprises artificial intelligence chatbots that interact with and respond to students similarly to real patients. Students can choose between 8 presenting complaints and within each presenting complaint, 1 to 3 patients of varying demographics. Upon completing each history, students are presented with tailored mark schemes providing feedback based on conversation intents triggered and a summary page on each condition presented.

Summary of Work: This study presents the results of a user survey following the apps pilot release. The survey was distributed to the mailing list of present OSCE.AI users in January 2020, with 3 quantitative questions pertaining to the chatbots, feedback and case summaries, as well as 2 qualitative questions on positive and negative feedback on app features.

Summary of Results: 19 responses were received, of which most respondents were in their third and fourth year of medical school (36.8% each). The mean ratings of the chatbots, mark schemes and case summaries out of 5 were 3.79, 3.89 and 3.79 out of 5 respectively. Positive feedback mainly cited the apps interactive nature (n=5) and easy-to-use interface (n=7). Conversely, however, users described inconsistencies in triggering the marks (n=9) and the limited number of cases (n=2).

Discussion and Conclusions: Particularly during the COVID-19 pandemic, artificial intelligence chatbots can offer medical students and educators a remote solution to improving student simulation practice. Future steps for OSCE.AI include expanding the number of cases provided, improving the accuracy of mark scheme triggering, and incorporating examination and investigation results into the chatbots. There is also the possibility for medical schools to create custom chatbots in line with their curricula, as well as to expand the simulated chatbots to cater to post-graduate medical examinations or even to other industries such as nursing or pharmacy.

Take-home Messages: This pilot survey illustrates the feasibility of OSCE.AI as a novel way for medical students to remotely practice patient history-taking through the use of simulated chatbots.
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ABSTRACT:
Background: The use of mobile devices among medical students and residents to access online material in real-time has become more prevalent. However, at present clinical training sites, one of the chief complaints by teachers is that students are using their mobile devices and getting distracted. In addition, most literature focused on the technical/functional aspects of mobile use. Our research goes beyond current technical/functional aspects of mobile use and explores on the students, doctors and patients in-depth perceptions towards the use of mobile devices in clinical settings.

Summary of Work: This research employs a combination of quantitative and qualitative data collection method. An electronic survey was distributed to all Year 3 to Year 5 medical students and medical residents on their perception in using mobile devices in clinical teaching and learning. Semi-structured interviews were conducted with the doctors and patients to explore their perceptions.

Summary of Results: Survey findings showed that most medical students used their devices to find drug information and practice guidelines. The majority of the students picked Up-To-Date followed by Google as the recent medical resources that they use. Key barriers that students often encountered during the use of mobile devices were internet connectivity in the clinical settings, uncertain information searching and technical issues. Thematic analysis of the interviews revealed four themes - general usage by students which includes the frequency, purpose and setting, receptivity of the use of mobile devices by students, features in selecting resources for mobile learning and limitation in the current use of mobile devices for learning.

Discussion and Conclusions: Inevitably, mobile devices are widely used as a learning tool by medical students in clinical settings. However, the experiences of the use of mobile devices are much more sophisticated and dynamic based on the data gathered, especially in front of doctors and patients.

Take-home Messages: Patients might appear to be receptive and open-minded, but the ambivalent between values and the use of mobile in front of them come into sight when probed further. Respect, etiquette and decorum are the values which were highlighted frequently by the patients and doctors.
ABSTRACT:

Background: Holistic healthcare is defined as full patient care with the consideration of patients need physically, emotionally, social-economically and spiritually while they respond to the illness and the effect of the illness on the ability to meet their self-care needs. Patients might develop particular or greater supportive care needs on the patient pathway which was indicated by NICE Improving Outcome Guidance for Support and Palliative Care for Adults with Cancer (2004). Hence, this study aimed to develop a comprehensive inventory to assess medical professionals competence of performing care holistically.

Summary of Work: The Holistic Care Competence Inventory (HCCI), formulated on the PEPSI COLA AIDE MEMOIRE given by West London Cancer Network, was developed as a 12-item scale to assess medical professionals care competence towards patients physical, psychological, spiritual concerns and the state of social support. A sample of 309 undergraduate medical student were randomly recruited from one medical university in Taiwan. They completed the HCCI online. The reliability and construct validation using the principle component analysis technique were performed.

Summary of Results: 285 effective questionnaires (92.2%) of 309 were responded. Reliability of the HCCI using the Cronbach’s alpha was .950. The PCA, with Varimax rotation, yielded a one-factor model termed the holistic care competence, which explained 64.643% squared loading of the total variance and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)=.941.

Discussion and Conclusions: The study has indicated a promising result of HCCI, which could contribute to research and extend the border of holistic care delivery. It has provided an evidenced-based report to evaluation the holistic care competence of health professional. In this study, it also indicated a promising validity of the inventory which might assist medical educators to evaluate the training effect of undergraduate medical students in Taiwan.

Take-home Messages: 1. The study promisingly concluded that HCCI could contribute to research and evaluate the delivery of holistic care. 2. It indicated a promising validity of the inventory which might assist medical educators to evaluate the training effect of undergraduate medical students in Taiwan.
#SCOD14.1: SCOD - Teaching & Learning – Clinical Teaching

# SCOD14.1.7 Evaluating the implementation of a Longitudinal Integrated Clerkship for all year four medical students at Newcastle University, United Kingdom (9778)

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ABSTRACT:
Background: Due to the growing evidence of Longitudinal Integrated Clerkships (LICs), 329 year four medical students started an LIC in September 2020 at Newcastle University, UK. Students spend up to one day each week in three clinical placements (medicine, surgery and general practice) over 23 weeks. Students have one supervisor per placement and are expected to follow seven patients over multiple encounters across their LIC. This is known as their patient panel. To the best of our knowledge this is the largest LIC worldwide. Given its scale, an evaluation of the LICs implementation has taken place for its ongoing development for the current and future year four medical students. Aim: To evaluate the implementation of the LIC as described by students and supervisors.

Summary of Work: All students were invited for interview. Respondents were purposively sampled, using an online questionnaire, to achieve maximum variation. Interviews were conducted early on in the students placement, and at the end of their LIC. All supervisors were invited for interview at the mid- and end-point of the LIC. The proposed sample size was 50 and 30, students and supervisors respectively. All interviews were conducted by telephone. Audio-recordings were transcribed verbatim with identifiable information removed. Data was thematically analysed by two authors independently.

Summary of Results: The main themes from the data will be reported. Recruitment and interviews are ongoing for both groups. 45 students completed an interview between weeks 6-10 of the LIC. 26 supervisors have agreed to be interviewed between weeks 15-18 of the LIC. 18 interviews have been completed so far.

Discussion and Conclusions: Findings will generate discussion and help support the ongoing development of the LIC for the current and future year four medical students.

Take-home Messages: Given the scale of the LIC at Newcastle University it is imperative an evaluation of the course is performed to support its ongoing development.
#SCOD14.2: SCOD - Teaching & Learning – Teaching & Learning Methods

# SCOD14.2.1 Intentional Adding of a Wrong Element in the Answer-Key for the Team Readiness Assurance test (8896)

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ABSTRACT:

Background: The team readiness assurance test (tRAT) of the conventional team-based learning (TBL) depends on creating interactive students’ discussions about the same questions offered in the individual readiness assurance test (iRAT) till reaching a proper answer. Faculty of Medicine, Helwan University adopts the TBL as a method of learning. Some studies reported that TBL needs to be more interactive, and the provided instructor feedback is not sufficient. Students feel that TBL gets boring with time. We aimed at increasing students’ motivation, interaction, and effectiveness by modifying the tRAT phase of the TBL.

Summary of Work: The instructor used printed 10 case-based multiple-choice questions (numbered 1-10) with 4 distracters for each question (designed as letters a-d) during a basic Pathology course for 400 students. Students’ teams were handed answer-keys for the questions. In the keys, all distracters’ letters for each question were covered by stickers. Students needed to remove the sticker over the chosen letter to check the answer. All teams had the same questions but not the same key. The instructor informed the students that one question has a wrong answer in the answer-key which differs between teams. Students were requested to define that question, select the correct answer and write an argument defending their selection. Students presented their arguments during the instructor clarification review step. Students’ feedback on the modified TBL was collected.

Summary of Results: Feedback demonstrated that the majority of students felt more motivated and challenged compared to conventional TBL. They reported feeling more self-efficient by discovering the intended mistake and denied feeling confused by the added wrong element. They had to focus more on the details of each case and used critical thinking to discover the wrong answer. Varying the intended wrong answer between teams avoided making the review step boring and created deeper thorough discussions in a more interactive fun session.

Discussion and Conclusions: Adding an intended wrong answer in the answer-key and varying it between teams boosted students’ learning in the tRAT stage of the TBL compared to the traditional TBL.

Take-home Messages: Medical students need new ideas to increase their motivation and interaction, hence the effectiveness of their learning.
#SCOD14.2: SCOD - Teaching & Learning –Teaching & Learning Methods

# SCOD14.2.2 Exploring Medical Students’ Perceptions of the Potential of 3D Printing In Anatomy Education (8117)

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ABSTRACT:
Background: Anatomy education forms an integral component of undergraduate medical education. 3D Printing has an emerging role in anatomy education. There is limited published qualitative research evaluating students experiences of using 3D printed models, and therefore the aim of this study was to assess the perceptions of medical students towards the possible applications of 3D printing in anatomy education.

Summary of Work: A qualitative research approach was taken to address the aims of the study. First year medical students at Anglia Ruskin School of Medicine studying cardiovascular anatomy were given a 3D printed model of a heart. 3D models were created using opensource software and a desktop 3D printer. Group interviews were conducted two weeks after distribution, and thematic analysis of the data was undertaken.

Summary of Results: 1. Students in this study reported positive experiences of using desktop printed 3D models and found them sufficiently detailed to benefit their learning 2. The models were most useful in supporting self-directed learning away from campus and having a physically tangible resource was felt to be beneficial 3. Students felt the models could be integrated and used with existing teaching and resources, but shouldn’t replace existing teaching approaches 4. A number of possible innovative uses of 3D printed models in anatomy education were suggested by the participants.

Discussion and Conclusions: This exploratory study identified that students had positive experiences interacting with the models provided to them. They stated that the models were most useful in supporting their self-directed learning, highlighting that the opportunity to take a physically tangible object home could be useful for students who cannot regularly visit campus. This is a particularly pertinent finding in the context of COVID-19. Students in the study suggested a number of approaches to how 3D printed models could be integrated with and innovate their anatomy education, and there are a number of interesting areas future research could explore.

Take-home Messages: 1. Desktop printed 3D models may be used to effectively support students self-directed anatomy learning 2. The potential for the models to be taken away from campus offers a number of possibilities as flexible learning resources, especially when face to face teaching may be restricted
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ABSTRACT:
Background: Because of the complicated concepts and terminology, young nursing students struggle with keeping in memory for anatomy and physiology course. Our previous studies indicated the intervention program of flipped-classroom increased the academic achievement on the course. The present study further assessed the effectiveness of an integrated lecture with a note-taking strategy for learning outcomes.

Summary of Work: In the present study, 224 second-year nursing students which were age around 16 were participants enrolled in a 5-year program at a junior college in Taiwan. A total of 131 students in three classes were in the control group, which was subjected to a conventional lecture approach, and the other students in two classes were in the experimental group. The teaching strategies of the experimental group were based on the flipped-teaching classroom which combined with pre-recorded lectures and note-taking. Four unified proposition exams by the two-way specification tables were used as summative assessments. Every exam contented 50 multiple-choice questions which were included remembering, understanding, applying, and analyzing questions. The repeated measurement analysis of variance was used to examine the differences in learning outcomes. Item analysis was used to assess the moderate difficulty of the exam questions for all tests between experimental and control classes.

Summary of Results: Although the experimental showing the higher average scores of four exams, the scores of the two groups were not significantly different through tests varied with time. The average moderate difficulty of a total of 200 questions in four exams was 57.2±18.0. The average moderate difficulties were 59.9±18.8, 56.5±16.6, 56.9±15.7, and 51.9±17.1 for remembering, understanding, applying, and analyzing questions, respectively. In total, the average moderate difficulty of all questions on the experimental classes was significantly higher than the control classes (p-value: 0.058), which difficulty showed 58.6±18.7 and 56.2±17.4, respectively. Besides, the average moderate difficulty of understanding questions on the experimental classes was significantly higher than the control classes (p-value: 0.016).

Discussion and Conclusions: Based on the flipped classroom design, our study indicated the note-taking strategy increased the understanding ability in anatomy and physiology course.

Take-home Messages: A flipped classroom design with the note-taking strategy improved the ability of the cognitive process for nursing students.
Emotional education is important in medical education. But it is hard to discuss and experience in the class. First, they pick one facial expression card randomly. One emotional phrase is written on each card and one real photo, which is correlated to the emotion. They use their facial expression to let the others guess the emotional phrase. Second, they write down the most outrageous sentence they heard at work. The guy who says to them could be their boss, colleague, patient, or patients family. Then they share it with the group. Everyone gives each sentence a rage index from 1(lowest) to 5(highest). Who has the highest score will present their group to compete with other groups. In the end, we have the most outrageous sentence for that day. We discuss why they write that sentence and why this score. And we bring some concepts about we tend to avoid self weakness feeling unconscious. Healthcare members have a chance to explore the feeling behind the anger. We observe who takes a long time to write down the sentence and discuss why. Some of them are using the self-protecting mechanism, so they don't really remember the detail well. On the other hand, some people write it down fast. But their anger index is relatively low. Some of them use the other protecting mechanism to press the anger. After discussion, they are asked to give the second score to the previous sentences in the group again. Some of the scores decrease, some are the same, and some increase. We thought the score will decrease, but some score is in the opposite. After discussion, some of them feel they are not pressing now, so the score increase. Some of them realize the guy who says the inappropriate sentence may try to avoid their weak feeling too. Emotion education is important for healthcare members. Through gamification activities, we will have a chance to let them embrace their feeling, including the bad feeling. We hope they could have a better way to deal with their emotion instead of pressing or ignoring them.
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ABSTRACT:
Background: In health professions education, there is a constant influx of new information. Accreditation bodies continuously update knowledge and skills that are required, but rarely provide explicit information about sunsetting content or the level of depth required for new content. Didactic coursework increasingly emphasizes higher order cognitive processes. These factors all exert pressure on the knowledge and skills that serve as the foundation of student learning. Adaptive learning systems offer individualization to the learner so that a student’s time spent learning outside the classroom is allocated in a way that maximizes retention and personalization.

Summary of Work: Over the past year, the UNC Eshelman School of Pharmacy has endorsed the development of adaptive learning platforms to offload foundational knowledge and skills from in-class to a self-paced environment in two areas: medication information and pharmaceutical calculations. Development is currently ongoing.

Summary of Results: For pharmaceutical calculations, 45 unique categories have been assigned across 91 items. Historical student data is being processed through the platform in conjunction with machine learning. An adaptive learning pilot is planned for spring 2021. Medication information has been parsed into 10 core fact categories and spaced, interleaved retrieval practice with feedback has been piloted. Expansion to include core concepts and implement adaptive algorithms is underway.

Discussion and Conclusions: Implementing an adaptive learning platform requires buy-in from both the administration and faculty. Faculty consensus around content areas and breadth and depth of coverage must be developed. Instructors have to be willing to step outside the comfort of the conventional classroom and to be trained as coaches. Data necessary to delimit pedagogical algorithms often exist but need to be curated for coding and machine learning.

Take-home Messages: Adaptive learning can be a powerful tool to offset the ever-growing fund of knowledge in health professions education. Adaptive systems can individualize student learning and guide them through their didactic courses.
SCOD14.2.6 IP&C 2.0: An online, interactive curriculum to engage and teach medical students in Infection Prevention & Control practices (7441)

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ABSTRACT:
Background: Occupied with learning biomedical content, medical students may not be as motivated to learn about Infection Prevention & Control (IP&C). To better motivate and engage learners, we developed IP&C 2.0. This online curriculum is grounded in the self-determination theory, which posits that motivation requires the needs of competence, autonomy, and relatedness met. In IP&C 2.0, competence is achieved through educational puzzles, autonomy through choice in task completion order, and relatedness through peer collaboration.

Summary of Work: A multidisciplinary healthcare panel (student, resident, physician, nurse, IP&C practitioner) identified a list of IP&C knowledge (e.g. isolation precautions) and skills (e.g. hand hygiene) thought to be essential for medical students. This list was further refined to align with the Medical College of Canadas learning objectives. Teams of maximum 5 students worked through 4 learning stations of puzzles and activities on Google Forms, via Zoom breakout rooms. They tackled stations in any order. Afterwards, teams regrouped in the Zoom lobby, competing in a Kahoot quiz to immediately apply and retrieve learned knowledge.

Summary of Results: Students evaluation (n=65-66) of self-efficacy for session objectives significantly increased (p<0.001, one-tail repeated-measures t-test) pre- vs. post-session from 3.28/5.00 to 4.21/5.00, with large effect size (Cohens d=1.10). Average satisfaction scores (n=67) were 3.72/5.00 and 5.00/5.00 for mean and mode, respectively.

Discussion and Conclusions: The IP&C 2.0 online curriculum incorporates active learning and collaboration through interactive puzzles and activities. Educators can consider incorporating online puzzles to engage and teach content relevant to clinical practice, as this gamified approach improved self-efficacy and was rated overall satisfactory by medical students.

Take-home Messages: Infection Prevention and Control concepts and practices can be taught to medical students online in a gamified and interactive way to better engage learners. When designing online educational platforms, curriculum designers should pay attention to learners needs of competence, autonomy, and relatedness to increase motivation.
SCOD14.2: SCOD - Teaching & Learning –Teaching & Learning Methods

SCOD14.2.7 Investigating the Outcomes of the Team-Based Learning with Concept Mapping Pedagogy (9177)

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ABSTRACT:
Background: Team-based learning (TBL) has been introduced to medical education with the aim of shifting lecture-based knowledge transmission to peer-teaching and knowledge application. Here, we integrated concept mapping in TBL curriculum, each accounted for three sessions. In session 1, individual readiness assurance test (iRAT) is given to assess students self-study performances. Then, group readiness assurance test (gRAT) are conducted before a mini-lecture presented by subject matter experts. In session 2, three clinical cases are provided for students clinical reasoning exercises in the concept mapping format. In session 3, a final test is set to assess students individual learning achievements for the related subject matter. This cohort study aimed at investigating medical students academic performances after this novel TBL pedagogy.

Summary of Work: Both iRATs and final tests were composed of 10 multiple choice questions (MCQs) including 3 questions for clinical reasoning test and 7 items for memory and comprehension test. Each question worth 10 points with a full mark of 100 points. Paired sample t-test is used to compare iRAT scores with final test scores.

Summary of Results: Overall, 149, 155 and 155 medical students who completed both pre-test and post-test in the first, second and third TBL courses are included in this study. Final test scores were significantly higher than iRAT ones in all three courses (63.42±16.84 versus 50.20±18.43; 65.10±18.14 versus 47.81±14.87; 62.03±15.41 versus 48.71±18.68, all p < 0.0001). Interestingly, correct rate of the 3-item clinical reasoning test in final tests is significantly higher than those in iRAT in the second course, where students were asked to follow a more stringent concept mapping guideline (81.51±25.24 versus 53.76±26.15, p < 0.0001).

Discussion and Conclusions: Significant higher scores in final test indicate that students had better academic performances after engaging in TBL with concept mapping. TBL enables students to share their thoughts to solve the clinical problems within and between-groups. Meanwhile, concept mapping in TBL helps students integrate known information with new knowledge through exchanging ideas. Furthermore, a concrete guide for concept mapping helps students focus on the essential ideas of clinical correlations.

Take-home Messages: TBL along with concept mapping in medical education contributes to better performances in symptom-based diagnosis exercises.
ABSTRACT:

Background: Despite the consensus that medical education should include social behavioral sciences (SBS), previous studies have reported challenges and barriers faced during SBS implementation. Overcoming the barriers, such as time, educational resources, clinical relevance, and integration with the existing curriculum, we adopted an inquiry-based approach for SBS learning in General Internal Medicine/Family Medicine (GIM/FM) clerkship. In this approach, students learn through generating inquiries about topics related to SBS, which connect to their clinical experiences. This study explored the themes that the students could recognize through inquiring during their clinical clerkship.

Summary of Work: We asked 104 fifth-year medical students at Kyoto University, Japan, to generate inquiries about SBS topics during their two-week GIM/FM clerkship in 2019. After the clerkship, the students presented their inquiries in a small group session guided by one of the authors (FT, MM, TK, SK), and 84 out of 104 students provided presentation slides regarding their inquiries. Using the social constructivism paradigm, an inductive thematic analysis was conducted on the inquiries to identify their themes.

Summary of Results: From the 84 presentation slides, 96 questions were extracted. Five themes emerged from the analysis: 1) Range of doctoring - the inquiries about potentials and limitations of doctoring with the auxiliary verb should; 2) Unknown patient spheres - the inquiries focused on patients psychological conditions; 3) Relationships among the environments and cases - the inquiries with macro-standpoints (e.g., geopolitical or economic); 4) Concepts problematized contextually - the inquiries about social, structural, economic, and ethical problem definitions; and 5) Who is the subject - the inquiries about a subjects vagueness on decision making and care of dying patients.

Discussion and Conclusions: Although students rarely used specific SBS concepts or theories in their inquiries, the themes that emerged covered a broad range of SBS content. Moreover, the inquiries with should revealed that inquiring for the students could lead to considering moral behaviors in addition to obtaining SBS perspectives. Frequent problems in GIM/FM may be well correlated with the themes of the inquiries, which could be elucidated further by comparing other inquiries in other specialties clinical clerkships.

Take-home Messages: The inquiry-based approach for implementing SBS learning could develop varieties of inquiries embedded in each students clinical experiences.
ABSTRACT:

Background: Point-of-care ultrasound investigations (POCUS) are increasingly used in primary health care. The University of Bergen, Norway introduced ultrasound teaching for medical students during 2018. We aimed to develop and implement an obstetric-gynecologic ultrasound course in the curriculum, using small handheld ultrasound devices.

Summary of Work: Literature search and stakeholders discussion (obstetric-gynecologist, general practitioners and medical students) identified relevant obstetric-gynecologic POCUS examinations and developed course set-up: two weeks with lectures, knobology and supervised patient examinations, pre/post-course survey and post-course skill evaluation. Pilot-study where medical student performed selected procedure determined number of examinations needed to gain proficiency. Validation-study of handheld abdominal ultrasound evaluated feasibility in confirming vital intrauterine pregnancy during first trimester.

Summary of Results: Bladder volume measurements, third trimester fetal position evaluation and first trimester detection of vital intrauterine pregnancy were identified as most relevant investigations. The pilot testing (TT) suggested >5 supervised examinations sufficient for learning bladder volume and fetal position evaluation. The minimum gestational week the handicapped device could be used for early pregnancy vitality examination, was deemed undetermined. The validation-study, medical student (CS, JP) examined 100 first trimester pregnant women, identified that from gestational week 7 vitality could be detected with 79% positive and 100% negative predictive value. Two courses were attended by 15 (2020) and 12 (2021) fifth-year medical students. The pre-post MCQ results increased from median 65% correct (95% CI 56-77) to median 91% (95% CI 91-100, p<0.001 Wilcoxon Sign-Ranked-test). All students performed >5 examinations per modality; median 8.5 bladder, 8.5 vitality and 12 fetal position examinations. At course-end 26 of 27 students considered themselves capable of performing these examinations. Of 15 students randomly selected to demonstrate a modality, all succeeded.

Discussion and Conclusions: We have developed a two-week course in obstetric-gynecologic POCUS using a handheld device. Medical students achieved theoretical and practical skills in measuring bladder volume, determine last trimester fetal position and confirming early pregnancy vitality from week 7.

Take-home Messages: Bladder volume measurements, early pregnancy vitality and fetal position determination are suitable for a medical school ultrasound curriculum. Possibly a similar set-up could be used for post-graduate training for general practitioners.
ABSTRACT:
Background: Who hasn’t raised their eyebrows at a colleague for directly citing Wikipedia in an official report or presentation? Medical students are taught to fact-check their resources and only trust information published in peer-reviewed journals. Wikipedia is seen as an unreliable source of information and is therefore considered out of place in education. Concurrently, patients Googling a disease or a symptom will often end up at a Wikipedia page as the first hit.

Summary of Work: The following question was answered by means of a systematic literature search: Does Wikipedia provide added educational value for students in medical education? Potential studies were obtained through a systematic literature search in scientific databases Pubmed, Web of Science and Embase. 402 studies were identified of which six were included and reviewed.

Summary of Results: Two types of educational values of Wikipedia were identified: Wikipedia as a tool and Wikipedia as a goal. The difference between these two is that Wikipedia as a tool is based on the opportunity to discuss multiple subjects and outcomes through editing or reviewing a Wikipedia page. When Wikipedia is the goal, the main objective is the subject of the page that will be edited or written. The six courses found were structured differently and described different learning outcomes, such as patient communication and academic writing. The learning objectives that were most frequently mentioned can be summarized into three different categories: Academic skills - Knowledge - Content.

Discussion and Conclusions: This literature review found that Wikipedia has educational values affecting learning outcomes such as academic skills, collaboration and patient communication. Wikipedia as a platform provides multiple opportunities for implementation in medical education. Through active learning, students can be taught not only medical factual knowledge but also academic skills such as collaboration, academic writing, and referencing. Universities should make use of this platform to increase the skills of their students and additionally enrich the information that is available to the general public.

Take-home Messages: Wikipedia has educational values affecting learning outcomes such as academic skills, collaboration and patient communication. Using Wikipedia can potentially enrich the information that is available to the general public, while simultaneously teaching medical students said skills.
#SCOD14.3: SCOD –Teaching & Learning - Online Learning

# SCOD14.3.2 Roles and functions of a non-academic medical school Facebook page
(8147)

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ABSTRACT:

**Background:** Facebook is a well-established social networking platform which is commonly used by medical schools as an educational resource, but there are few studies assessing the roles of a non-academic Facebook page in medical education. Cardiff University’s C21 Facebook Page is a platform used by both faculty and the student body for non-academic social support, networking and information sharing.

**Summary of Work:** We collected and analysed C21 Facebook Page usage data to obtain descriptive information on reach, engagement and content. We also distributed an anonymised survey to evaluate and explore users interest in, experience of and engagement with the content.

**Summary of Results:** Of the 1021 posts on the page in 2019, the highest post-engagement rate occurred in the Student or Staff News category (13.5%) and the lowest in Medical Research News (3.5%). Survey feedback on the page was overwhelmingly positive (n=89; 84.8%), and respondents reported a high degree of trust (n=95; 90.5%) in the page. Students would like to see more CV-building opportunities advertised on the page.

**Discussion and Conclusions:** The C21 Facebook Page is an important resource in developing community within the medical school and facilitating student engagement with both the C21 course and wider medical opportunities. It is perceived as an appropriate channel of communication between the medical school and students.

**Take-home Messages:** Non-academic medical school Facebook pages, such as the C21 Facebook Page, facilitate student engagement with the medicine course, provide social support, and promote professional networking within and beyond the medical school community. Students value and place a high degree of trust in such pages, which they view as a supplement to, though not a replacement for, the more traditional forms of medical school-student communication such as email. Provided that professional boundaries are maintained, and information shared is scrutinised for reliability, Facebook pages are perceived as an appropriate medium of communication between the medical school and students. Non-academic medical school Facebook pages should ensure diversity of administrators to reflect the diversity of the student body and should place a particular focus on the advertisement of medicine-related opportunities to students.
ABSTRACT:
Background: Multiple benefits of mobile health (mHealth) apps have been identified such as enhancing individuals awareness of a disease, increasing adherence, promoting healthy lifestyles and inducing positive behavioural changes, as well as being cost effective (Mahmood et al., 2019). Literature emphasises the positive influence mHealth apps have regarding awareness, knowledge, and attendance towards screening programmes (Lee et al., 2014). The aim was to provide insight into the creation of a public health mobile app.

Summary of Work: A simple workflow methodology was developed to provide a framework for the creation of the app. A concept was identified, and a collection of requirements was collated, through discussions, literature, analysing apps, and public health information. The collection of requirements should consider; what is the need, what the user has to do, and how the app should respond. Data can be extracted from these requirements, by organising them into a hierarchy and identifying relationships between the requirements. This will provide a narrative on how each functionality is used by the user and the relationship and inheritance between the requirements, these functional requirements should then be considered when designing the app. The mood-board, storyboard and graphic design were combined to create a design outline and the creation of app content, 2D illustrations, 2D animations and information were combined to create an interactive mHealth app for the public.

Summary of Results: By outlining the system and functional requirements before the design development it ensures the functionality and flow of the app is optimal for the user. This allows the storyboard to show a true visual representation of the app and reduces the chance of design changes as a result of technical and functional adaptations. We successfully developed a simple workflow methodology that can act as a guide for developing a public health mobile app.

Discussion and Conclusions: The positive influence of mHealth apps on various aspects of health such as prevention, management care, support for patient groups and early detection (Jongerius et al., 2019) emphasises the need for more mHealth apps.

Take-home Messages: The workflow methodology developed can be used as a guide for medical educators in the development of future public health mobile apps.
Impact of the use of Virtual Reality in the learning of Middle Ear Anatomy: Proposal of a randomized controlled experimental study

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ABSTRACT:
Background: The use of Virtual Reality (VR) has been proposed as a complement to the cadaveric material employed in the human anatomy studies, which is specially important given the restriction on face-to-face education caused by the SARS-CoV-2 pandemic and the cadaveric materials low utility in the learning of tiny structures or difficult preservation ones, like the Middle Ear. Our objective is to assess the impact of a virtual reality scenario in the learning of Middle Ear anatomic structures.

Summary of Work: A middle ears VR scenario was created with emphasis on the anatomical landmarks of this cavity, which is also accompanied with a narration. In this research proposal we intend to recruit students from health professional careers who are taking Human Anatomy classes and randomize them into a VR group, where they will be taught Middle Ear anatomy with our scenario, or a massive class group, where they will be taught Middle Ear anatomy by a massive online class. Afterwards, we intend to evaluate their knowledge on middle ear anatomy with a test and compare both groups, alongside their opinions on their teaching method.

Summary of Results: We expect a better performance in the VR Group, shown by higher scoring at the test, in comparison with the Massive Class Group and a more positive perception of the experience and learning from the VR group.

Discussion and Conclusions: Many other studies have shown a better response of the students with different virtual tools, but there is no consensus in its utility in comparision with traditional methods. If we find better or equal results in the VR group, its use could be proposed as a complement to the study of human anatomy by traditional means, like cadaveric material.

Take-home Messages: We must take action in the face of the problems that surfaced by the Sars-CoV-2 pandemic, specially the ones that deteriorate the quality of the health professionals education. In that scenario the use of VR, alongside other virtual methods, could be a strong ally in this situation. Finally, the use of VR can also be proposed for structures that traditional means struggle to teach besides Middle Ear, like the mediastinum.
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ABSTRACT:
Background: There are over 3.81 billion worldwide active social media (SoMe) users. SoMe is ubiquitous in medical education, with roles in professionalism, blended learning, well-being and mentoring. Previous systematic reviews took place before recent explosions in SoMe popularity and revealed a paucity of high-quality empirical studies assessing its effectiveness in medical education. This review aimed to synthesise evidence regarding SoMe interventions in undergraduate medical education, to identify features associated with positive and negative outcomes.

Summary of Work: Authors searched 31 key terms through seven databases, in addition to references, citation and hand searching, between 16th June and 16th July 2020. Studies describing SoMe interventions and research on exposure to existing SoMe were included. Title, abstract and full paper screening were undertaken independently by two reviewers. Included papers were assessed for methodological quality using the Medical Education Research Study Quality Instrument (MERSQI) and/or the Standards for Reporting Qualitative Research (SRQR) instrument. Extracted data were synthesised using narrative synthesis.

Summary of Results: 112 studies from 26 countries met inclusion criteria. Methodological quality of included studies had not significantly improved since 2013. Engagement and satisfaction with SoMe platforms in medical education were described. Students felt SoMe flattened hierarchies and improved communication with educators. SoMe use was associated with both objectively and subjectively improved performance, however evidence for long term knowledge retention was limited. SoMe use was linked to adverse impacts upon mental and physical health. Professionalism was heavily investigated and considered important, though generally negative correlation between SoMe use and medical professionalism may exist. Training is required for both educators and learners to capitalise on the benefits of SoMe interventions.

Discussion and Conclusions: SoMe is enjoyable for students, may improve short term knowledge retention and can aid communication between learners and educators. SoMe professionalism remains a poorly understood phenomenon and lack of clarity in this domain hinders both learner involvement and educator innovation. Longer-term, higher-quality study is required to investigate professionalism concerns and potential harms.

Take-home Messages: SoMe should be used to support undergraduate medical education, but educators should exercise caution regarding potential harms. Future research in to SoMe should aim to clarify how, why, and in what contexts SoMe can best be employed.
#SCOD15.1: SCOD - Wellbeing

# SCOD15.1.1 Young Doctors’ Well-being (8548)

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**ABSTRACT:**
**Background:** The transition from student to doctor can be a stressful and difficult time for many. Some are affected more severely than others, which can result in a level of anxiety that can have a negative effect on the doctors ability to practice medicine safely and effectively. Pathological anxiety is documented to occur in a significant proportion of young doctors, and the proportion seems to rise. This is troubling, because stressed and anxious doctors have a higher risk of making mistakes, both minor and fatal, losing empathy as well as leaving the field of medicine for good. There is very little research done on the level of anxiety in young doctors in Denmark. One Danish survey done on well-being shows that young doctors can be characterized as a group of people that experience satisfaction with their work, but also a group where work challenges their mental health. It is important to investigate how prevalent the issue is in Denmark before in-depth research can be made on how exactly to improve the situation, which has the possibility to help doctors feel better and improve the level of patient care in Denmark.

**Summary of Work:** Design In a cohort design the information is gathered by two validated questionnaires: The state-Trait Anxiety Inventory (STAI) and Leeds Self-assessment of Anxiety General Scale (Leeds SAA General Scale) as well as questions concerning the participants background. Participants: First questionnaire: 150 medical students will be invited a month before graduation. Second questionnaire: approx. 122 doctors will be invited after working about a month.

**Summary of Results:** Half of the data has already been collected but not yet fully analyzed. The last results will be gathered in April of this year. However, from looking at studies done in other countries as well as the information we have gathered already, we expect to find a significant number of medical students and young doctors whose daily lives are affected by anxiety. The study is expected to be finished, at the latest, by the end of June 2021.

**Discussion and Conclusions:** Will be ready latest by August 2021

**Take-home Messages:** Will be ready latest by August 2021
SCOD15.1: SCOD - Wellbeing

SCOD15.1.2 Development and Validation of the Self-healing Assessment Scale for Community-dwelling Older Adults (9081)

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ABSTRACT:
Background: Health status, independence and social networks deteriorates with ageing, resulting in various problems for individuals, families and society. Self-healing, an intrinsic healing capacity, helps individuals body and mind to regain wholeness and is significant in the pursuit of ones own healthy ageing and being independence. The Self-healing Assessment Scale (SHAS) is a new scale for assessing self-healing capacity.

Summary of Work: The aim of this study is to develop and preliminarily test the reliability and validity of SHAS for community-dwelling older adults, which conducted in three phases. The definitions of self-healing were synthesized from our knowledge of the literature regarding the ontology of self-healing and panels, containing 25 experts. The initial version of SHAS was developed by the in-depth interviews of focus groups and panels. Six experts validated the content of the preliminary 12-items questionnaire. A cross-sectional survey, a total of 500 community-dwelling older adults with a mean age of 71.76, was then conducted for preliminary reliability and validity.

Summary of Results: The content validity indices were satisfied. A principal component analysis method with an orthogonal rotation was performed for explorative approval. Twelve items were retained and three factors were identified, namely, physical and mental state, socioeconomic and environmental status, and independent lifestyle, that explained 65.8% of the variance. The standardized factor above .60 obtained by confirmatory factorial analysis indicated good convergent validity. The relationship between self-healing and health-related quality of life was confirmed via concurrent validity testing.

Discussion and Conclusions: The SHAS can facilitate the evaluation of factors associated with community-dwelling older adults self-healing capacity. Additional studies using SHAS must assess its applicability for evaluating the relationships between SHAS and independence in older adults.

Take-home Messages: 1. The intrinsic self-healing capacity is crucial for being independence in older adults.
2. This study developed a reliable instrument to assess self-healing capacity for community-dwelling older adults.
3. The 12-item questionnaire can be administered quickly in clinical practice and obtain valuable information for both health professionals and researchers.
#SCOD15.1: SCOD - Wellbeing

# SCOD15.1.3 Improving Workplace Mental Health: An Evaluation of Managers’ Perceived Ability to deal with Workplace Mental Health Issues (8559)

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**ABSTRACT:**

**Background:** Unresolved workplace mental health disability issues have the potential to produce deleterious outcomes including employee absenteeism, presenteeism, reduced productivity, increased turnover, and other organizational behaviors, especially in stressful environments such as healthcare. This evaluation study determined the impact of a Morneau Shepell Workplace Mental Health Leadership Certificate (MHLC) training program at Queens University. We evaluated managers perceived ability to understand, explain, describe, and express confidence in managing employees with various mental health issues in the workplace.

**Summary of Work:** Using descriptive and inferential statistical techniques, we analyzed training evaluation scores of five cohorts of participants at pre-training (n =109) and three-months post training sessions (n =73) with a response rate of 67%.

**Summary of Results:** We found statistically significant differences between pre- and post-training evaluation scores. Post-training scores reflected higher increases in participants perceived ability to manage all the aspects of mental health issues examined ($t = -15.39, p < 0.001$), particularly with respect to managers ability to explain why the Declining Behaviour/Performance Model is the best practice approach to addressing an employees declining mental behaviour in the workplace ($t = -16.15, p < 0.05$). Also, participation in the training program significantly increased perceived overall ability to manage workplace mental health issues ($b = 1.023, p < 0.001$) after accounting for effects of demographic factors.

**Discussion and Conclusions:** These findings demonstrate the importance of developing and implementing mental health leadership programs for the workplace. The MHLC program can be adapted and implemented in other workplaces to enhance leaders ability to manage mental health issues.

**Take-home Messages:** It is important that professional development is available for healthcare leaders to ensure they are confident in effectively addressing and managing mental health issues in the workplace.
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ABSTRACT:

Background: Clinical environments due to their special nature are one of the sources of stress in medical residents. We investigated burnout and its related factors among medical residents in Kerman University of Medical Sciences (KUMS), Iran using the Oldenburg Burnout Inventory (OLBI).

Summary of Work: A cross-sectional study carried out on 160 medical residents of KUMS (Kerman, Iran). All residents in the academic year 2019 were selected using the census method. Data collected using a questionnaire containing demographic data and a Persian version of OLBI. The OLBI is a self-report scale with eight questions within each of the two subscales (disengagement and exhaustion). Responses to each item are on a five-point rating scale (1 = Strongly disagree; to 5 = Strongly agree). The Persian version of OLBI was provided through translation re-translation and culturally adapted. Data analyzed by SPSS version 19 and Lisrel 8.8. The face and content validity of the questionnaire was confirmed by some medical experts. The reliability of the questionnaire was determined in a pilot study using internal consistency (Alfa Cronbach). The exploratory and confirmatory factor analysis was also employed. The study was approved by the research review board at KUMS.

Summary of Results: Of 160 medical residents, 55.3% were female with a mean age of 30.53±2.9 years. Burnout was higher among female and first-year residents. Exploratory factor analysis, (P=0.001, χ²=1099.9, df=120) indicated a proper correlation of factors, adequacy of sampling, and the justifiability of factor analysis. The Cronbach's alpha coefficient was 0.74 for the first factor and 0.85 for the second factor. The model had acceptable goodness of fit indices (χ²/df = 3.6, RMSEA = 0.15, SRMR = 0.08, IFI = 0.91, CFI = 0.91, NFI = 0.89, and NNFI = 0.9).

Discussion and Conclusions: The Persian version of OLBI is a simple, valid, and reliable tool and can be used to assess the symptoms of burnout among residents to consider timely interventions.

Take-home Messages: The Persian version of OLBI can be used to assess burnout in clinical settings.
SCOD15.1: SCOD - Wellbeing

SCOD15.1.5 Assessing a depression situation among medical students and depression management system in medical school: A preliminary study from a middle-income country medical school (8456)

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ABSTRACT:
Background: Previous studies indicated that medical students were the group of people who have a higher risk of those mental episodes than other students. Mental health and well-being programs were established in many medical schools, including the Faculty of Medicine Ramathibodi Hospital. This study aimed to evaluate the situation and identify gaps for further faculty improvement by collecting the prevalence of depression among medical students and its associated factors and exploring faculty interventions to prevent and provide support to those with mental health problems.

Summary of Work: We conducted a mixed-method study during 2020-2021. First, all academic years of medical students from the Faculty of Medicine of Ramathibodi Hospital, Mahidol University, were invited to join our online survey voluntarily to assess the mental status and collecting associated data (n=359). Second, the class leaders, student organizations, and professors were in-dept interviewed about the faculty's mental health interventions and program outcomes.

Summary of Results: The prevalence of depression among medical students in our medical school was 28.4%. There are five factors significantly associated with depression; these include family psychiatric history, presence of suicide history, using energy drink, having stress, and having anxiety. The online study, academic year transition, and study intensity were the causes of stress among students. Various depression management programs are generated from all three levels: classmate, student organization, and faculty. However, survey results showed less awareness of those programs and no integration among all components. The integrated student well-being center was planned to establish in the next semester to solve the depression management systems problems.

Discussion and Conclusions: There are numerous interventions from all components to deal with this high prevalence of depression. However, systematizing all components and building a comprehensive protocol is required. A framework of depression management in medical school was proposed as a model to deal with students with depression.

Take-home Messages: Continuity in assessing mental health situations and evaluating programs effectiveness might be worthwhile for all medical schools.
ePosters (On Demand)

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#EPOD-SE1 Why We Do What We Do: Exploring Positive Experiences in Surgical Practice (8392)

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ABSTRACT:

Background: Epidemic levels of stress and burnout negatively impact surgeons (and physicians more broadly), as evidenced by leaves of absence and early retirement. Yet many surgeons continue to thrive. Renewed focus on, and deeper understanding of, the positive experiences in surgical practice may provide critical insights for understanding how to keep surgeons in the field and help them flourish. This study sought to understand positive lived experiences in surgical practice through a multidimensional lens.

Summary of Work: Semi-structured interviews were conducted with 19 staff surgeons. A constructivist grounded theory methodology guided all stages of data collection and analysis. Interview questions explored positive contributors to surgeon experience.

Summary of Results: A conceptual framework was co-constructed with participants to describe contributors to positive experiences with five major components: 1) Mastery, 2) Meaning, 3) Flow, 4) Institution, and 5) Relationships. These themes interacted with one another through moderating factors such as technical mastery, community, and innovation. Participants reported that their careers positively impacted their lives in several ways, from the objective (e.g. developing technical mastery) to the existential (giving meaning to their life). As one surgeon recounted; I dont think there are many things that you can do with your life that can get you closer to living a life worth trying to make sense of all of this than medicine. (P15)

Discussion and Conclusions: Promoting positive experiences in surgical practice may require both top-down and bottom-up strategies, involving the individual surgeon and institution. Individual strategies may include psychological skills training and mindfulness practice, while institutional-level changes may include maintaining protected OR spaces or shifting workplace cultures that glorify overworking.

Take-home Messages: Surgery is a highly demanding yet rewarding career that has ample opportunity for cultivating meaning, flourishing, and individual growth. Understanding contributors to positive experiences may help individuals identify strategies for thriving, gaining control, and finding enjoyment, despite being embedded in the complex and often overburdened hospital system.
# EPOD-SE: Surgery Education

**#EPOD-SE2** Institutional Factors in General Surgery Resident Wellness and Burnout: Identification via a Modified Delphi Technique (9102)

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**ABSTRACT:**

**Background:** While there has been significant focus on individual and programmatic factors impacting general surgical residents' wellbeing and burnout, the effect of the greater institutional macrocosm has not been well studied. Our work seeks to identify organizational factors that may be implicated in resident wellness.

**Summary of Work:** Using a modified Delphi technique, a survey structured around six domains of the Maslach Burnout Theory (workload, control, reward, community, fairness, values) was distributed to wellness stakeholders at two institutions. Participants identified factors that may be implicated in resident wellness and burnout. Two subsequent multiple-choice survey iterations were distributed to stakeholders who had partially or fully completed the immediately previous iteration forming a consensus on the most important factors in each domain.

**Summary of Results:** Response rate for the initial open-ended survey was 29/106 (27%; 1 hospital administrator, 1 Graduate Medical Education administrator, 2 program directors, 3 surgical faculty, 3 wellness representatives, 19 residents). Response rates for the second and third iterations were 30/46 (65%) and 21/30 (70%), respectively. The most important factors in each domain (by percent selected) were:

- **Workload:** workhours (21%), advanced practice providers (18%), number of surgical consults (11%), complexity of patient cases (9%), type of electronic medical record (8%), average inpatient census (8%)
- **Control:** autonomy (28%), number of scheduling blocks/schedule changes (16%), presence of residency union (13%), affordable childcare options (11%) • Rewards: compensation (32%), vacation time (26%), benefits (13%) • Community: peer support program (23%), mentorship program (21%), geographic region (12%), institution location (metro - rural; 10%), affiliation with a medical school (10%) • Fairness: budget allocation (18%), presence of residency union (17%), resident attrition (15%), turnover of faculty (13%) • Values: mentorship program (15%), type of institution (14%), % minority faculty (13%), composition of administration (13%), % female faculty (12%), mission statement (11%)

**Discussion and Conclusions:** Wellness stakeholders identified and stratified institutional factors in each burnout domain through a modified Delphi process. This can direct future scholarship around the impact of the organization on resident wellbeing and burnout.

**Take-home Messages:** Understanding institutional factors related to wellness can prioritize future work to understand organizational barriers and facilitators associated with surgical resident wellbeing.
#EPOD-SE: Surgery Education

#EPOD-SE3 Professional Identity Development: Lessons From Positive Physician Role Models (7900)

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ABSTRACT:
Background: Medical students tend to regard successful people in medical career areas as role models for developing their medical professional identity. This study interviewed the physicians in Business Weeks 2008 and 2018 lists of 100 Best Physicians in Taiwan regarding their academic and postgraduate medical education, training, and career in the development of their medical professional identity.

Summary of Work: Thirty-four physicians from the two lists (6 women and 28 men) were included through purposive sampling. Their medical specialties were paediatrics, internal medicine, surgery, obstetrics and gynaecology, family medicine, dermatology, ophthalmology, psychiatry, or Chinese medicine. In-depth interviews were conducted from June to November 2019. Individual interviews were conducted using semi-structured questions, video-recorded and transcribed, and a content analysis was performed to generalise the results.

Summary of Results: Medical professional identity can be shaped by academic performance, physical strength, and community activities at the medical school as well as by strengthening clinical training, regarding patients as teachers, and selecting a specialty based on personal traits, interests, and life expectations at the residency stage. In particular, the medical professional identity should demonstrate the value of empathy in clinical care and consider research as a part of medical practice for improving patient care. In addition, holding administrative or managerial positions can enhance medical social accountability, further developing one’s medical professional identity. Time management was reported to be crucial for meeting multiple demands, and maintaining physical and mental health, establishing a medical professional identity, and having family support and understanding are vital to career success. The findings did not indicate the effect of gender on the formation of medical professional identity.

Discussion and Conclusions: Medical professional identity is formed due to various experiences ranging from medical school to clinical workplace and life. Examples of Best Physicians can serve as models for young medical students and students considering a medical career to imagine their future medical careers and develop their medical professional identity.

Take-home Messages: The interviewed Best Physicians showed their professional identity could be shaped broadly from the medical school to the clinical workplace and personal life. Medical educators should be aware of the professional identity from the holistic perspectives for medical students learning and training.
EPOD-SE4: Smart Phone Viber Chat Apps for Teaching and Assessment in Orthopaedic Residency Training (8069)

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ABSTRACT:
Background: Smart Phone Chat Apps (SPCA) are now an integral part of one's daily routine and have even found its place in orthopaedic education. SPCA facilitates efficient communication and learner-based management and more so now as remote flexible learning is becoming the new norm in this COVID-19 pandemic medical training.

Summary of Work: The study described the use of a chat app (Viber) as used in the Section of Adult Orthopaedics of the Philippine Orthopedic Center (POC). It focused on the mode and dynamics of the chat discussion amongst its participants, its perceived usefulness in teaching and learning specifically its relevance and applicability, its potential as a supplementary assessment tool, as well as its perceived effects. This is a phenomenological study. The mobile phone screenshots of the chat interactions, participants survey, and focus group discussions with consultants and residents were done. Data were analyzed by themes that emerged and summarized accordingly using NVivo-12.

Summary of Results: Respondents included 15 Residents (11 senior residents) and 9 consultants. The study was conducted over a period of 3 months clinical rotation at the said section of the POC. The SPCA has been shown to be a useful, applicable, and relevant teaching and assessment tool. Influxes of multiple ideas per case were discussed real-time as the chat discussions and interactions helped in the planning of the surgical management and eventual decision-making. SPCA also served as a good surgical case log and online case library, as well as an efficient, rapid, cheap mode of information dissemination. The residents reported that it helped in developing one's emotional maturity as they do self-reflection and self-criticism in the performance of their cases. The consultants reported the same findings.

Discussion and Conclusions: The SPCA is a helpful, relevant, and acceptable adjunct teaching and learning tool for clinical teaching and can be, to an extent, used as a supplementary assessment tool of the residents communication skills, work ethics, initiative, and diligence.

Take-home Messages: Smart Phone Chat Apps can be used as an adjunct tool for teaching and assessment in orthopaedic residency training and may be extended to related postgraduate training programs.
Trends in gender disparity of authorship in urology publications

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ABSTRACT:
Background: A global surge in females enrolling into urology training programmes has driven initiatives for improving retention and progression of female trainees. Contribution to peer-reviewed journals is a crucial factor in advancement through training. Gender disparity in authorship of academic publications has been identified in other healthcare specialties. This study aims to identify the prevalence of female first and senior authorship within leading urology journals. A secondary objective is to investigate the prevalence of a predilection of female first authors to publish with male or female senior authors; exploring the role of gender in trainee mentorship.

Summary of Work: Demographic data traversing 5 years (2016-2020) of publications were collated, from the top four impact factor journals (2020) in urology. Trends in female authorship were studied using univariate linear regression analysis; the trends in mentorship by senior authors were studied using the chi-squared statistical test.

Summary of Results: A total of 10,339 articles were included within the analysis. Female first author and female senior author prevalence was 16% (1666/10,339) and 12% (604/4938) in the cohort respectively. Annual trend analysis demonstrated that across 2016-2020, there was an overall decrease in female first authorship by 1.04%. However, 2 of the 4 journals showed an increased rate in female first authorship respectively (3.25%, 4.51%). An average significant increase in female senior authorship of 7.61% was recognised over the 5 years (p<0.005), with the largest increase of 31% contributed by one journal in 2019. Subanalysis of mentorship by gender identified that female first authors were twice as likely to publish with mentorship from a senior male colleague compared to a female senior colleague (p < 0.005). Male first authors were four times more likely to publish with a male senior colleague compared to a female senior colleague (p < 0.005).

Discussion and Conclusions: Understanding gender-trends in authorship is vital in informing strategies for recruitment and advancement of women in urology academia. Our data suggests there is a gender disparity in the number of female authors publishing high impact factor urology journals.

Take-home Messages: To improve retention of female urological trainees, further strategies are necessary to encourage females to feel empowered to publish in high impact urology journals.
#EPOD-SE: Surgery Education

#EPOD-SE6  Developing interest in surgical careers through an undergraduate teaching programme (7940)

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ABSTRACT:

Background: Data suggests that interest in surgical specialties may be declining, even from as early on as medical school. However, studies suggest that engagement with extra-curricular activities influences their likelihood to pursue surgical careers. Our study aimed to assess changes in student perception towards surgical careers following participation in a three-week surgical course.

Summary of Work: Students on placement at St Peters Hospital, Chertsey were invited to a course of 3 one-hour sessions covering practical surgical skills and lectures. Participants were tutored by Foundation-Year-Two doctors, with oversight of a surgical clinical teaching fellow and senior consultant. Students completed pre- and post-course surveys focusing on surgical interest, surgical skill confidence, placement-participation, and career preparation. The course was delivered through two cycles.

Summary of Results: Cycle one showed statistically significant improvements in suturing-confidence (mean increase 4.05 out of 10, p=0.001), confidence in hand-ties (3.63 out of 10, p=0.015) and understanding of developing a surgical portfolio (mean increase 1.95 out of 10, p=0.005). After a second cycle, including the introduction of a developing a surgical portfolio lecture, students demonstrated a statistically significant improvement in mean scores across all areas. Notably, interest in a surgical career increased from mean 5.85/10 to 8.8/10 (p=0.028).

Discussion and Conclusions: We demonstrate that a short and easily accessible course can significantly improve students interest and understanding of a surgical career, equipping them with fundamental skills to pursue engagement at the undergraduate level.

Take-home Messages: Undergraduate extracurricular teaching can influence future specialty choices. Small group teaching is beneficial in developing student confidence and engagement.
#EPOD-SE: Surgery Education

#EPOD-SE7 Empowering the Surgeons of Tomorrow: A Surgical Conference (9160)

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ABSTRACT:
Background: Essex Surgical Girls (ESG) is a national consortium supporting medical trainees who wish to pursue a career in surgery. With a strong social media following and successful local and regional events, ESG aimed to provide a free and accessible national conference to support trainees across the UK. Due to social distancing restrictions, we designed our first virtual event. We assessed the usefulness and effectiveness of this meeting to guide organisation of future events.

Summary of Work: We advertised using our social media platforms and provided a one-day conference via Zoom. The program included informative talks from consultants and current trainees, delegate poster and oral presentations, breakout groups showcasing individual work, and interview skills practice. Feedback was gathered to assess the effectiveness of using an online forum to deliver this style of event. We also assessed confidence applying for a surgical training post before and after the event.

Summary of Results: Of 52 attendees across the UK, from students to core surgical trainees, 89% felt more confident applying for a surgical training post following the conference. 98% rated the event as useful for applying for surgical training and 98% rated the online format as good or better. 100% of delegates would attend a similar event in future.

Discussion and Conclusions: The first ESG virtual conference was successful in helping improve confidence applying for a surgical post and trainee knowledge of the process. Delegates enjoyed the online format and would attend similar remote access events in future.

Take-home Messages: Remote access training is effective. It allowed us to provide a free resource and increased accessibility to support those pursuing a surgical career and widen participation. Going forward online training can be a useful adjunct to traditional in-person events, providing networking opportunities for support and discussion amongst trainees, low-cost educational opportunities and easy to access.
#EPOD-SE: Surgery Education

#EPOD-SE8 Immersive virtual reality (iVR) improves procedural duration, task completion, and accuracy in surgical trainees: A systematic review (8374)

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ABSTRACT:
Background: Immersive virtual reality (iVR) simulators provide accessible, low cost, realistic adjuncts in time and financially constrained training programs. With increasing utilization of this technology, its effect on global skill acquisition should be clarified. This systematic review examines the current literature on the effectiveness of iVR for surgical skills training.

Summary of Work: A literature search was performed on MEDLINE, EMBASE, CENTRAL, Web of Science and PsycInfo for primary studies published between January 1, 2000 and May 13, 2020 on the use of iVR to develop technical surgical skills. Two reviewers independently screened titles, abstracts, and full texts, extracted data, and assessed quality and strength of evidence using the Medical Education Research Quality Instrument (MERSQI) and the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) framework. Results were qualitatively synthesized, and descriptive statistics were calculated. Where possible, standardized mean differences (SMD) were calculated using a random effects model.

Summary of Results: The literature search yielded 8,939 citations, with 13 articles included for qualitative synthesis. Immersive VR-trained groups performed 18% to 43% faster on procedural time to completion compared to control (pooled SMD = -1.11 [95% CI=-1.66 to -0.57, I² =1%, p<0.0001]). Two of four controlled trials that used task-specific checklists found iVR groups completed significantly more steps than control post-intervention. Four studies reported on implant placement accuracy. In two studies by Xin et al., iVR groups placed significantly more successful grade I/A pedicle screws compared to controls (89.6% vs. 60.4%, and 69.6% vs. 55.4%).

Discussion and Conclusions: Immersive VR incorporation into surgical training programs is supported by high-quality, albeit heterogeneous, studies demonstrating improved procedural times, task completion, and accuracy, positive user ratings, and cost-effectiveness.

Take-home Messages: Immersive virtual reality (iVR) is a low cost, high fidelity surgical training tool capable of simulating a full operating room environment. This review found that iVR training improves procedure time, task completion, and accuracy. User ratings were positive. Immersive VR may be favourable to gradual implementation into surgical residency curricula.
#EPOD-SE: Surgery Education

**#EPOD-SE9** Low fidelity surgical skill simulations using accessible and recyclable materials enhance the learning experience and preparedness of final year medical students (8150)

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**ABSTRACT:**

**Background:** There is a deficiency in undergraduate suture training and a pressure to pay for additional programmes (Rufai et al., 2016). With a shift towards the use of simulation equipment in surgical education (Stefanidis et al., 2015), there is opportunity to address this issue.

**Summary of Work:** We developed a programme to teach wound management, suture technique, knot tying, drain management, and Seldinger technique. To meet these objectives, we constructed simple low-fidelity models using cheap and recyclable materials. An 18-question assessment was designed using existing UK guidelines. Scores before and after the programme were analysed using paired T test. Questionnaires using Likert scale were also administered to assess learning needs, confidence level, and student perception on the usefulness of the programme.

**Summary of Results:** Thirty-five final year medical students completed the programme, of which thirty-two had completed both pre- and post-course forms. Most students had limited teaching on the principles of wound management and suture technique (81.3%), had never practised Seldinger technique (96.9%), and lacked formal training on management of drains (71.9%). Upon completion, all students felt that they had benefited and gained confidence in topics taught. 97.1% of the cohort felt that the low-fidelity simulation equipment helped with their learning during the course. Improvement was noted when comparing pre-programme scores (n = 32, mean = 42.2%, SD = 13.6%) to post-programme scores (n = 32, mean = 68.1%, SD = 11.5%) that was statistically significant (t(31) = -9.18, p < 0.001, 95% CI [20.1%, 31.6%]).

**Discussion and Conclusions:** We conclude that low fidelity models constructed using cheap and recyclable materials are capable of improving learning outcomes and confidence in the final year cohort. Despite its low physical fidelity, Diederich et al. (2015) proposes that the success of these models is attributed to high experiential and emotional fidelity when performance and role-playing is emphasised.

**Take-home Messages:** There remains a deficit in undergraduate surgical training. The use of low-fidelity simulation models is capable of meeting this challenge. We propose utilising cheap and accessible materials that are recycled throughout the course models that utilise cheap and readily accessible materials that are recycled throughout the course as a sustainable way of achieving this.
ABSTRACT:
Background: Simulation based learning (SBL) has a strong evidence base for improving clinical performance and non-technical skills (NTS) through experiential learning. In-situ SBL provides increased fidelity, and therefore improved learning opportunities. It is recognised that deficiencies in NTS can lead to increased clinical errors, and there is evidence for early exposure to NTS training for medical students. However, medical students rarely get the opportunity to practice these skills before their first on-call shift. We explore the efficacy and feasibility of an undergraduate surgical out-of-hours in-situ simulation.
Summary of Work: A paper-based simulation, of a surgical out-of-hours scenario, was designed to address learning objectives focused on communication, prioritisation and decision making, escalating care, and information gathering. Students work through a number of tasks, handovers and bleeps followed by a structured debrief. A pilot was undertaken with 8 senior medical students on surgical placement. Pre- and post-session questionnaires assessed self-reported knowledge of NTS, and their confidence in applying these.
Summary of Results: 87.5% of students were aware of NTS pre-session, increasing to 100% post-session. 1-in-3 felt confident applying specific NTS prior to the session, which increased to 100%. 25% were aware of sources of guidance and coping strategies pre-simulation, compared to 94% post-simulation. No students stated they felt prepared to hold an on-call page before the session, which improved to 75% after the session. Feedback was strongly positive: they reported finding it useful, at an appropriate level and relevant to their stage of training. Data collection is on-going.
Discussion and Conclusions: This paper-based simulation facilitated experiential learning of important on-call NTS for senior year students in a COVID safe manner, utilising clean wards with no patient interaction. An unexpected result showed that the vast majority of students were aware of NTS prior to the session, however only 1-in-3 felt confident applying these skills in practice. Following the session, all students felt confident applying these skills. This improved confidence is likely a result of providing SBL in a clinical setting. Overall, the simulation showed all students felt more prepared for on-call work.
Take-home Messages: In-situ SBL, focusing on essential NTS for out-of-hours work, is valued, effective and feasible for medical students.
#EPOD-SE: Surgery Education

#EPOD-SE11 Preparing foundation trainees for surgical on-calls (7918)

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ABSTRACT:
Background: Foundation trainee feedback has highlighted low levels of confidence with the prospect of surgical on-calls. Key areas of concern are; assessing and managing the acute surgical patient, identifying which patients need an operation and having the technical skills to competently assist in theatre. This lack of confidence prevents trainees engaging in an educational and rewarding rotation. We have designed and facilitated a day of robust workshops, addressing these key educational needs.

Summary of Work: Pre and post course questionnaires assessed the efficacy of teaching. Bespoke to the trust’s services, Lectures on the assessment and management of acute surgical patients in general surgery, urology and trauma and orthopaedics were delivered by core surgical trainees. A named consultant oversaw these presentations to ensure quality assurance. Addressing the technical skills development need, an afternoon of surgical skills workshops covered; suturing, knot tying, laparoscopic principles and theatre etiquette. Small groups of trainees rotated through each workshop, delivered by senior specialty trainee registrars, to ensure high fidelity training.

Summary of Results: Trainees rated themselves in key areas pre and post course on a scale from 1-5. Pre course, 66% of trainees scored 3+ in confidence in managing a surgical patient on-call. This rose to 100% post course. Similarly; Confidence in decision making regarding whether a patient should proceed to theatre increased from 37.5% to 93.7%. Suturing skills improved from 37.5% to 100%.

Discussion and Conclusions: All trainees that attended the course displayed marked improvement in their confidence and competence. We feel this course or similar should be incorporated into the foundation teaching program locally and has scope to be expanded regionally.

Take-home Messages: More attention needs to be paid in preparing our foundation trainees for their surgical on-calls. Clinically themed lectures and practical skills workshops have been shown to be efficacious in improving competence and confidence. It may be prudent for this course or similar to be made mandatory in the foundation teaching curriculum.
#EPOD-SE: Surgery Education

#EPOD-SE12  Silicone and 3D printed models - surgical education tools for the modern era (9193)

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ABSTRACT:
Background: In Australia, entry into surgical training is extremely competitive. The increasing importance of non-technical competencies and the reduced exposure to theatre time has resulted in limited opportunities for acquisition of surgical skills. COVID-19 has further burdened theatre exposure due to deferral of elective procedures. The Institute of Academic Surgery (IAS) at Royal Prince Alfred Hospital, Sydney Australia has developed a model that can be used to train surgical skills safely at any time.

Summary of Work: Technological developments have opened up opportunities for surgical education. Our institute has utilised the properties of silicone and 3D printing to build lifelike, affordable and reusable organs that can be fitted into anatomical models and used for surgical skills education. While patient safety and animal/cadaver use are conundrums that complicate surgical education - these are avoided by the IAS models, with fidelity and design constantly reviewed by scientists, trainees and surgeons. The IAS models are integrated in regular weekly extracurricular activities of surgically inclined doctors within our teaching network.

Summary of Results: Complex skills can be practiced in a controlled environment, under supervision with experts providing feedback and repeated multiple times until proficient. Skills acquisition is possible in minimally invasive, open and endoscopic methods of surgery reducing the level of novice at first experience with a patient. Junior doctors that attend IAS classes regularly become more confident and proficient in basic surgical skills including tying and suturing, laparoscopy (handling instruments, placing endoloops on an appendix, suturing) and endoscopy (colonoscopy and gastroscopy). Once skills are satisfactorily ticked off by surgeons, junior doctors can attempt to perform a supervised laparoscopic appendicectomy.

Discussion and Conclusions: The IAS models are cost-effective teaching models that improve opportunities for surgical skills training without risk to patients. Research opportunities into teaching methods using the models are currently being developed.

Take-home Messages: The IAS models offer safe, reliable and in-vivo like conditions for surgical educations. Silicon/3D models are promising tools for the future of education.
ABSTRACT:
Background: Simulation-based surgical training (SBST) is based on the assumption that trainees transfer acquired skills into the operating room (OR). Studies identified limited opportunity to apply new skills in the workplace as one of the strongest barriers to transfer of training. However, research in SBST has largely focused on trainees' performance improvements after SBST and not on trainees' opportunities to apply new skills in the OR. In a paper entitled Trainees' surgical activity and opportunity to transfer after simulation-based training published in the Danish Medical Journal, we presented data on the correlation between trainees' surgical activity and their SBST course-participation. We wish to discuss the findings and potential solutions at AMEE 2021.

Summary of Work: We collected data on procedures performed by first-year trainees in surgery, gynaecology, and urology. We included data on trainees who participated in two live-pig SBST courses; open and laparoscopic surgery from 2014-2018. We estimated the trainees' surgical activity and analysed differences in the number of procedures comparing periods 30 days after and before they participated in the courses.

Summary of Results: Data on 127 trainees were included. We observed significant differences in trainees' surgical activity within the three specialties. Comparing periods after and before the courses, we found median differences in the number of procedures between 0-3, indicating no increase in trainees' surgical activity during the post-course periods.

Discussion and Conclusions: Large variations in surgical activity may affect trainees' ability to achieve uniform levels of competence, ensuring consistent standards in surgical treatment. Our results indicate that the trainees did not have adequate opportunities to intensify relevant surgical activities after SBST. A delay in opportunities to perform may hamper transfer of training. Whereas the question used to be how do we give trainees opportunities for SBST?, it now seems more relevant asking how do we plan trainees return to the clinic after SBST, making sure that they have the opportunities to transfer their training?

Take-home Messages: Transfer of training is not just about measurable improvements in the clinic - it also concerns opportunities to perform after training. Educational and clinical work planning must be coordinated if we do not want to risk simulation being lost in translation.
#EPOD-SE: Surgery Education

#EPOD-SE14  Trauma 101: A virtual case-based trauma conference as an adjunct to medical education (8373)

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ABSTRACT:

Background: COVID-19 has impacted undergraduate medical curricula, limiting simulation-based trauma education and surgical rotations. Virtual learning has been integrated as an alternative, however, its effectiveness for teaching critical concepts in trauma has not been validated. Small-group sessions are an effective pedagogical model, yet it is unclear how they translate to online learning.

Summary of Work: Medical students were invited to attend a two-day virtual trauma conference organized by student interest groups at McMaster University and promoted on social media. 360 total participants from over 17 medical schools in five countries registered. The event included nine interactive presentations by physicians and residents in five specialties, followed by small-group case discussions. A peak of 167 simultaneous connections during presentations and 68 connections during small-group discussions was recorded. A best-match algorithm assigned students to preferred small-group sessions. Participants completed pre- and post-conference testing and feedback questionnaires. Results were analyzed using paired t-tests and descriptive content analysis.

Summary of Results:
131 participants (36%) completed the pre-test, with a mean score of 3.4/10 (SD=2.04); 86 (24%) completed the post-test, with a mean score of 6.3/10 (SD=2.3, p<0.001); 73 (20%) completed both tests. Paired t-test analysis revealed improvement by 2.7/10 (SD=2.3, 95% CI=2.17 to 3.23, p<0.001). No correlation between participant school attended and performance was found (p=0.135). Level of medical training positively correlated with test performance (R=0.623, p<0.001), but test improvement (post-pre) was not significantly different between levels (p=0.129). Social media engagement resulted in 147 posts. 37.4% were participant-generated. Live polling and moderated chats improved participation. 74% of participants agreed sessions were interactive. 95.2% agreed the online platform was effective and 78.3% endorsed the conference as helpful preparation for clerkship.

Discussion and Conclusions: With high participant satisfaction and significantly improved post-test results, this virtual model for trauma education at the medical student level is an effective adjunct to all levels of medical school curricula. Small-group sessions, case-based discussions, active lecture feedback systems, and social media presence were beneficial in enhancing participant engagement and interaction.

Take-home Messages: Virtual conferences demonstrate capacity to effectively teach concepts of simulated management to medical students. Validated designs for virtual medical education conferences are important for an increasingly online future.
#EPOD-SE: Surgery Education

#EPOD-SE15 Two Peas and an Orthopod - A Novel Approach to Remote Surgical Learning (7481)

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ABSTRACT:
Background: The COVID-19 pandemic has shown the importance of digital education. Podcasts are an increasingly popular method of free, open access education. Two Peas and an Orthopod is a surgical education podcast series which aims to dismantle stereotypes in orthopaedics and encourage students and doctors to apply for a career in orthopaedics.

Summary of Work: The series comprises five episodes on a publicly accessible platform. Interview-style episodes address diverse subject matter; women in orthopaedics, dealing with stress as a surgeon, securing core surgical training posts, sports injury surgery and life as an orthopaedic surgeon. These podcasts were advertised to final year medical students and junior doctors, with feedback collected through questionnaire.

Summary of Results: From 20 questionnaires, 95% (19/20) found the series informative and 90% (18/20) now think more positively about a career in orthopaedics. Encouragingly, 100% (20/20) said that Two Peas and an Orthopod is a step in the right direction to break stereotypes in orthopaedics.

Discussion and Conclusions: Podcasts are a vector for disseminating information that can influence the listener. Doctors have changed their clinical practice by listening to certain podcasts [1]. When it comes to engaging with medical students, there is a proven role of orthopaedic podcasts as a more engaging learning tool than textbooks alone [2]. With the hope of harvesting the influential power of podcasts, TPO aims to try and challenge stereotypes that are a barrier for some to applying for orthopaedics training. This podcast series is a novel and effective method to educate students and doctors on orthopaedics. Involving a broad range of guests in a series facilitates debate and opinion. The online nature of the podcasts allows flexible listening and learning at a distance which is particularly useful for modern learning.

Take-home Messages: Two Peas and an Orthopod (TPO) is a surgical education podcast series which aims to dismantle stereotypes in orthopaedics. By addressing the stereotypes directly with orthopaedic surgeons and facilitating debate the aim is that it will encourage students and doctors to apply for a career in orthopaedics. Created by students, TPO is a current podcast series to add new content into the current pool of orthopaedic podcasts.
From experiencing to engagement: A learning engagement-promoting approach to developing interactive e-book systems for nursing instruction (8371)

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ABSTRACT:
Background: Educating inpatients and their family members regarding patient safety and protection is an important and challenging task for nursing staff. However, the effects of conventional nursing instruction with printed materials are usually not as good as expected owing to the low learning engagement of the learners. Nursing instruction has practical implications for disease prevention and health promotion; however, in conventional nursing instruction, the learning engagement of inpatients and their family members is low.

Summary of Work: In this study, a learning engagement-promoting approach is proposed for developing interactive e-book systems for nursing instruction. To evaluate the proposed approach, an experiment was conducted to explore the effects of the interactive e-book system on inpatients learning outcomes and perceptions. Interactive e-books have great potential to improve learners learning motivation via presenting multimedia materials with interactive functions. The advancement and popularity of mobile technologies has facilitated the use of interactive e-books in education. A learning engagement-promoting model is proposed for developing interactive e-book systems to promote learners learning engagement and performances. A nursing instruction e-book system was developed based on the proposed model to help inpatients and their families learn the knowledge of patient safety and perceptions.

Summary of Results: The results show that the proposed approach significantly improved the inpatients and their families learning performance as well as their learning attitudes, motivation, and satisfaction when compared to the conventional paper-based instruction. On the other hand, it was found that the inpatients and their families’ state anxiety was not significantly affected by the approach. The experimental results showed that the proposed approach significantly improved the learning performances and learning perceptions of inpatients and their families.

Discussion and Conclusions: The proposed learning engagement-promoting model is effective. It is worth trying to develop other learning systems based on the model to improve learners engagement and learning outcomes. The proposed approach can be used to help patients and their family members learn other nursing instructional content.

Take-home Messages: Further studies can be conducted to investigate the impacts of the proposed model on the perceptions and outcomes of the learners with specific characteristics, such as low-efficacy or high-anxiety learners.
# EPOD-SE: Surgery Education

# EPOD-SE17 Simulation-based education by pig perineum improves patient safety (8022)

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ABSTRACT:
Background: Repairing an episiotomy wound is one of the most essential obstetrics procedures in Thai medical professional standards. In the lack of experience and expertise may pose the risk to patients and practitioners. The needlestick injury is one of the most concerning problems in inexperienced practitioners. Simulation-based medical education (SBME) by pig perineum episiotomy workshop would help the new practitioners to gain experience, more patient safety and reduce risk of needlestick injuries.

Summary of Work: An observational cohort study was conducted by assessing hospital annual incidence report at Chiangrai Prachanukroh hospital during 2017-2019. Medical student (5th-6th year) and PGY-1 who had passed obstetrics department were assigned to participate pig perineum episiotomy workshop which held every month, since May 2019. The incidence of needlestick injuries was observed. Additionally, group interviews were used to explore the perception of this method.

Summary of Results: Total of 310 medical students were recruited. The incidence of needle injuries before the workshop decreased from 4.1% to 3.1% after the workshop but did not reach a statistically significant difference (p-value 0.72). The incidence of needlestick injuries was the highest in PGY-1 (6.4%) compare with 6th (3.8%) and 5th (1.1%) year medical students. By training with this simulator, The incidence was decreased in medical student (49.1%) more than in PGY-1 (26.4%). From group interviewing, the medical students felt more confident, more competent to perform an episiotomy, and they believed that they wont harm the patient. This procedure could be applied to real-life practices.

Discussion and Conclusions: The pig perineum episiotomy workshop reduced risk of needlestick injuries, especially in undergraduate medical student. Even though comparing the incidence of needlestick injuries before and after episiotomy workshop did not reach the statistically significant difference but it also had clinical significance because the needlestick injury was an important occupational hazard in the hospital setting.

Take-home Messages: Simulation-based medical education is beneficial for medical students to improve competence and performance which important in both personal safety and patient safety.
#EPOD-ASS: Assessment

#EPOD-ASS1 Reflecting and Assessing: when and how should we assess medical students self-reflections? (9277)

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ABSTRACT:
Background: Attaining skills of self-assessment is important for development of medical students professional behaviors and attitudes. Reflection is associated with a positive learning experience and may help students to develop their ability for self-regulated and lifelong learning. Accordingly, an increasing number of medical schools worldwide have reflection as an integrated part of their curriculum.

Summary of Work: We assessed the timing, the assessment form and the assessment instructions and criteria of reflective assignments throughout the medical program (11 semesters) at Karolinska Institutet. Data was collected between April 2016 and May 2017 from the syllabi, through review of course instructions for reflections and by a questionnaire to the teachers.

Summary of Results: Reflective assignments occurred mainly within the three continues threads at the medical program; Professional development, Primary care and Scientific development. Oral and written reflections, for both formative and summative purposes, were identified. Written instructions were found for written and oral assignments in all semesters. Criteria for pass/fail grading assignment were not identified for all courses.

Discussion and Conclusions: A more transparent system is called for, where written instructions and criteria, for both oral and written assignments, are defined and well known in advance, both for students and teachers. Furthermore the system should comprise similar criteria templates, applicable with increasing rubrics complexity over time, during medical education. In order to support learning, and self-reflection, reflective assignments should be related to a specific context, defined by criteria, and a longitudinal alignment in assignments, with increasing complexity over the semesters should be taken into account. A more uniform assessment system for self-reflections should be elaborated which in turn requires more faculty development.

Take-home Messages: Self-reflection is an important part of professional development and it needs to be included in the overall assessment system. The method described in this study can be an efficient tool to identify areas of improvement for reflective assignments in medical education.
#EPOD-ASS: Assessment

#EPOD-ASS2 Developing an online interactive written assessment revision session for medical students during the COVID-19 pandemic (7971)

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ABSTRACT:
Background: Written papers form an important of all Medical Schools assessment, however, students often feel underprepared. The COVID-19 pandemic has presented challenges to the delivery of medical education and seen the significant emergence of online learning. The aim of this work was to develop an online revision session for our medical students, using a platform that can actively encourage student participation, to improve knowledge of core topics and give further insight into assessment format and technique.

Summary of Work: We developed a case-based online session for our Year 3 Medical Students and delivered this towards the end of their Medicine Block using Blackboard Collaborate, which provides an interactive learning environment utilising live messaging and anonymous polls. Knowledge was assessed using clinical vignettes incorporating single best answer questions covering core topics. Student confidence in answering questions was assessed before, and after the session in: problem solving, pathophysiology, investigations, pharmacological and non-pharmacological management, using a scale of 1-5 (1=very unconfident, 5=very confident).

Summary of Results: 31 students attended. Pre- and post-session questionnaires were completed by 14 and 18 students, respectively. There was a significant increase in overall student confidence after the session compared with before (3.0 vs 4.2, p<0.001). Additionally, there were significant increases in confidence in all areas of knowledge (p<0.01). The biggest improvement was noted in pharmacological management (2.6 vs 4.1, p<0.001). Overall, 88.9% of students described the session as excellent, and all recommended the session to peers.

Discussion and Conclusions: It has been possible to deliver structured and interactive teaching sessions for large groups of students during the COVID-19 pandemic. This session has helped students to improve core knowledge and confidence in answering exam questions. Additionally, students rated the session highly. We plan to roll this programme out with more sessions, covering a wider range of topics and targeting larger numbers of students.

Take-home Messages: Online exam focused revision sessions improve student confidence in undertaking written assessments and, whilst the COVID-19 pandemic has enforced use of online platforms, this is likely to be an optimal way of delivering high quality interactive sessions for large numbers of students for the foreseeable future.
#EPOD-ASS: Assessment

#EPOD-ASS3  Response to COVID-19 in Preclinical Assessment Practices Across Three Medical Schools in Michigan (8971)

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ABSTRACT:
Background: In response to COVID-19, educational institutions had to rapidly transition to a remote online learning environment. This transition required rapid adaptation of policies, procedures, and practices, presenting a unique challenge for assessment practices in medical schools, many of which relied upon direct observation of students' skills and abilities or monitored assessment of clinical knowledge. To better understand what assessment changes were implemented and the success of those changes, the transition of three medical schools in Michigan were compared. By studying the outcomes of those practices we can continuously improve the quality of education.

Summary of Work: A qualitative analysis was done for three medical schools in Michigan (WMed, OUWB and CMU) examining how each school's policies, procedures, practices and handbooks changed in regards to preclinical assessment in response to COVID-19. Specific responses to the assessment of 1) clinical knowledge, using course examination questions, grades, and remediation practices, 2) use of USMLE tests in the curriculum, and 3) clinical skills via objective structured clinical examinations (OSCEs).

Summary of Results: While each medical school has its own structure and mission for education, there are numerous similarities regarding how student knowledge and clinical skills were assessed both prior to and during the COVID-19 pandemic. Common challenges include remote monitoring and evaluation of students, course remediation practices, OSCE, use of the USMLE step exam in the curriculum, and the provision of formative feedback.

Discussion and Conclusions: With the recent change of the USMLE examinations, medical institutions will need to adapt to a new future in medical education assessment. By examining and sharing strategies utilized at several institutions to overcome hurdles in response to the COVID-19 pandemic, the future of medical education assessment can be improved for students and institutions alike.

Take-home Messages: COVID-19, while challenging, has provided an opportunity for improvement of assessment practices in medical education. With the recent USMLE examination changes, now is the time to identify and build upon pre-existing solutions to the challenges seen in medical education assessment.
#EPOD-ASS: Assessment

#EPOD-ASS4 Are Virtual Mock Finals Examinations a Viable Alternative to Face-to-face Mocks? (8386)

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ABSTRACT:
Background: Muslim Medics, an academic society at Imperial College London (ICL), offered final year medical students a Virtual Mock Examination (VME) instead of traditional in-person clinical examination mocks, for the first time due to the Coronavirus pandemic. Our aim is to investigate the viability and benefit of such a format in assisting students prepare for their summative practical examinations.

Summary of Work: Doctors were recruited as examiners and fifth year medical students as mock patients for the VME stations. Candidates consisted of 48 final year ICL medical students. The breakout rooms functionality of Zoom video-conferencing technology was utilised with 6 breakout rooms forming one circuit. Candidates were emailed a feedback questionnaire both pre- and post-VME.

Summary of Results: 30(62.5%) and 35(73%) of the 48 candidates filled in the pre-VME and post-VME questionnaires respectively. Only 1 person had prior experience with VMEs, and most students (57%) reported spending less than 10 hours practicing for their summative practical examinations. Candidate confidence in the usefulness of VMEs was found to be statistically significantly improved post-VME (P<0.005). Self-confidence ratings in each of the stations also significantly improved post-VME (P<0.002 for all stations). 57% of participants thought virtual core physical examination stations (e.g Cardiology) would be useful to include.

Discussion and Conclusions: The demand for VMEs exceeded supply (132 sign-ups). Breakout rooms on Zoom are a novel method of simulating candidates moving through stations of an in-person practical examination. Candidates found VMEs to be an extremely useful tool for preparing for their summative practical examinations, demonstrating that despite the novel virtual format of the event, VMEs are a viable alternative to in-person mocks. VMEs are useful in boosting confidence of the candidates in history taking and images & instruments stations. More research is needed to establish the practicalities and usefulness of including core physical examination stations. Objective assessment of the benefit of VMEs to candidate performance in summative examinations is required.

Take-home Messages: Our results demonstrate that VMEs are a viable and useful alternative to in-person mocks for candidates preparing for their summative practical examinations.
ABSTRACT:

Background: Conducting exams proved to be difficult during the COVID-19 pandemic (Ahmed et al., 2020). On the one hand, due to severe changes in teaching (nearly no face-to-face sessions), the catalogue of learning objectives for each subject had to be adapted accordingly. On the other hand, exams were still either carried out in person under strict hygiene regulations, or in the form of online exams in compliance with corresponding data protection guidelines, which involved a great deal of effort. Examining practical skills with OSCEs (Objective Structured Clinical Examinations) was a particular challenge.

Summary of Work: The aim was to conduct an OSCE to verify students practical skills whilst complying with necessary hygiene measures incurred by COVID-19 and measure students evaluation as well as the impact of face-masks on student-patient-interaction. The OSCE had to take place under strict hygiene measures, e.g. wearing face masks (MNS). Students assessed preparation for and difficulty and content of the stations as well as the SPs performance according to school grades (1-6). In addition, there was a Covid-19 specific evaluation of the topics: interaction, non-verbal communication and MNS (1-6).

Summary of Results: N = 149 students, N = 32 SPs and N = 59 lecturers took part in the survey. The students rated the OSCE with 2.4 for preparation and 2. for content and severity. They perceived the interaction significantly disturbed by MNS (3.03 ± 1.54), \( p < .001 \) compared to the SPs (3.84±1.44) and the lecturers (4.14 ± 1.55). Both the lecturers (5.00 ± 1.58) and the SPs (4.93 ± 1.86) did not agree that MNS had a negative impact on the grade in the OSCE. In general, the three groups considered the use of MNS in the OSCE to be useful (1.60 ± 1.15).

Discussion and Conclusions: The OSCE was able to be carried out in person, despite the pandemic, by ensuring that those present adhered to strict hygiene and safety measures. Despite the changes, evaluations were in the positive range. However, some students were also critical of the implementation of safety regulations. Further analysis will be available at the meeting.

Take-home Messages: OSCE can take place as face-to-face setting in times of pandemic
#EPOD-ASS: Assessment

#EPOD-ASS6  Machine learning prediction algorithms for analyzing students’ performance in Web OSCEs (8933)

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ABSTRACT:
Background: Graph theory is the study of graphs, mathematical structures used to model pair-wise relations between objects. A visual representation of data, in the form of graphs, contributes to gaining actionable insights and makes better data driven decisions based on them. Online learning objects, such as Web OSCEs have the potential to generate data about the students and their way of learning in terms of records, interactions and digital footprint. Graph theory and learning analytics can improve the decision-making process based on these actual data and real trends that are derived from students behavior and resource usage.

Summary of Work: A Web-based OSCE scenario simulating intravenous cannulation was created. In this scenario, 14 medical students were asked to follow a step-by-step workflow procedure including a network of 52 nodes. Data from the trainees choices were used to create graphs. By using graph analytics, multiple connections among various types of learning paths were found among trainers who completed the session.

Summary of Results: The analysis of the topological characteristics of the network showed a high differentiation in the centrality of the answers. In addition, using weighted centrality, the weight of each choice in the decision network was calculated and the shortest paths were estimated. Finally, the preferential attachment algorithm was evaluated and the prediction of the answers in the specific scenario was evaluated. In this way, the instructor strengthened the prediction and detection of the wrong choices of the trainees and targeted actions are now more effective.

Discussion and Conclusions: Network analysis contributed to the exploration of the possible existence of relationships between participant choices and was focused on the trainees behavior. Moreover, the data visualization resulting from network analysis may contribute to the better utilization of Web OSCEs for student training in clinical skills, such as intravenous cannulation. Thus, the use of graph analytics seems to be an effective tool that can be integrated into medical education and learning analytics.

Take-home Messages: Graph-based analysis by using mathematical algorithms may be used to correlate and group data and predict relationships between students answers and learning paths in Web OSCEs.
#EPOD-ASS: Assessment

#EPOD-ASS

Early evaluation of a re-designed MBChB paediatric course using practice assessments (8866)

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ABSTRACT:
Background: A redesigned MB ChB Medicine course at the University of Bristol had its first intake of students in 2017 and its first paediatric placement in 2020. An identical paediatric Practice Objective Structured Clinical Exam (pOSCE) was included in the 2020 redesigned paediatric course as was previously in the 2019 course. We evaluated whether the new redesigned shorter (6-week versus 9-week) paediatric course altered student performance in this identical pOSCE.

Summary of Work: We evaluated the pOSCE marks from September to December to capture performance at the same stage of training in each year. The two pOSCE stations (A and B) were identical in 2019 and 2020 and each students performance was examined using the same University structured mark scheme. The teaching fellow examiners were different in 2020 and were blinded to the 2019 student marks. We compared student marks of 2020 to 2019.

Summary of Results: Over the three months studied 33 students were assessed by pOSCE in 2019 and 29 in 2020. After incomplete mark sheets were excluded, our evaluation compared 27 pOSCE mark sheets from 2019 with 21 from 2020. The mean score in station A was 79.4% for 2019 students and 72.6% for 2020 students. The mean score in station B was 76.2% for 2019 students and 79.8% for 2020 students. Station A marks were higher for 2019 students and Station B marks were higher for 2020 students. The mean scores of the station totals were 77.8% for 2019 and 76.2% for 2020 students. Examiners global assessment of each student averaged 73.9% and 70.5% for 2019 and 2020 respectively.

Discussion and Conclusions: Our evaluation provided evidence that students paediatric clinical performance was similar from both courses. Whilst this is reassuring perhaps one aim of a redesigned course would be increased performance. Maintained performance despite the shortened course may have been due to the introduction of regular bedside teaching on the 2020 course. Limitations included OSCE limitations and small sample size.

Take-home Messages: Keeping practice assessments unchanged when introducing new courses can facilitate early course evaluation. Shorter courses may not reduce clinical performance when well designed.
#EPOD-ASS: Assessment

#EPOD-ASS8  Teaching outside the box in the COVID era: A virtual Paediatric OSCE for Undergraduates (8942)

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ABSTRACT:
Background: The COVID-19 pandemic has driven most undergraduate teaching online; could a virtual platform be used to simulate an important face-to-face learning experience like an OSCE? We set out to design and run a peer-led, virtual OSCE experience for paediatric undergraduate students. The aims were to prepare students for the summative exam and to provide a meaningful learning experience.

Summary of Work: The project was designed by a multi-professional team of educators including clinicians, administrators and a recent medical graduate. Through continued collaborative development we devised an online session which comprised of peer-led, multi-role OSCE stations with integrated clinician feedback. The students simulated the roles of candidate, actor, examiner and observer, each giving a distinctive perspective on the case. The feedback sessions were an opportunity for expert clinicians to provide guidance based on their observation of how the students performed. The students were asked to rate how confident they felt about passing the summative OSCE before and after the session, and how useful they found the experience. Qualitative feedback was collated from faculty and students.

Summary of Results: Students gave overwhelmingly positive feedback. 14% vs 70% of students indicated a confident response about passing the OSCE in the pre-course vs post-course question. The average confidence score was 2.72 vs 3.69 for pre and post; a statistically significant change (p = <0.05). 96% students agreed that the session had been useful. In addition, faculty felt the sessions were well planned and organised. The students found the session beneficial and praised the virtual resources used. Valuable constructive feedback included suggestions on the size of the stations and additional resources available.

Discussion and Conclusions: This project showed that with meticulous planning and multi-professional collaboration it is possible to create a virtual OSCE session that provides an invaluable learning experience. Through the COVID pandemic and beyond, online interactions will become increasingly utilised in both teaching and professional practice. This project provides a framework for how a virtual programme can be effectively used in place of traditional face-to-face teaching.

Take-home Messages: With rigorous planning and collaboration, it is possible to create an online OSCE which enhances learning and prepares students for their summative exams.
#EPOD-ASS: Assessment

#EPOD-ASS9  Virtual OSCE near-peer teaching scheme: a response to placement cancellations (8703)

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ABSTRACT:

Background: Informal observation and feedback by near-peers have traditionally been used by medical students to practice for objective structured clinical examinations (OSCEs). During COVID-19 near-peer contact was disrupted when students were unable to attend clinical placements. We recruited junior doctors to practice OSCE skills with final-year students virtually.

Summary of Work: 73 junior doctors were matched with 174 final year students. Groups met at least twice monthly. Mixed methods questionnaires were distributed before the sessions began and after six months. Participants rated their confidence, perceived preparedness for the OSCE, and utility of the scheme on a five-point Likert scale. We used paired t-testing to compare before and after responses, p<0.05 being considered statistically significant.

Summary of Results: 64 (36.8%) students completed both questionnaires. Self-assessed confidence in taking a history was 3.5 ± 0.78 before and 4.63 ± 0.49 after the scheme (p<0.05). Confidence in examination technique was 2.77 ± 0.75 before and 4.23 ± 0.59 after the scheme (p<0.05). Participants had higher perceived readiness for the OSCE after the scheme (p<0.05). 78.1% and 73.4% of participants strongly agreed that virtual OSCE teaching was as useful as physical OSCE teaching in history taking and communication stations respectively. Participants were less positive about learning practical skills and examinations virtually. Overall, participants rated the utility of the scheme at 4.90 ± 0.30.

Discussion and Conclusions: Near-peer learning is valued by students as near-peers are uniquely placed to advise on exams they have recently prepared for. This project shows that during periods of disruption to placements students appreciate the opportunity to continue learning from near-peers. A simple virtual scheme significantly increased students perceived readiness for OSCEs. Further work might explore how a structured virtual scheme affects objective measures of competence by tracking students outcomes in OSCEs.

Take-home Messages: - Students value informal, near-peer teaching should be preserved in the absence of the usual opportunities to gain this teaching in the course of clinical placements - Simple near-peer virtual OSCE schemes can be useful for increasing confidence in history taking and examinations
ABSTRACT:
Background: A study outlining the redesign of a summative Objective Structured Clinical Examination (OSCE) for Physician Associate students undertaken within our centre in October 2020. The original OSCE design featured stations within closed, soundproof cubicles, each with floor space of 5m², some without windows. Service users were expected to play the role of simulated patients for history and physical examination. Following the emergence of COVID-19 it became apparent that the OSCE would pose a high risk of virus transmission through close physical contact, high-touch areas, insufficient ventilation and prolonged time indoors.

Summary of Work: The redesign consisted of three stations within a large well-ventilated room. Individual candidates undertook stations consecutively with one examiner present, and a second examiner observing from another room via video livestream. The patient role was played by teaching staff who had passed a COVID-19 risk assessment. Physical examination was performed on a high-fidelity manikin. All individuals wore level 1 personal protective equipment (PPE). The furniture and equipment were cleaned after each use. Candidates received a pre-recorded online briefing and an individual exam time prior to the exam. They left the building immediately after completion of the exam.

Summary of Results: The format was well-received by all participants. No incidents were reported with relation to COVID-19 transmission. Analysis of exam results demonstrated a high level of inter-examiner reliability.

Discussion and Conclusions: This was a safe, alternative format for OSCE delivery during the COVID-19 pandemic. Livestream technology enabled a third party to observe without being in the room. In addition to reducing infection risk, this method also prevented increased student anxiety resulting from the presence of an extra individual. The use of high-fidelity manikins enabled students to demonstrate examination techniques without unnecessary physical contact with service users. The approach was less time efficient than a traditional OSCE, limiting the number of stations and breadth of topics assessed.

Take-home Messages: Technology was utilised to reduce risk of infection transmission during face-to-face OSCEs. Multiple stations were delivered in a single room with one examiner and one student present. This method did not impact inter-examiner reliability.
#EPOD-ASS: Assessment

#EPOD-ASS11 Effectiveness of applying standardized patients (SP) to implement Objective Structured Clinical Examination (OSCE) under COVID-19 - Experience at the Mackay Memorial Hospital (8379)

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ABSTRACT:
Background: When the world is facing the raging COVID-19, most of the medical education program including Objective Structured Clinical Examination (OSCE) has been suspended. Taiwan is fortunate to have a successful pandemic prevention strategy. However, OSCE is an essential method of teaching. In response to COVID-19 protection, our hospital still holds OSCE as scheduled. How to maintain the OSCE execution quality in a safe environment and protective measures and training is very important.

Summary of Work:
1. Screen the SPs contact history and condition to ensure a healthy state and carry out COVID-19 education and training including the environment, disinfection, and the rules for the disinfection of physical examination (PE) and examination tools for candidates. Provide sufficient protection supplies during the performance, including clothes, alcohol, masks, goggles, and separate oxygen mask equipment, and provide new masks when leaving. 2. To ensure that examinees and examiners can face the SP safely and comply with the new rules. When PE washes hands and wears gloves, the inspection tools that touch the patient must be disinfected. The oral PE adjustment is replaced by a mold.

Summary of Results: In 2020, there are 19 categories of medical students M4-6 and PGY, residents, dentistry and other medical professions, 85 OSCEs in total, 994 candidates, and 587 SPs participating in OSCE safely implement OSCE and assist other hospitals to complete OSCE.

Discussion and Conclusions: When the pandemic begins, SP will be worried about the crisis of entering the hospital and will reduce the willingness to participate in OSCE. We provide adequate education and equipment, increase the examination room and prevent epidemics as clinical rules, strengthen protective training to focus on patient safety, and complete 85 OSCE events. Although COVID-19 has changed many medical education and training content, OSCE cannot be replaced by video. It is also the teaching feature of this hospital. Examinations, examiners, administrators and SP epidemic prevention training are conducted to ensure a safe environment, and the examination questions can be adjusted appropriately to still be effective for evaluation.

Take-home Messages: The OSCE can still be safely implemented by conducting pandemic prevention education and providing complete protection for SP.
#EPOD-ASS: Assessment

#EPOD-ASS12 Cooperative Learning Application in GOSCE (Group Objective Structured Clinical Examination): An Example of Comprehensive Elder Health Assessment (9134)

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ABSTRACT:

Background: In recent years, people pursue multiple teaching methods, transferring from teacher-centered to student-centered learning, including cooperative learning. Cooperative learning focuses on peer interaction and active learning. Students can learn to finish tasks and achieve learning goals through teamwork. This research is devoted to exploring the result of cooperative learning in GOSCE (Group Objective Structured Clinical Examination).

Summary of Work: This research included 302 students from School of Medicine, Respiratory Therapy, Nursing and Gerontology Health Management, in 18-week courses. Through geriatric disease cases study, students learn medical history inquiry, psychosocial recognition and daily activity evaluation. The courses apply discussion-assessment-reflection-reassessment methodology. In the beginning of the course, group members would teach and learn from each other on the topic. After discussion, one of the students would have a pop quiz which was scored by a mentor and group members. The mentor only gave suggestions and instruction based on the result. At the end, a quiz was given again.

Summary of Results: The satisfactory of this research scored 4.42 (Likert 5-point scale). Average peer review scored 96.1. After instruction, test scores increased 10.1 (total score is 100); students self-evaluation scores increased to 3.79 from 3.02 (Likert 5-point scale).

Discussion and Conclusions: 1. The research result reveals that students highly identified the design of this cooperative learning course. They were satisfied with the test result with significant improvement in clinical skills. 2. Teachers could give feedback on pros and cons according to peer review and discussion process. This way could not only reflect students learning effect but also deepen students understanding in the lesson plan. 3. The teaching progress of each department was different. For the students who were not familiar with the topic, teachers should give them sufficient learning time. Therefore, it is suggested that teacher instruction time can be increased to improve the learning effect.

Take-home Messages: Students from different departments understand the importance of IPE (Interprofessional Education) through cooperative learning of geriatric diseases cases. It is vital to equip the future medical personnel with the knowledge, attitude, skills about interdisciplinary cooperation during school training.
#EPOD-ASS: Assessment

#EPOD-ASS13 Using Situational Judgment Test to Assist a Non-Physician Shadowing Program During the COVID-19 Pandemic (9066)

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ABSTRACT:

Background: Medical work relies on teamwork from physicians and many healthcare professionals. A non-physician shadowing program may help medical students learn about other healthcare departments and to put themselves in others' shoes. During the COVID-19 pandemic, however, on-site shadowing may be restricted and an alternative plan was needed.

Summary of Work: Between 2020 February and June, a non-physician shadowing program was continued in the Fu Jen Catholic University for our second-year medical students. Situational judgment test followed by classroom reflection and open discussion was used to replace the on-site shadowing when hospital visit was restricted due to the COVID-19 Pandemic. Clinical teachers from different healthcare departments were invited to design situational judgment tests that may reflect their real-life challenges. And students were invited to perform the test independently and after small group discussion. Finally, the program teacher leads students with reflection and whole-class discussion.

Summary of Results: In our post-program survey, students reported learning of the six ACGME core competencies: practice-based learning and improvement (82.7%), interpersonal and communication skills (82.7%), systems-based practice (76.9%), professionalism (76.9%), patient care (75.0%), medical knowledge (59.6%). Students also reported additional learning in empathy (92.3%), teamwork (87.5%), problem solving and decision making (84.6%), medical ethics (69.2%), social accountability (67.3%), legal issue (57.7%), multiple perspectives (55.8%) and leadership (42.3%). All students reported satisfaction with the modified program (50% were extremely satisfied). And 100% of the students voted for the use of situational judgment tests in our future shadowing program.

Discussion and Conclusions: Non-physician shadowing may help students learn about other healthcare professionals, teamwork and empathy. During the COVID-19 pandemic when in-hospital shadowing becomes difficult, situational judgment tests followed by reflection and student discussion may serve as a good substitute for on-site visiting.

Take-home Messages: Situational judgment tests can be used to assist or substitute for student learning in non-physician shadowing, especially during the COVID-19 pandemic.
#EPOD-ASS: Assessment

#EPOD-ASS14 Meeting the evolving needs of trainees studying for the Final Fellowship of the Royal College of Anaesthetists (FRCA) examination during the Covid-19 pandemic (8322)

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ABSTRACT:

Background: Studying for postgraduate qualifications has always been challenging in any trainee doctors career. The Covid-19 pandemic has created additional demands. Trainee anaesthetists have had to continue studying for exams, whilst managing demanding rotas and many unprecedented pressures.

Summary of Work: We have transformed a traditional face-to-face peer led FRCA revision course into a virtual one. Since the start of the pandemic we have run two separate online courses. In August 2020 we delivered the course via Google Classroom. Over a 10-week period we provided practice exam papers alongside additional study materials to complete a comprehensive coverage of the postgraduate anaesthetic curriculum. In January 2021 we revised the course and delivered it via a virtual platform, Zoom. We co-ordinated faculty members and candidates to deliver exam papers and specialist topic teaching sessions over 3 days. Interactive group work and discussions were facilitated, providing a similar experience to the face-to-face course.

Summary of Results: Uptake for both online courses was comparable to previous face-to-face courses. Feedback obtained from the first online course included good organisation and content but candidates felt it was isolating with little opportunity for discussion. Consequently the second course was adapted to enhance interaction throughout. Feedback included: enjoyed home comforts whilst learning, excellent interactive elements with facilitators and peers and great practice for doing the exam from home. Negatives included missed the camaraderie of being together, easier to lose concentration at home and computer fatigue.

Discussion and Conclusions: Supporting trainees in our region with a course that has adapted to the restrictions of the pandemic has been our priority. We demonstrated that an exam revision course can be successfully delivered on virtual platforms to excellent satisfaction. Whilst the biggest disadvantage of virtual learning- the lack of physical interaction, may never be completely overcome, we have adapted to the best of our ability whilst maintaining good standards.

Take-home Messages: Educators need to adapt to the changing times by incorporating technology that creates a teaching environment which maximises learning and maintains a standard of teaching to meet training requirements.
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ABSTRACT:
Background: Prediction of postgraduate performance is one of the fundamental issues in medical education. Annual postgraduate exam scores were found predictive for licensing examination performance. With a recent shift to formative assessment methods to assess postgraduate clinical training, there is a lack of evidence for their educational impact on trainees performance. This study aims to determine the formative assessments ability to predict final summative exam performance in the Saudi Board Obstetrics and Gynecology (SBOG) for 2018-2019.

Summary of Work: Design: Retrospective cross-sectional analysis Setting: 509 records of SBOG trainees from R1 to R4 level for the year 2018-2019. Dependent (summative) variable: End yearly written exam scores Independent (formative) variables: scores of Logbook, Academic activity, mini clinical evaluation exercise (Mini-CEX), direct observation of procedural skill (DOPS), case-based discussion (CBD), In training evaluation report (ITER),

Summary of Results: A sample included 65% female and equal distribution between the residency level except for R4. The bivariant analysis showed that ITER, Logbook, and academic activity assessment were significantly related to written exam score. ITER scores were significantly related to all other formative assessment tools. Workplace-based assessment tools had a moderately significant correlation between each other and with ITER score but no correlation with end year exam score. The multiple regression model Produced $R^2 = 0.44$, $P<0.01$

Discussion and Conclusions: This is the first study investigating the correlation and the predictive value of formative assessment methods on end year exam score. Our study concludes that ITER and academic activity scores were valuable assessment predictors for SBOG final exam performance. We suggest that formative assessment tools could be used as academic markers to identify possible struggling trainees.

Take-home Messages: Formative assessment is an essential part of postgraduate medical education but, until now, it is considered the shadow of summative assessment. Although different theories explained learning from formative and summative assessment, some postgraduate formative assessment tools were predictive of end-year exam scores. Our study supports the postgraduate program shift to use formative assessments as a marker of resident clinical performance and highlights its prediction for written exam assessment achievement, and suggests that further studies are still needed in this regard.
Evaluating Negative Feedback in Postgraduate Medical Education: Prevalence, Impact, and Delivery (9511)

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ABSTRACT: 
Background: An important aspect of residency training is the delivery and reception of feedback to residents so that learning and performance is enhanced. However, there are many instances where feedback is presented as criticism and has a negative impact on residents. We sought to evaluate the prevalence, impact, and explore positive ways that feedback can be delivered to residents.

Summary of Work: Residents from 30 programs at a Canadian University completed a short on-line survey about the frequency and impact that negative feedback has had on them as a learner. Responses from 188 residents were analyzed using NVIVO, content analysis was used to generate emergent themes from the data. Frequencies were used to quantify prevalence of negative feedback across resident responses.

Summary of Results: 78% (n=147) of residents indicated that they had received critical feedback of their performance during training. This feedback was found to be critical of their performance (82%, n=121) and of them as a person (32%, n=47). This negative feedback was shown to affect the residents self-view (74%, n=138), and negatively affected them after they left work (81%, n=153). Residents suggested ways to stay positive and not let negative feedback affect their self-esteem when the feedback was on their performance (e.g., accept it as a tool aimed to better performance, do not take it personally, and seek out peer support) and on the person (e.g., peer/family support systems, do not take it personally, reflection/mindfulness, and use it as an opportunity for improvement). Residents provided many suggestions for how the supervising person could provide negative feedback in a more beneficial way, such as providing constructive, direct, specific and directional feedback, include positive elements of performance, deliver feedback professionally and respectfully, privately in person, and in a timely manner.

Discussion and Conclusions: While negative feedback can be a useful tool to promote learning and enhance performance, it also can have a negative impact on a residents well-being. The main intent of this evaluation is to address these concerns through interventions at multiple levels (institution, program, individual).

Take-home Messages: Results will be used to develop/modify policies, procedures, supports, and specific actions (e.g., faculty development) to improve resident experiences, feedback, learning and well-being.
#EPOD-CAR: Career

#EPOD-CAR1 Impact of the academic medicine society - quantitative and qualitative analyses (9650)

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ABSTRACT:
Background: The Academic Foundation Programme (AFP) is a training programme integrative of clinical work and research. Buckingham Medical School has yet to have a student successful enrol onto the AFP. Preliminary data were gathered from students found that students rated awareness of the AFP at 6.6/10 and desire to apply at 4.4/10. Our aim was to identify reasons for the lack of engagement with academic medicine and put into place a plan to address these issues.

Summary of Work: Our primary objective to evaluate the overall impact of our interventions on knowledge of the AFP. The secondary objective was to identify barriers to academic medicine. Preliminary/baseline data were gathered in August 2020 and subsequent data were collected following interventions. Our interventions included informative webinars, a student poster conference, online research modules. The questionnaire was adapted from a published study by Mashar et al 2019.

Summary of Results: Preliminary data (n=38) revealed the primary barriers to obtaining research opportunities were lack of awareness (57.5%), support from the medical school (44.3%), available opportunities (41.7%) technical knowledge/ability (30.8%). Only 17.1% cited lack of time. Baseline data were collected on knowledge of the AFP. 64 students attended the webinars on applying to the AFP, white space questions and poster presentation advice. 28 respondents revealed a significant increase in all domains of knowledge regarding the AFP. The online poster conference was attended by 96 students. 11 respondents had also attended the previous webinars. The poster conference did not result in a statistically significant increase in knowledge of the AFP.

Discussion and Conclusions: We were encouraged that we were able to observe an improvement in all domains of AFP knowledge following the webinars. For additional developments we would like to include data on 2021 AFP applications from Buckingham. 5 new medical schools are due to open in the UK and we hope the results from this study can highlight the need to develop an academic infrastructure and suggest ways to implement this.

Take-home Messages: We hope our programme can serve as model for new and existing medical schools about methods to engage students in academic medicine, even when faced with the constraints of a lockdown.
#EPOD-CAR: Career

#EPOD-CAR2 How does artificial intelligence affect medical students’ choice of radiology? (8362)

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ABSTRACT:
Background: Emerging use of artificial intelligence (AI) has been accompanied by concerns among students about pursuing radiology as a career. International student surveys have shown significant anxiety towards use of AI in radiology, and a counterpart study in the United States is lacking. We aimed to examine the impact of AI on medical students choice of radiology as a career, and how such impact is influenced by students opinions on and exposures to AI and radiology.

Summary of Work: 463 medical students across 32 medical schools in the United States participated in an anonymous online survey from February 2020 to April 2020. The respondents radiology ranking with and without AI were compared. Among 188 students considering radiology within their top 3 choices, change in radiology ranking due to AI was examined for association with baseline characteristics, subjective opinions, and prior exposures.

Summary of Results: AI significantly lowered students preference for ranking radiology (P<0.001). One-sixth of students who would have chosen radiology as the first choice did not do so because of AI, and approximately half of those considering radiology remained concerned about AI. Ranking radiology lower due to AI was associated with greater subjective concerns about AI (P<0.001), less perceived understanding of radiology (P=0.016), predicting a decrease in job opportunities due to AI (P<0.001), and exposure to AI through medical students and family (P=0.031) as well as through radiology attending and residents(P=0.028), but not with prior exposures to radiology. Education on AI during clinical radiology rotations, followed by pre-clinical lectures, was considered the most beneficial way to learn about AI.

Discussion and Conclusions: AI had a significantly negative impact on students radiology ranking, driven by pervasive subjective concerns as well as exposure to the medical community. Exposure to radiology as a field offered insufficient protection against the impact of AI. Since curricular integration was preferred to self-directed learning, targeted AI education in both pre-clinical lectures and clinical rotations is desirable.

Take-home Messages: Curricular interventions specifically aimed at AI instruction need to be developed and implemented in order to mitigate the negative impact of AI on choice of radiology as a career.
#EPOD-CAR: Career

#EPOD-CAR3 Investigating the Fauci Effect: The Impact of COVID-19 on pre-health undergraduate interest in careers in medicine (8723)

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ABSTRACT:
Background: Data collected by the American Medical College Application Service (AMCAS) indicate an increase of over 7,500 medical school applications in 2021 - an 18% increase. This phenomenon has been called the Fauci Effect based on the hypothesis that Dr. Anthony Fauci inspired a wave of young people to pursue a career in medicine. However, the exact reasons underlying this increase in student desire to pursue a medical career remain unknown. Furthermore, it remains unclear how the pandemic has impacted pre-health college students (first and second years of baccalaureate degrees) in their attitudes towards careers in medicine.

Summary of Work: This was a longitudinal study over the period of one year to determine whether the Fauci effect was of the same magnitude in pre-health baccalaureate students at the University of Cincinnati compared to the population reported in the AMCAS data.

Summary of Results: 53.8% of the 145 students polled indicated that COVID-19 increased their interest to pursue a medical career (63.1% in the Class of 2023 and 46.3% in the Class of 2024). 43.4% of the students indicated that COVID-19 did not change their interest to pursue a career in medicine while 2.8% of students said it decreased their interest. Further analysis of the open ended responses showed the reasons for increased interest in medicine fell into six major themes across classes: a greater appreciation for medicine, inspiration from frontline workers, a desire to improve inequalities within healthcare, increased motivation to make a change, increased desire to serve others, and drive to address the shortage of healthcare workers.

Discussion and Conclusions: These survey results suggest that the Fauci Effect may also be applicable to students early on in their pursuit of a medical career. Though the AAMC saw a drastic increase in the number of medical school applications this year, it appears this increased interest is not limited to just medical school applicants.

Take-home Messages: This study not only suggests that COVID-19 has led to an increased interest in the medical field as early as the first and second years of undergraduate, but also helps elucidate some of the previously unclear reasons for this increased interest.
Understanding medical students: Interest, motives and perceived barriers in the pursuit of an academic career (8300)

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ABSTRACT:
Background: The role of Academics with a medical background is vital to medical education, evidence-based medicine, and innovation. Medical graduates have several career pathways including clinical practice, academic medicine, research-dedicated fields, or non-medical positions. Much is left unknown about the factors that motivate or dissuade medical graduates to pursue careers in academic medicine as most studies focus on residents and physicians. This study aims to explore the interest, motives, and barriers medical students perceive when considering academic careers.

Summary of Work: An online, random, anonymous survey was distributed among undergraduate medical students in Alfaisal University via email and other communication channels. The survey will include 29 questions, 21 of which offer a 5-point Likert scale.

Summary of Results: 196 responses were collected. 60.5% being females and 39.5% being male respondents. 41.5% of students expressed interest in academic medicine. A striking 95% of those interested stated that they wanted to do academic work alongside their clinical practice. Only 5% considered a purely academic career. Upon diving deeper into the interested population, 48% chose personal adequacy/suitable skills for the position as the main reason for their interest. Nevertheless, reasons such as lower stress, sufficient number of role models, and confidence for success were the second most popular motives at 13.6, 12.3, and 11.1%, respectively. On the other hand, the major perceived barriers were the unclear career pathway, personal unsuitability/lack of skills for academic positions and, the inability/distraction from clinical work made up around 20% each.

Discussion and Conclusions: Choosing an academic career is multi-factorial. Being able to understand the motives and barriers for medical students can help increase their interest and encourage them to consider and pursue academic medicine. With the majority of medical students (50-70%) believe that there is a lack of career counseling role models in academic medicine and career pathway clarity. A lot of improvements can be done in that area to encourage the pursuit of an academic career.

Take-home Messages: The presence or lack of skills and suitability for an academic career is a major deciding factor when considering academic medicine. Career counseling, mentors and exposure to academic role models can greatly impact medical students career choices.
ABSTRACT:

Background: The Student Task Force (STF) represents an international students group that provides logistical assistance during the AMEE Conference. It characterizes a multiregional initiative defined by a strong cooperation model. It must be noted that for many attendees of such events, finding oneself in a new environment and joining a new group may be stressful and demanding. Meanwhile, the COVID-19 pandemic thoroughly affected most of the global initiatives, moving them online, as well as weakening interpersonal contacts. This was the reason for implementing the Mental Health Watch (MHW), to offer the involved parties proper personal support, and increase individual resilience.

Summary of Work: Research-wise, MHW consisted of 3 anonymous, coded questionnaires shared with the subjects before, during and after the conference. One of the main goals of the study was to analyse the mental well-being of the STF members, and its fluctuations throughout the initiative period. For this, 35/72 participants subjectively evaluated the presence of several mental health factors. Publication-wise, the Mental Health Watch- The STF Guide was created and shared among the interested subjects, gathering proper stress relief techniques. Furthermore, 1-to-1 calls were organized for those who required them.

Summary of Results: As many as 80% of subjects declared that COVID-19 affected their mental health negatively, with tiredness (54.3%) and burnout (45.7%) being the most frequent symptoms, and 54.3% members seeing MHW as a needed addendum. The subjective stress level was 5.6/10, with lack of social life and health at risk being the main stressors. We observed an increase in the prevalence of tiredness (40.0% vs 69.4%, p=0.01) and anxiety (20.0% vs 44.4%, p=0.02) associated with the heavy workload period. Six (17.1%) members asked for personal support. The conference positively affected participants productivity level, which increased from 6.63/10 to 7.03/10.

Discussion and Conclusions: MHW pilot edition reinforced the sense of belonging that the STF particularly promotes. We believe this innovation also helped the success of the conference, especially relevant in the pandemic context, and we consider expanding it in the future.

Take-home Messages: Offering mental support should become a good practice in any virtual work environment. This may increase the group motivation and productivity, and consequently, contribute to sustainable professional development.
#EPOD-CPD: Continuing Professional Development

#EPOD-CPD2 Rheumatology Continuing Professional Development (CPD) for Primary Care Providers: A scoping review (9310)

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ABSTRACT:

Background: There is an ever-growing shortage of rheumatologists. A 2015 workforce study conducted by the American College of Rheumatology estimated that in 2030, the United States alone will have a shortage of about 4,700 rheumatologists. As such, primary care providers (PCPs) may find themselves taking the initial steps to diagnose and treat some rheumatologic disorders.

Summary of Work: This is a scoping review to map and synthesize the literature on CPD in rheumatology for internal medicine PCPs utilizing Arskey and O'Malleys six steps. PubMed, Embase, Web of Science, ERIC, CINAHL, PsycINFO were systematically searched with the help of a medical librarian. To ensure a variety of perspectives, a team to include internal medicine/rheumatologists/medical educators was assembled. Studies were limited to those performed in the United States and Canada since both countries have similar standards and CPD requirements. Studies prior to 1990 were excluded since that is when CPD requirements became more rigorous. An extraction form was created through an iterative process and applied to the remaining articles.

Summary of Results: The initial search returned 725 studies, of which 72 were deemed appropriate for full-text review. Preliminary results showed that CME was directed more at non-inflammatory arthritis than inflammatory arthritis. Further, autoimmune diseases, in general, are underrepresented in CPD literature.

Discussion and Conclusions: In rheumatology CPD curricula, newer research tended to discuss more multi-component approaches where different strategies are used in combination (such as didactics and active learning), whereas older research was less focused on interactive learning modalities. This is consistent with a move towards more active learning in CPD. Cost considerations are important in CPD, though few articles discuss it. Battistone, et al., bring up the idea that on-site educators and/or mini-residencies could help defray the cost. Though e-learning is increasing in popularity, current CPD interventions in rheumatology still seem to prefer face to face modalities over e-learning. We may see this continue to evolve, particularly given the impact that COVID-19 has had on learning.

Take-home Messages: Given the COVID-19 pandemic, we should begin to explore other options in rheumatology CPD aside from in-person modalities.
ABSTRACT:
Background: Ultrasound-guided cannulation is a valuable but under-taught procedure. Junior clinicians rely mostly on informal, opportunistic teaching to learn this skill. To address this, we created and delivered a course on the use of ultrasound in vascular-access for junior doctors, furthering their professional development.

Summary of Work: A cost effective and innovative ultrasound phantom model was researched and produced. This comprised agar jelly, mimicking sonographic appearance of real tissue, embedded with silastic tubing containing red food colouring, to mimic vessels and flash-back. Course content comprised initial discussion of ultrasound theory, identifying vessels in vivo by scanning other attendees arms and ultimately practising ultrasound-guided cannulation on agar models. The models enabled attendees to build confidence in a safe environment prior to utilising the skill on the wards, effectively bridging the gap between theory and practise. A cohort study was commenced (University of Bristol 111122). Electronic questionnaires distributed pre-session and 1 month post-session will capture data regarding course attendees prior knowledge and experience of ultrasound, perceptions surrounding ease of skill acquisition and alterations in clinical practise subsequent to session attendance.

Summary of Results: Preliminary pre-session data highlights clinicians baseline perspectives of ultrasound; namely more attendees considered the skill challenging (n=6) versus simple (n=2). All attendees reported having encountered situations where they would have liked to use ultrasound-guided cannulation and did not. Barriers to using ultrasound included feeling not confident and not being trained (n=6). Preliminary post-session data on longer term behaviour change is currently being collected, with further training sessions scheduled. Data collection is ongoing.

Discussion and Conclusions: To demonstrate facilitation of continued professional development, post-session questionnaires aim to capture markers of behaviour change post course attendance. Post-session, have attendees utilised ultrasound-guided cannulation, incorporating it into their clinical practise? Attendees will be asked if they have taught peers ultrasound-guided cannulation, establishing any evidence of further skill dissemination. Additionally, having attended the course, do individuals views on the ease ultrasound-guided cannulation skill acquisition alter? On collating further evidence this project looks to answer these questions.

Take-home Messages: Ultrasound-guided cannulation is a useful, attainable skill; by providing a tailored course, this project aims to enhance junior doctors procedural repertoire, furthering their ongoing professional development.
#EPOD-CPD: Continuing Professional Development

#EPOD-CPD4  Charting Pediatrics: Leveraging a podcast to release COVID-19 Pandemic clinical updates for pediatric providers (8481)

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ABSTRACT:

Background: It has been crucial for pediatric providers to have access to current, evidence-based medical education specific to pediatric patients as the COVID-19 pandemic rapidly evolved. Most pandemic podcasts have been focused on adult care, but pediatric patients have faced unique challenges including MIS-C, virtual learning and pediatric mental health challenges.

Summary of Work: Throughout the global pandemic, one of three physician hosts interviewed a pediatric faculty expert on a variety of COVID-19 clinical topics - from epidemiology impacts to womens issues, school guidance, vaccines and cardiac screenings for the safe return to sport - yielding more than 30, 25-30-minute podcast episodes. The rapidly developing pandemic content was released in real time to address critical clinical impacts to clinicians. Episodes can be downloaded on convenient podcast platforms. A specific provider resource webpage provides an overview of pandemic podcast topics, host bios, links to library of episodes, and listeners email feedback and requests.

Summary of Results: During the COVID-19 Pandemic, the Charting Pediatrics podcast has grown its listener base by 66%, from 33,000 to 55,000 unique downloads per month; with global reach growing from 136 countries to now 156 countries on all 7 continents. There have been 31 COVID-19 episodes released to date with 203,140 total downloads, representing 52% of all 2020 downloads. One pediatrician listener commented, I have loved the podcasts that allowed me to get quality COVID-19 information regularly, especially as the information about the pandemic shifted. All podcast episodes are free. As the pandemic surged in Latin America, the podcast released its first episode in Spanish which surpassed any other single podcast episodes unique downloads by 51%. This inspired the development of a pediatric Spanish-only podcast.

Discussion and Conclusions: The podcast is an optimal platform for the real time delivery of high-quality clinical education cross-culturally. Throughout the COVID-19 pandemic, we were able to leverage the accessibility of the podcast to deliver crucial information to local and global learners who may have limited access to continuing pediatric medical education.

Take-home Messages: Podcasts provide a scalable educational outreach platform to uniquely meet the learning needs of local and global students and providers, especially during a worldwide pandemic.
#EPOD-CPD: Continuing Professional Development

#EPOD-CPD5 An ITU Bedside: Upskilling non-ITU staff for COVID redeployment (9792)

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ABSTRACT:  
Background: In 2020, we faced the unprecedented task of upskilling and reorganising our hospital workforces to tackle the COVID-19 pandemic. Large numbers of staff, both medical and nursing, were redeployed to Intensive Care Units (ITU) to support their colleagues, having never worked in such environments before. As educationalists working in ITU, we developed a teaching programme to aid this transition.  
Summary of Work: We developed a half day course The ITU Bedside: COVID Essentials available to all staff facing redeployment (typically theatre/recovery staff and surgical team members). This course was part didactic, part practical, aiming to cover the basics of an A-E assessment in ITU patients. The introductory lecture covered key concepts and was followed by a practical session during which participants gained hands on experience in a simulated ITU environment. Later sessions included time spent shadowing on the unit to put the skills into practice.  
Summary of Results: The course was delivered to over 100 staff members through the first and second waves of the pandemic having been incorporated into the mandatory training for all nursing staff identified for redeployment. Of those surveyed (n=35), 83% had either none or less than 3 months prior experience in an ITU environment. 100% stated that they would recommend the course to others, 97% felt that the course met their learning needs with 94% reporting that it left them feeling more confident.  
Discussion and Conclusions: The course was essential in building the confidence of our workforce in preparation for redeployment and was extremely well received. It provided a springboard from which skills could be developed and further educational requirements identified. We provided complementary sessions (e.g. arterial line familiarisation, respiratory support devices), educational posters (how-to guides for ventilators) and online presentations accessible to all staff through the Trusts intranet.  
Take-home Messages: Truly multidisciplinary training is both possible and effective. This training was developed by a doctor and nurse team, a skill mix which proved to be immensely beneficial to overall delivery and reception. Mixed modality training (using both lecture-based and hands-on work) was found to be very effective and warmly received. We went on to develop further resources with break out sessions and online courses.
ABSTRACT:

Background: During the Covid-19 pandemic staff across all healthcare professions were deployed from their usual places of work to areas affected by Covid-19. This included those deployed to Intensive Care Units (ICU). For many of these staff caring for patients on ventilators was outside of the scope of their usual practice and knowledge base. Due to ventilator shortages, these were often anaesthetic machines, which some ICU staff were unfamiliar with. Due to the rapid evolution of the pandemic there was also an additional time pressure to education and resource development for these staff.

Summary of Work: Quick-reference posters were created to familiarise staff with ventilators or anaesthetic machines (specific to the ventilators used in our ICUs) and provide examples of how to troubleshoot, when to call for help and what to do whilst help arrived. These posters were successfully rolled out in one trust and therefore were adapted for use in a second trust where they were uploaded to an online COVID-19 resource platform for redeployed staff.

Summary of Results: A small questionnaire (n=6) showed that prior to the posters, 50% of doctors knew how to increase oxygen flows to 15l/min and increase to an FiO2 of 1.0. Following reviewing the posters, this increased to 100% of doctors. This feedback as well as verbal feedback showed that the posters were well received and easily adapted to different anaesthetic machines.

Discussion and Conclusions: These posters were developed quickly and were easily adaptable between trusts where different ventilators were in use. This allowed quick rollout during a pandemic in which the clinical situation and pressure on staff was rapidly increasing. The guides were designed to give redeployed staff some confidence in managing unfamiliar patient groups at a highly stressful time in their careers.

Take-home Messages: We created a successful resource that was easily reproduced and adapted across 2 trusts during the COVID-19 pandemic to allow ongoing education and a quick reference guide. Questionnaire responses showed positive feedback from deployed staff showing the benefit of rapidly reproducible education resources during the pandemic.
ABSTRACT:
Background: Continuing Professional Development (CPD) is a fundamental part for all doctors as it is the main duty of doctors to keep abreast with the latest clinical trends in order to provide a safe and high quality care to the patients. COVID19 has impacted millions of lives worldwide and doctors are the first contact with COVID-19 patients. In Myanmar, the first COVID19 case is detected at the end of March 2020. Doctors bravely sacrificed their time in the frontline to provide safe and quality care for COVID-19. COVID19 has impacted CPD among doctors in many ways. There is difficulty to balance between COVID19 clinical care and CPD among doctors.

Summary of Work: We have conducted questionnaires to attendees at one virtual CME session. They were asked about why they are attending virtual CME and impacts to attend these courses and CPD during COVID-19 pandemic.

Summary of Results: We found that doctors attending virtual session are mainly to keep abreast with their medical knowledge. Most of them are eager to know the latest trends of COVID19. Majority of respondents have busy COVID19 clinical work as a barrier of attending virtual sessions followed by stress, burnout, internet connection, and lack of in-person interaction and limitation of time provided by the course organizer.

Discussion and Conclusions: Doctors prefer to attend courses that encourage virtual learning as COVID19 provided them a great opportunity to attend courses held in urban areas remotely and no time is wasted due to travel. There is no fees charged by the course organizer to honor the doctors and it encourages doctors to attend without worrying about financial situations. The major barrier is doctor shortage in hospitals and COVID19 workload is high. Doctors who want to do CME need to spare their leisure time and it is difficult to focus on virtual sessions due to burnout and stress. There need to be enough work-life balance for all practicing doctors in Myanmar during COVID-19 era. To conclude, CPD is important to have high-quality health care offered by doctors in Myanmar while maintaining physician wellbeing.

Take-home Messages: Doctors need to keep abreast with the latest clinical management while providing the clinical care and protecting themselves from COVID19.
# EPOD-CPD: Continuing Professional Development

# EPOD-CPD8  Fear but Proud: Narrative Reflection of Frontline Nursing Stress Investigation by Emotional Dimension Model during COVID-19 (9266)

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**ABSTRACT:**
**Background:** COVID-19 causes uncountable life loss since the outbreak at the end of 2019. Medical staff all over the world have devoted themselves to provide professional care to the patients under a very high risk and stress. They have to battle between their mission and the enormous pressure either mentally and physically. The purpose of this study was to investigate the nursing emotional stress by the Emotional Dimension Model during the pandemic.

**Summary of Work:** We conducted a cross-sectional study by purposive sampling. Forty-one narrative responses were collected and processed by the Natural Language Processing Laboratory at National Central University in Taiwan to analyze the mental state of nursing staff. The pleasure and arousal were scaled from 0-10 to quantify the level of positivity, negativity, anxiety, and calmness. The data were calculated by Statistical software SPSS 19.0.

**Summary of Results:** Eighty-two words related to their feeling were used in total which added up to 232 times. The most common words by their narrative description were scared, worried, emotional stress, anxious, and proud. In terms of level of positivity and negativity, the words of the highest score of 5.89 were perturbed mood and hurt, and the relatively lower score of 3.54 with the word choice as insane. As regards anxiety and calmness, the highest score of 5.18 with the word of insane, and the lower score of 4.31 with the words of annoyed and nervous.

**Discussion and Conclusions:** Our study demonstrated the emotional stress of the frontline nursing by Emotional Dimension Model during COVID-19. It is worthy to note that the words of feeling they chose might mirror their deep mind of inner value, passion, and sense of mission during this chaotic period. Even under the huge stress and fear, they still presented with their empathy and proud to face the global pandemic.

**Take-home Messages:** The global pandemic gives us a valuable lesson to learn how to contain the virus via good cooperation. Narrative written reflection investigated by the Emotional Dimension Model may provide us some clues to trace their deep mind and fear then transform to great power of proud.
#EPOD-CPD9  How Was Your Day? A proactive, evidence-based approach to wellbeing (9151)

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ABSTRACT:
Background: It is imperative that our NHS staff feel valued and supported through the COVID-19 crisis and beyond. The Scottish Doctors Wellbeing Study aimed to provide a robust evidence base to inform the development and implementation of interventions undertaken to support health and wellbeing. One of these interventions, addressing personal and organisational change, is described here.

Summary of Work: Qualitative research was undertaken with 100 doctors across Scotland, revealing many staff were experiencing marked uncertainty about the future while describing worrying levels of stress and burnout. In conjunction with Trickle, an established feedback app currently in use with healthcare staff in NHS Lothian and Tayside, an additional How Was Your Day (HWYD) feature was developed to take a proactive approach to supporting and valuing staff. HWYD prompts individuals to report their daily levels of fulfilment alongside a set of key influencing factors (positive/negative).

Summary of Results: The HWYD app is being used by Doctors in Training in Lothian and the Acute Medical Unit team in Tayside. Data collated in response to the daily prompt results in staff receiving a weekly summary of their responses alongside the organisations receiving weekly all-staff feedback. Data are being used in partnership with staff to test and track changes that may improve wellbeing; small changes making a big difference to staff to reduce burnout and increase joy and fulfilment in work.

Discussion and Conclusions: The pandemic has magnified the challenges healthcare staff face to their wellbeing with many current interventions not being supported by data. The application of a theoretical framework based on evidence allows any intervention to be contextually focussed as well as strategic. HWYD is transformative in that it encourages individuals and organisations to work together to listen, engage and improve. This novel approach will result in positive organisational and cultural change which have historically been difficult to achieve in short time periods.

Take-home Messages: NHS Scotland’s greatest asset is the staff who deliver it. Staff health and wellbeing are key to healthcare and patient safety. This evidence-based intervention using real time data can influence change and lead to an improvement in staff wellbeing and resilience.
#EPOD-CPD: Continuing Professional Development

#EPOD-CPD10 Using electronic health data to strengthen Continuing Professional Development (CPD) for Australasian medical practitioners (8369)

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ABSTRACT:

Background: In Australasia, medical regulatory bodies are recommending greater use of CPD activities that focus on reviewing performance and measuring outcomes to assist medical practitioners reflect on their practice and provide safer care. In both academic and industry spheres, it is agreed that the secondary use of electronic health data for formative purposes is at the core of those CPD activities that aim at measuring health outcomes. Given this, there is a strong interest in exploring how data mining on large electronic health datasets could support the development of personalised educational programs and professional development plans for medical practitioners. Unfortunately, little research examines regulatory requirements, organisational culture and processes, stakeholders insights, and medical practitioners behaviours in order to develop and implement ad hoc recommendations.

Summary of Work: Primary research will be conducted using a qualitative approach. As a first step, two preliminary studies will fill a gap in the literature: 1) a scoping review on the use of electronic health data to strengthen CME/CPD for medical practitioners to map research evidence; and 2) a documentary analysis of current CME/CPD regulatory frameworks in Australia, New Zealand, Canada, the UK, and the US in order to obtain a clearer picture of recent developments. Concurrently, consulting sessions with thought leaders will be run for both studies. Successively, two fieldwork studies will be carried out: 1) an environmental scan and gap analysis of Australasian medical organisations, including focus groups with key informants, with the aim of assessing organisational processes around electronic health data management and use for CME/CPD purposes; 2) an ethnographic study in multiple Australasian health-care services, in order to explore the attitudes of medical practitioners towards electronic health data and its use for CME/CPD purposes.

Summary of Results: Research findings are expected to provide medical regulatory bodies, health-care service organizations, and medical education providers with unique insights on how to use electronic health data to design personalised CME programs and establish effective CPD practices for Australasian medical practitioners.

Discussion and Conclusions: Preliminary findings will be shared during the presentation.

Take-home Messages: Electronic health data mining for formative purposes can promote data-driven practices at health-care service level and the establishment of learning health systems.
#EPOD-COM: Communication

**#EPOD-COM1 Virtual PsychED Up: Improving Communication and Psychiatry Skills in Lockdown (8670)**

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**ABSTRACT:**

**Background:** PsychED Up is an extra-curricular psychiatry course for medical students, focusing on communication skills and the hidden curriculum. We present each week’s theme in a large group session, then smaller groups explore this through scenarios with actors, receiving structured feedback from peers, senior students, and trainee psychiatrists. Due to Covid-19 restrictions, we moved course delivery to Microsoft Teams in 2020/21, with adaptations for the virtual environment.

**Summary of Work:** We assessed: 1) effects of PsychED Up by comparing pre- and post-course questionnaire responses in Autumn 2020 (27 students); 2) whether adaptations for the virtual environment affected student experience by comparing the 2020 cohort with the 2019 cohort (20 students) who received face-to-face teaching. Quantitative analysis utilised subjective 1-10 rating scales to assess outcome measures a) confidence in talking to patients with mental illnesses, and b) preparedness for clinical examinations. Thematic analysis was applied to free text feedback of students’ views on practicing communication skills online, identifying its advantages and disadvantages.

**Summary of Results:**

Students’ confidence increased after PsychED Up 2020 by 3.3/10 (p<0.05). Compared to 2019, there was no significant difference between virtual and face-to-face teaching in improvement. We saw similar results when examination preparedness was measured. Positive themes from qualitative analysis: 1) developing virtual consultation communication skills; 2) privacy of scenario provided by observers turning off cameras; 3) improved accessibility, reflected by increased proportion of students attending all seven sessions from 25% (2019) to 75% (2020). Of 27 comments, three were negative, commenting on limitations with non-verbal aspects of communication.

**Discussion and Conclusions:** Virtual learning benefited complex communication learning. It helped widen access, allowed privacy for observed consultations, and spotlighted the skills required in an ever more electronic world. Certain aspects of the virtual learning environment provoked both positive and negative responses, suggesting inter-learner differences that teachers should be mindful of. We will receive further data from the Spring 2020 cohort for ongoing analysis.

**Take-home Messages:** Additional communication skills programmes are valued by students, with specific benefits arising from the change to the virtual environment. There is scope in future for combining both face-to-face and virtual methods to harness the positive aspects of each.
#EPOD-COM: Communication

#EPOD-COM2 The dilemma of learning communication from the medical students’ perspective: The gap between theory and practice (9691)

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ABSTRACT:
Background: Communication skills is the corner stone of building patient-doctor relationship. Our medical school has designed and teach communication skills with various strategies such as didactic lecture, role play and standardized patients. Students could be assessed by objective structured clinical examination, mini clinical evaluation exercise, milestone or entrustable professional activity. However, students progress from the peripheral to central community of practice depends on interaction with the members of the clinical environment. We aim to investigate how communication skills are translated into clinical practice when students face complexity and uncertainty of the real world.

Summary of Work: The study was qualitative and two sessions of focus group were conducted. A total of eight fifth and sixth year medical students consented to participate in the study. Students were invited to share their perspective of the importance of learning communication skills and experience in applying such skills in clinical practice. The transcript was transcribed, coded and analyzed by thematic analysis by two experts.

Summary of Results: Our results showed that students would assess their own communication skills based on reaction from patients. They think the best way to improve their communication skills is from role modeling other team members. Students could only recall a small portion of what was taught from communication curriculum. Many students were anxious about applying their skills when the scenario from clinical environment is more complex than what was learnt in the classroom.

Discussion and Conclusions: Our finding is similar to previous studies where hidden curriculum seemed to have more impact on learning communication skills among medical students. When students were unfamiliar with the clinical environment, the priority of their need was to acquire practical and immediate hands on communication skills that would facilitate their information gathering. However, this process might hamper the importance of building rapport with patients which could be a conflict to what was taught in the communication curriculum.

Take-home Messages: Teaching of communication skills would be more effective if the curriculum addresses the gap of transition into the real world.
#EPOD-COM: Communication

#EPOD-COM3 A Beginner’s Guide to Talking Genetics: Science Communication and Thalassaemia (9451)

AUTHOR(S):
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ABSTRACT:
Background: Science Communication is a wide interdisciplinary field which concerns communication of scientific concepts to a non-expert audience. The Science Communicator role is crucial in creating and maintaining a positive dialogue between the scientific community and the general public, as well as encouraging engagement in STEM. For our second year Student Selected Component, we were tasked to explore the challenges of Science Communication in medical genetics. We were supervised by Dr Saeeda Bhatti, who runs a well-established STEM engagement programme in the Gorbals.

Summary of Work: Over 5 weeks, we interviewed a mixture of professionals involved in Science Communication. The individuals we met included genetic counsellors, a public engagement officer from the Wellcome Trust, and a doctor from Bangladesh who managed a case of Harlequin Ichthyosis. We compiled some of their insights into a podcast for medical education, as well as a poster summarising key challenges in communicating genetics in the context of thalassaemia.

Summary of Results: The interviews we conducted highlighted several challenges in communicating genetic information. Challenges raised included navigating cultural differences, reducing inequities in outreach, and conveying complex information to patients who may be emotional. The Covid19 pandemic has also provided barriers to Science Communication and many interviewees mentioned the difficulty in moving online with current digital oversaturation. A major theme to overcoming these challenges was found to be building trust with an audience and involving them in the creation or path of any targeted content. Creativity was also evidently important in overcoming the challenge of communicating complex topics.

Discussion and Conclusions: As genetics is an abstract and complex field, key concepts are often poorly understood by members of the public and other non-experts. This directly affects clinical practice for those with a potential genetic condition, where an understanding of genetics is essential for good patient care and for a patient when family-planning. Taking an active interest in increasing public engagement in genetics, as well as being able to think creatively and sensitively when addressing patients and those involved in their care is thus highly important.

Take-home Messages: Embracing creativity and engaging an audience is the key to conveying complex information.
#EPOD-COM: Communication

#EPOD-COM4 Difference in peer review of interaction skills when face-to-face teaching is limited (8918)

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**ABSTRACT:**
**Background:** Good interaction skills are a central part of the work as a physician and are related to better outcome of care, and physician wellbeing (Maguire BMJ 2002; Boissy JGIM 2016). Communication skills studies have been taught at the University of Helsinki since 1994. Students enter clinical studies during year 3, meeting and communicating with patients independently and under supervision. On the second year of studies, students participate in doctor-patient simulations with an actor as a patient. During the autumn semester of year 4 they participate in simulations focusing on demanding doctor-patient-interaction situations. In 2020, resulting from the corona pandemic, interaction skills on year 4 were taught as both in person and distance teaching through the use of video-calls due to mitigation measures limiting group size. Half of the students participated in person and half from home, switching for the second session. One student at a time acted as physician, interacting with the actor patient in a mock interview. Afterwards, the group analyzed the interactional elements of the situation with a clinician instructor.

**Summary of Work:** Students were asked to voluntarily fill in a questionnaire after each simulation. The results were analyzed using Microsoft Excel for differences in rating of interaction skills by peers on four different areas.

**Summary of Results:** In total 79 answers were analyzed. Students participating from home gave a mean score of 0.08 lower (Likert scale 1-5, 5 being most agreeing with good interaction skills) for greeting, 0.06 higher for approachability, 0.2 higher for communication of the planned treatment and 0.05 higher for patient comprehension of treatment plan as compared to students participating on location. The group participating on distance reported a mean score of 0.91 (out of 1) for simulation visibility compared to 0.96 for on-site students.

**Discussion and Conclusions:** We found students participating in distance teaching to assess interaction skills similarly to their on-location peers. Visibility did not differ significantly and supports the idea of offering interaction skills studies even as distance teaching during times of limited on-site teaching.

**Take-home Messages:** Students maintain critical assessment of peers in interaction skills studies and assess these skills similarly to on-location students even when participating on distance.
#EPOD-COM: Communication

#EPOD-COM5 Novel Virtual History-Taking to Ameliorate Skills Deficit in Medical Students due to COVID-19 Educational Disruptions (8133)

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ABSTRACT:
Background: Disruptions to medical education have occurred globally as a result of the COVID-19 pandemic. As a result, many students are unprepared for clinical examinations, particularly OSCE-style assessments, having been unable to gain practice on the wards despite the fact that many medical schools plan to run these exams as normal this year.

Summary of Work: Our novel innovation was to offer weekly educational lecture sessions teaching students the basics of history taking in different specialities, followed by breakout rooms of small-group sessions wherein students could practice taking a history with a facilitator acting as the patient, based on clinical cases that we wrote. The facilitator would also provide feedback and guide the students on how to do better through use of mark schemes we created. It also offered an opportunity for medical students to get involved in a virtual teaching programme and gain points for their future portfolio, despite the fact that many traditional opportunities for teaching were unavailable.

Summary of Results: This initiative was popular, with around 40 students signing up to attend each session. Students who attended sessions unanimously stated that on a scale of 1 to 5, their confidence prior to the session in taking a history in the speciality was 2-3, and afterwards rose to a 4-5. All students who provided feedback ranked the session as being highly engaging on a scale of 1 to 5, and stated that they found the session extremely useful and interesting. All students rated the small group session as being extremely helpful, and stated that their breakout room tutor provided helpful and tailored feedback on a scale of 1 to 5.

Discussion and Conclusions: From our experience, it is evident that in the modern era, students are appreciative of novel methods allowing them to practice their clinical skills particularly through harnessing technology.

Take-home Messages: Virtual small group teaching can be a supplement for in-person teaching during COVID-19, but could also be applied in future to remove logistical or accessibility barriers that stop students from being able to access such opportunities.
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ABSTRACT:
Background: Communication skills teaching is a fundamental component of medical education traditionally taught face to face. The COVID-19 pandemic necessitated a change in approach. In April 2020, the Physician Associate Masters at St Georges, University of London, transitioned all communication skills teaching to remote delivery. Students and tutors were surveyed. Results and learning points will be shared.

Summary of Work: Microsoft Teams (MT) was utilised as the platform for online teaching. Each session lasted 90 - 120 minutes and consisted of a brainstorm, role plays, debrief and closure. The brainstorm and a fishbowl role play were conducted as a whole group. Students were split into small groups and used alternative MT meetings to complete triadic role plays. They were observed, in turn, by their tutor. Over a four-month period, students were surveyed regularly, exploring their satisfaction with online communication skills teaching. Quantitative (Likert scales) and qualitative data was collected. Tutors were also surveyed. Changes were implemented in response to student and tutor feedback.

Summary of Results: Student feedback was positive: 64% found online sessions as useful as face-to-face delivery and 67% felt more confident conducting teleconsultations. The novel delivery surpassed expectations for 64% and met expectations for the remaining 36%. Tutor feedback was also encouraging. 100% of respondents reported that online communication skills teaching exceeded their expectations.

Discussion and Conclusions: Delivery of communication skills teaching online exceeded students and tutors expectations. Clinical practice is becoming increasingly reliant on telecommunication and our online delivery mirrors this. It was notable that 67% of students felt more confident conducting teleconsultations following their online teaching. During the four-month period, online teaching evolved. Group sizes were reduced from 14 to 12 students and the online platform was changed to Big Blue Button to enable the use of breakout rooms. More fishbowl cases were used, and students were expected to have cameras turned for the duration of the session.

Take-home Messages: Online delivery of communication skills teaching can be as engaging as traditional delivery and meet both tutor and student expectations.
**#EPOD-COM: Communication**

**#EPOD-COM7 Challenges Toward Achieving Effective Communication and Collaboration Among Physicians and Nurses in ACGME-I Pediatric Program, Qatar: Follow-up Research (8681)**

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**ABSTRACT:**

**Background:** Background Clear and timely communication is crucial for patient care as it is helping in making accurate diagnosis and formulating and delivering the proper management plan which is associated with better quality of care to patients, increase teamwork and job satisfaction for physicians and nurses. Effective team communication in a hospital inpatient setting is challenging and often requiring unplanned communication among busy healthcare providers. Our Study aims to identify the barriers for effective communication and collaboration between physicians and nurses in daily inpatients practice and to follow up on the effect of the introduced improvement methods; communication skill courses for trainees and Unit based council (multidisciplinary health care providers).

**Summary of Work:** A cross sectional survey were administered from December 2020 to January 2021 among the physicians and nurses on pediatrics inpatients wards at Hamad Medical Corporation a tertiary hospital in Qatar, questioner included details of demographics, perceptions and barriers to proper communication in daily clinical practice. Questions offered objective answers utilizing the 3-point Likert scale.

**Summary of Results:** A 124 responses in 2015, 83 were Physicians and 41 Nurses compared to 83 responses in 2021, 42 Doctors and 41 Nurses. 66% of physicians and 73% of nurses stated that there is no delay in relaying information related to patients care in 2021 in comparison to 55% and 43% respectively on 2015. 68% physicians had a good communication with nurses compared to 44% nurses, 2021 survey showed improvement in communication from both sides specially nurses which improved from 44% to 90%. Accurate and correct information, 2020 survey showed significant improvement from 14% to 42% nurses side and 14% to 70% doctor side, also the follow up survey showed that access to high quality physicians/nurses became easier.

**Discussion and Conclusions:** Our study shed light on importance of optimal physician-nursing communication in pediatrics Inpatient setting; better understanding of these aspects will insure excellent patients care level. Our findings also showed that how several strategies succeeded in overcoming proviruses identified these challenges.

**Take-home Messages:** Proper communication among health care providers will lead to excellence the patients safety and care.
Effective communication and collaboration among physicians and nurses in pediatric ACGME-I program: follow up assessment (8516)

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ABSTRACT:
Background: Effective team communication between physicians and nurses in a hospital inpatient setting associated with better patient care, increase teamwork and job satisfaction for both. Our aim was to explore and compare the perception of physicians and nurses toward proper communication and collaboration after intervention approaches.

Summary of Work: A cross-sectional survey administered from 9-11/2015 in pediatrics inpatients wards at Hamad Medical Corporation the main tertiary hospital in Qatar followed by post intervention program survey (Created Unit-Based council (multidisciplinary health care providers) and communication skills course for trainee) in 11-12/2020. Questioner included details of demographics, perceptions towards proper communication and collaboration in daily clinical practice. Questions offered objective answers utilizing the 3-point Likert scale.

Summary of Results: 128 response: 66% physician, 44% nurses included in previous study vs current study 83 responses: 51% physician, 49% nurses. 69% of Pediatricians stated that they enjoyed communication with nurses before compared to 59% after, on the other side nurses stated enjoyment were 42% previously and 73% afterwards. In terms of planning together before making decision physician before (6%) had agreement previously compared to 52% in the later study. Nurses 41% agreed in the prior study compared to 55% in the following. Sharing decision has significant rise. In first study 28% physicians agreed that sharing decision occurs between doctors and nurses compared to 60% after. Nurses had similar increase with 49% before and 68% after. 30% and 46% of physicians and nurses respectively stated that there is cooperation in decision before vs 60% and 61% respectively after.

Discussion and Conclusions: Our study showed that physicians and nurses perceptions improved after the applied intervention, Nurses seem to be more affected by the interventions. The biggest effect of intervention is seen in sharing decision as both had almost similar rise. Promoting communication and collaboration in a complex clinical environment is paramount, interventions such as interdisciplinary rounds, adapt structured communication tools, improve organizational culture and implement communication workshops into health care providers curriculum have great impact as seen in our study and should be encouraged.

Take-home Messages: Communication and collaboration among healthcare providers is crucial for patients safety.
AUTHOR(S):
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ABSTRACT:
Background: Video has long been used as a key learning tool to assess and feedback on trainees developing consultation skills. iConnect provides a platform to record patient consultations and then upload them to secure cloud storage. Trainees can review their consultations on phone, tablet or desktop and use in-built tools to comment on, edit and analyse recordings. Trainees can release recordings to their trainer to view remotely, so both can reflect on the interaction.

Summary of Work: iConnect has been used in a GP training practice and for GP trainer re-accreditation. This study is the first larger scale educational evaluation of the use of iConnect by GP trainers and trainees in Wessex. The aims were to explore: •How iConnect has been used, and how it fits with other teaching and learning strategies; •The strengths and weakness if it; and •Any suggested changes or improvements. A qualitative mixed-methods approach was used for the evaluation. It comprised a questionnaire, interviews, and analysis of usage data. The data were examined to map how iConnect was used and how it fitted with other approaches to teaching and learning.

Summary of Results: Trainees reported a range of approaches to using it, from simple viewing and discussion in a face-to-face tutorial to more complex distanced approaches. Key to this was the COVID-19 pandemic which saw a significant shift for some, most notably those needing to prepare for the RCA. The need to record consultations drove a more comprehensive and sustained use in gathering a library of consultations and reviewing them with the trainer to hone consultation skills. Trainees found it easy to use, much less intrusive than video recording, and valued the security aspects. Trainers reported good engagement, though reluctant recorders needed coaxing to open their practice up to being filmed and fully explore the possibilities.

Discussion and Conclusions: iConnect has been used in two quite different ways pre and during the pandemic - the reduction in face-to-face education time and increase in remote supervision led to a proactive use of iConnect.

Take-home Messages: The value of video to learning and feedback can be enhanced using applications such as iConnect.
#EPOD-CT: Clinical Teaching

#EPOD-CT1  Personal disclosure by Healthcare Professionals During a Consultation  
(8123)

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ABSTRACT:  
Background: Previous studies have reported mixed results about patient satisfaction with disclosure of personal information by their physicians. Physicians often wonder how patients will react when they disclose personal information about themselves. It was decided that a study about this would be beneficial to our cultural context in North America.

Summary of Work: Seventy-five consultations at a Primary Health Centre were included in the study. Informed consent was obtained. Participants were told that the study revolved around communication skills and would be used to help teach future healthcare workers. The physicians were given pre-planned pieces of personal information to disclose, relating to health concerns that were anticipated. An example would be: I also recently had influenza and knows what if feels like. Sensitive topics such as mental and genitourinary issues were excluded, as were patients under the age of 18. The participants were given a questionnaire afterwards for their perspective on the disclosure of personal information. They were then debriefed about the purpose and methodology of the study.

Summary of Results: The results of the study were overwhelmingly positive. None of the participants felt that the disclosure of personal information was inappropriate. Many of the participants did believe that disclosure of personal information by their physician was appropriate only in certain situations and if the physician does not cross boundaries. Themes that emerged included: 1. Patients felt more at ease / comfortable after physician disclosed personal information, 2. Patients felt physicians understood and could relate to their problems better after disclosure of personal information, 3. Self-disclosure by physicians brought a human element to the consultations and 4. Self-disclosure builds trust and enhances patient-physician relationships.

Discussion and Conclusions: Disclosure of personal information by a physician to their patients has a positive effect. The recommendation is that physicians disclose personal information to their patients in a professional way.

Take-home Messages: Patients welcome personal disclosure by their physicians, as long as it is done professionally and does not take away from their own health experience.
#EPOD-CT: Clinical Teaching

#EPOD-CT2 Child Health ESsential Skills Stations (CHESS): The Development, Implementation and Evaluation of an Undergraduate Paediatric Clinical Skills Course (9585)

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ABSTRACT:
Background: Graduating medical students are required to demonstrate competence in a range of clinical procedures relating to child health. Medical curricula are increasingly fragmented by a mixture of classroom-based teaching and short clinical placements, whereas opportunities to undertake clinical skills on the wards are increasingly rare. In a time where the COVID-19 pandemic has limited exposure to clinical areas, it is pertinent that local education providers provide high quality clinical skills teaching. This project involved the design, implementation and evaluation of a half-day clinical skills course, which was embedded within the four-week paediatric block undertaken by final year medical students.

Summary of Work: A series of five clinical skills stations were designed in accordance with best practice and in alignment with the medical school curriculum. Each skills station involved a short didactic theory session followed by practice of the procedure or discussion around a clinical case. A mixed-method research methodology was employed to evaluate student perception of the course, recommendations for future improvement and self-reported confidence in developing these skills. The course was adapted following feedback analysis from the first two courses.

Summary of Results: Four courses have been delivered to 138 students. Self-assessed pre and post confidence scores across the learning outcomes were collected, all of which showed a significant improvement (p <0.001). Thematic analysis of free text feedback revealed key themes including: acquisition of confidence, value of practicing procedures, limited opportunities for practice in the clinical workplace, a perceived knowledge gap on prescribing, the realness to using actual prescription charts and desire for further practice in prescribing.

Discussion and Conclusions: We have shown that implementation of a face-to-face paediatric clinical skills course is not only highly valued by medical students, but also leads to significant improvement in confidence of performing these skills.

Take-home Messages: Simulation of clinical procedures is an effective and enjoyable method of improving confidence in paediatric clinical skills.
Decision-making in prenatal consultations: A qualitative analysis of interactional practices (8527)

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ABSTRACT:
Background: Obstetric care professionals are increasingly trained to support patients autonomous decision-making in order to facilitate higher experienced decision satisfaction and higher treatment compliance. Normative models and theories about interaction are often part of these professional training. These models and theories are professionals stocks of interactional knowledge(SIKs); a toolbox from which professionals can select tools to tailor their interaction to individual patients. However, at this moment, it is unknown, how professionals stimulate patients autonomy, and to which extent they use the techniques from their SIKs-toolbox.

Summary of Work: In this study, twenty professionals (midwives and obstetricians) were observed and audiotaped to get insight in the way they used their SIKs during real-life prenatal consultations. An inductive qualitative analytical approach was used, based on principles from Conversation and Discourse Analysis. The first analysis was done by two researchers, JK, an educationalist and non-practicing midwife, and AdlC, a linguist working in medical education. The analysis was conducted in an iterative manner, in which interactional phenomena and patterns found were discussed in an interdisciplinary team on a regular basis.

Summary of Results: 1) Professionals do most of the talking by providing information without taking time to verify if the patient understood it well. Specifically interesting in this context is the frequently used yes-sequential pair, where both parties seem to agree by saying yes, but it has not been specified what is understood. 2) The person in charge of the interactional flow can vary. In one type of interaction the patient asks questions, with the professional answering and giving information. In another type of interaction the professional leads and asks questions. The final and completed results will be presented at the conference.

Discussion and Conclusions: The preliminary results show in contradiction with SIKs that professionals talk the most instead of the patient. Professionals also neglect to formulate clear agreements in collaboration with their patients. Why is this happening? What does this mean for professionals training?

Take-home Messages: It is important to bridge the gap between SIKs and daily practice. The results of this study can help us to align SIKs and daily practice.
Given that the future is likely to be blended, which elements of virtual clinical placement work well for learning and which do not? The Medical Student Perspective (9111)

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ABSTRACT:
Background: COVID-19 has impacted the way that medical students are taught, with a large scale movement from face-to-face towards virtual learning. Research in the UK and across the world has been exploring the impact of virtual university-based learning on the student experience, highlighting the advantages and disadvantages that come with this movement (Wilcha 2020, Amir et al. 2020). To date, research exists that has started to explore the impact of clinical placements facilitated virtually, including comments from the student perspective (Darnton et al 2020). However, as far as we are aware, there is no qualitative student-led (insider) research regarding the students lived experience of this new style of clinical placement. Given the likelihood of a blended future, it is important to find out from the students as key stakeholders, their perspectives on what is working well or not so well in terms of virtual clinical placement.

Summary of Work: This insider research seeks to understand the views of medical students from one institution, regarding the COVID-19 necessitated new and virtual clinical placement approach. We will discuss which elements of virtual placements support students in their journey towards becoming clinicians and understand why some elements of this new approach may not have been received well by the students. This qualitative research study will engage 8 University of East Anglia students, ranging from year 2-5 in semi-structured, taped and transcribed interviews. An inductive thematic analysis will elicit key themes.

Summary of Results: This work in progress study will be completed by June 2021. In our presentation, we will share the key themes and storylines that emerge from our analysis.

Discussion and Conclusions: Our findings will be interpreted in the light of educational literature, taking a holistic approach to our understanding of the learner as future clinicians. We will look at the impact of virtual clinical teaching on various aspects of their learning experience, and how this input could inform the planning of successful, blended approaches to clinical placement.

Take-home Messages: We will unpack medical students lived experiences and storylines regarding virtual clinical placements, exploring how the learning environment has affected them and their journey towards becoming a clinician.
#EPOD-CT: Clinical Teaching

#EPOD-CT5 Global experiences of teleconsultation training in undergraduate health care and social work education - a systematic review (8631)

**AUTHOR(S):**

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**ABSTRACT:**

**Background:** Previous studies and the COVID-19 pandemic stressed the importance of teleconsultation in health care. Educating the workforce is essential to continue with safe, high-quality delivery of services and increases the likelihood of implementing teleconsultations in health care. While training for the workforce is encouraged, teleconsultation education in health care and social work programmes are seldom documented. Therefore, the present review aims to investigate global experiences of teleconsultation training in undergraduate health care and social work education.

**Summary of Work:** A systematic review of peer-reviewed literature was undertaken. Electronic databases were searched for eligible evidence. Grey literature was excluded. Studies had to describe or evaluate education in teleconsultation of undergraduate health care and social work students. It was not intended to analyse digital learning in health care and social work education. The search identified 586 articles published between 2010 and 2020.

**Summary of Results:** After screening the articles, 17 cross-sectional, non-randomized interventional, and interview studies were included. The mode of delivery of training sessions included practical experiences with simulated patients or experiences during clinical placements. The majority of courses were not mandatory and focused on videoconsultation as opposed to telephone consultation and email correspondence. Overall, health care students felt more confident in offering and using teleconsultation and their knowledge increased after training. Feedback on courses was genuinely positive; students valued the relevance of the topic, real-life experiences, immediate feedback and supervision. Qualitative studies, in particular, lacked reporting on data analyses and did not represent the participants adequately.

**Discussion and Conclusions:** The review shows that mandatory learning in telecommunication and teleconsultation is rare in undergraduate health care education. Even though educators and students advocate for training being offered in health care curricula, only few regions worldwide report on learning about teleconsultation in undergraduate education. International guidelines to regulate telemedicine in educational settings lack clarity, and little focus is given on special training in teleconsultations.

**Take-home Messages:** Training sessions in teleconsultation are a legitimate way to expose students to telemedicine. High satisfaction rates, increased knowledge and confidence in use indicate that students welcome this education. Nevertheless, further high-quality research and guidelines are warranted.
**ABSTRACT:**

**Background:** Clinical placements are paramount in preparing medical students to become doctors, through experience and participation in relevant activities. There is plenty of advice for doctors on how to engage students - there is a sparsity of medical students opinions on these ideas. Therefore, through linguistic analysis, we identify the factors students find important in improving their clinical experience.

**Summary of Work:** 19 third year Bristol University medical students were asked the question what would you tell the next cohort of students having placement in this institution? after their first clinical attachment. Their answers were written anonymously on postcards. These were typed and a word cloud was generated through TagCrowd (tagcrowd.com) of commonly used words, both with and without filters (removing words used commonly in the English language, such as pronouns). Common words underwent concordance analysis (esl.fis.edu/grammar/analysis/concord.htm). Words pertaining to specific educators or medical specialities were omitted.

**Summary of Results:** The words which appeared most commonly with the filter on were clinics (13), clerk (9), teach (8) and ward (8): without the filter, to (43), go (23) and you (22) were notable additions. Through concordance analysis, clinic was always associated with go or get into. Only 3 times was it associated with a specific clinician or quality, with 2 of these related to quantity of learning. Clerk was always used as a verb, associated with quantitative terms such as more, frequently and variety. Teach was 5 times associated with self-directed learning. 19 uses of the word go were to a specific activity, such as ward or clinic, with 8 of these being associated with a quantitative word such as loads or lots. Learn was associated with a quantity term 4/6 times of its use.

**Discussion and Conclusions:** Medical students are quantity driven over finding quality experiences or learning. Being physically present at a clinic or a ward round was more important than qualities associated with enhancing the experience. There is a recognition of being self-driven, noted by the use of the active go and pronoun you.

**Take-home Messages:** Students value a lot of activities rather than curating specific, enhanced learning opportunities. Quantity could therefore be offered during clinical placements.
#EPOD-CT: Clinical Teaching

##EPOD-CT7  Do Not Attempt Resuscitation: Reviving Medical Student Confidence in DNACPR Discussions (8739)

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**ABSTRACT:**

**Background:** Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) discussions are key to good medical care for many patients. It is vital that new graduates understand the legal and ethical implications of these decisions, to allow full participation in multi-disciplinary team discussions and ensure they can answer ad hoc questions from patients. Recommendations exist that training should take place throughout a doctors career, with lack of training and experience identified as key barriers to these discussions.

**Summary of Work:** Using an authentic scenario, a one-off, 30-minute, interactive, near-peer teaching session was delivered to a group of final year medical students (n=12) by two Foundation Year 2 doctors. Students were asked to self-assess their confidence and understanding of DNACPRs pre- and post-intervention.

**Summary of Results:** The intervention was well-received by students, with all rating it highly for content, relevance and presentation. Students reported an increase in their confidence in discussing DNACPRs with patients and their relatives. Students confidence regarding the legal position of DNACPRs and the role of Lasting Power of Attorneys in relation to DNACPR discussions also increased (from 58% to 83% and 42% to 92%, respectively). Following the intervention, 67% of students agreed or strongly agreed that their practice would change as a result of this session (with the remainder remaining neutral). Students highlighted a better understanding of the legal position of DNACPRs and use of key phrases (e.g. we would like your view) as areas in which their practice would change.

**Discussion and Conclusions:** Through an interactive case presentation, confidence surrounding DNACPRs increased, especially in those who lacked confidence initially. This intervention was time efficient and realistic. Classroom settings provide safe environments to discuss complex and emotive issues. Whilst this intervention was conducted prior to the Covid-19 pandemic, disruption to clinical placements during the pandemic has further increased the need for effective classroom-based interventions, although further study is needed to understand if the changes students highlighted translate into clinical practice.

**Take-home Messages:** DNACPRs are a crucial part of good medical practice. The ability to initiate DNACPR discussions is a key skill that requires preparation. An authentic, near-peer led case discussion is a time and cost efficient method of addressing this subject.
#EPOD-CT: Clinical Teaching

#EPOD-CT8 Occupational therapy and physiotherapy clinical educators’ experiences of providing clinical education in a 2:1 (student:educator) format in an acute hospital (8921)

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ABSTRACT:
Background: Occupational therapy and physiotherapy clinical educators provide students with opportunities for learning in clinical placements. A 2:1 (student: educator) format of clinical education was introduced to provide sufficient clinical placements as there were increasing needs for clinical placements. Hence it is necessary to explore clinical educators experiences with this model of supervision and to understand their perceptions of any benefits or challenges in providing collaborative learning placements.

Summary of Work: Occupational therapy and physiotherapy clinical educators who were involved in supervising students from October 2019 to December 2020, in an acute hospital in Singapore were invited to participate. The data are presented using descriptive statistics, and open ended questions were sorted into categories.

Summary of Results: 33 clinical educators (16 OTs and 17 PTs) participated in this study. The majority (66.7%) provided orientation to students on clinical procedures and expectations of placement in pairs, and facilitated pairs of students to engage in peer learning (51.5%). Although the students were paired, their performance was assessed individually, and more gave feedback to student(s) on clinical skills individually than in pairs. Feedback on professional behaviour was also given individually by 45.5%; and 42.4% discussed student(s) learning needs and goals individually. The majority also felt that the students encouraged and facilitated each other in their tasks, and were motivated to work together. Responses provided by the clinical educators included benefits and challenges of this supervision format, as well as descriptions of Facilitating students to work together; and Students providing support and learning from each other.

Discussion and Conclusions: The clinical educators shared positive views towards supervising students using this collaborative learning format, for example the peer support among students and opportunities to learn and discuss with each other; although some also expressed concerns about managing workloads, and teaching students with different levels of performance. Understanding the experiences of clinical educators may support the development of strategies for clinical education in this supervision format.

Take-home Messages: The 2:1 (student: educator) format could be used as a method of providing clinical supervision for OT and PT students, and understanding the experiences of the clinical educators may support the development of resources and training for clinical educators.
#EPOD-CT: Clinical Teaching

#EPOD-CT9  The Virtual Diagnostic Expertise Acceleration Module through Creating a Repertoire of Illness Scripts for Clinical Education (8449)

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ABSTRACT:

Background: To develop diagnostic expertise, medical students study content knowledge and engage in experiential learning to establish relationships that encapsulate medical information into organized knowledge with deep personal meaning- an illness script. The use of an illness script framework to help learners organize medical knowledge is an evidence-informed approach to teaching this crucial step of pattern recognition in diagnostic reasoning.

Summary of Work: We developed the PSU-Creating Illness Script Exercise (P-CISE) that utilized deliberate practice and script theory to coach learners to formulate a repertoire of illness scripts in an accelerated fashion. The P-CISE is an asynchronous, virtual case-based learning module for students to acquire both clinical knowledge and practice diagnostic reasoning simultaneously and thereby prepare them for upcoming clinical rotations. The P-CISE asked students to read a case, make a diagnosis, and then create an illness script with four components: epidemiology, temporal relation, syndrome, and pathophysiology. After completion of the module, students were asked to complete a 10-item, 5-point Likert scale System Usability Scale (SUS) and a survey of educational effectiveness. The module was piloted with various learners and faculty, revised, and was implemented for the 5th year medical students during Pediatrics rotations. Each student was evaluated on the percentage of correct diagnoses and the quality (richness and maturity) of their illness scripts, and received feedback from preceptors.

Summary of Results: Fifty students used the module. The mean SUS, a global view of subjective assessments of usability, was 72.85 (100= Excellent, 68 is average for the industrial standard). Students rated learning experience highly (Mean 4.14, SD 0.61, 5= Very satisfied). Educational effectiveness survey showed significant improvement with a large effect size (Cohens d) in confidence to making a diagnosis (1.10) and in formulating an illness script (0.86).

Discussion and Conclusions: The P-CISE enables learning about medical diagnoses and practice creating illness scripts. Evaluative data support its ease of use, educational effectiveness, and improved learner confidence in making a diagnosis.

Take-home Messages: Novices gain diagnostic expertise through formulating a repertoire of illness scripts. The P-CISE uses deliberate practice, evidence-informed approaches and learning technology to accelerate this development.
ABSTRACT:

**Background:** Dermatology examination for medical students is complex due to various technical terms and need a detail description. At the Outpatient department, The student should collect the patient data and describe skin lesion to medical teachers in a limited time. This study aims to explore the utility of an electronic form compared with the standard paper form in skin examination to assisted learning in an outpatient setting.

**Summary of Work:** Medical students who rotated at the dermatology outpatient department will undergo a physical examination of 2 patients. They were assigned to use two types of medical forms (the standard paper form and the electronic form), one form per one patient. The electronic form comprises of sample pictures of various lesions and methods to describe the rash. Before starting their 10 minutes of physical examination, the teacher provided some of the patient data. The student knowledge and attitude were assessed and feedback before and after they perform the skin examination.

**Summary of Results:** 37 of fifth-year medical students participated in this study. There was no statistical difference between the attitudes and knowledge of the medical students before the examination. This study found that the electronic form could help to approach and differential diagnosis the disease (numerical rating scale 0-4 = 3.0+/0.87 versus paper 2.58+/0.79, p-value 0.024) and aid in learning (3.08+/0.75 versus paper 2.5+/0.86, p-value= 0.003. The participant suggested that the electronic form is useful and should be adapted to operate on many platforms, especially on the mobile phone, but patient confidentiality is a major concern.

**Discussion and Conclusions:** Developing a good electronic physical examination form should help medical students easily completed patients data and gave a pattern to determine the cause of a patients illness, particularly in the dermatological examination. The information entered in the electronic form is also easy to verify and help medical teacher contributing their feedback systematically.

**Take-home Messages:** Electronic physical examination form can guide a medical student for learning in a short period of times.
#EPOD-CT: Clinical Teaching

#EPOD-CT11 Transforming medical students' perspectives through humanistic reflective learning in intensive care unit rotation (9238)

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ABSTRACT:
Background: Reflective writing has been used in medical education, particularly in clinical milieu filled with impactful experiences, to enhance students’ reflective capacity, resilience, and empathy. Through writing, students go through intellectual and emotional processes of becoming physicians that are valuable in clinical learning. This research examines the effectiveness of including reflective writing in ICU rotation exit reports.

Summary of Work: Students in second year clerkship at a Taiwanese medical university participated in two-week ICU rotation during the 2019 academic year. Researchers introduced reflective writing model that has affective elements to clinical teachers in charge. Upon entering this rotation, students were briefed on reflective writing and asked to include reflection in their exit reports. Only writings that go beyond mere description of events were assessed using mixed-methods approach. An adapted rubric assessed four criteria: (i) description of event(s), (ii) exploration of emotions, (iii) students values and how they relate to reactions to impactful experiences, and (iv) meaning making and future actions. Inductive thematic analysis was also conducted.

Summary of Results: Findings from the final 57 writings (out of 65) analyzed indicated students were able to recognize their own emotions, but hardly discussed why they felt that way (2.86/4). Some students briefly discussed how their values relate to reactions to impactful experiences, but did not further reflect on how changes in values relate to future actions (2.39/4). Students were able to make some meanings from experiences (2.65/4). Further qualitative analysis showed students were able to (i) connect their own and patients experiences, (ii) identify aspects that need improvement, (iii) acknowledge importance of trust in doctor-patient/advocate relationships in shared decision making, (iv) learn through role-modeling, (v) identify challenges faced by health providers, and (vi) reflect upon values and belief when confronting patients death.

Discussion and Conclusions: Triangulated findings showed that reflective writing empower students to attend to their own and others emotions, form connections between experiences, recognize their own values and what needs improvements, and learn through role-modelling the importance of trust in doctor-patient/advocate relationships. This study implies that reflective writing should be included to clinical training.

Take-home Messages: Creating opportunities for students to develop more in-depth reflection of their clinical experiences showed students exploration of patients suffering and their own emotion.
Learning the six core competencies through physician shadowing for junior medical students (9335)

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ABSTRACT:
Background: Shadowing physicians of different specialties is frequently practiced by pre-medical students. At our medical college, an elective course to shadow physicians was arranged for the first time for junior medical students who had no shadowing experience. Whether the six ACGME core competencies could be learned earlier through this course and the impact of clinical shadowing were evaluated.

Summary of Work: Ten grade two medical students were divided into five groups and shadowed 13 physicians of different specialties/subspecialties in turn at an affiliated hospital during their first semester in 2020. These specialties/subspecialties included anesthesiology, cardiology, cardiovascular surgery, emergency medicine, gastroenterology, general surgery, neurosurgery, nephrology, ophthalmology, orthopedics and urology. The sites where clinical shadowing took place were emergency rooms, general wards, intensive-care units, operation rooms and out-patient clinics. After the course, all students had to report their gains and feed backs. Whether they could learn more about the six core competencies, namely practice-based learning and improvement (PbLI), patient care and procedural skills (PC), systems-based practice (SbP), medical knowledge (MK), interpersonal and communication skills (IPCS) and professionalism (P), was also analyzed.

Summary of Results: The most learned competencies were PbLI and IPCS (100%), followed by P and SbP (90%), and PC and MK (80%). All students agreed that clinical shadowing helped them to know more about the work of physicians. Eighty percent of the students thought that clinical shadowing helped clarify if they were suitable to become physicians or not. Seventy percent of the students agreed that clinical shadowing helped them to understand more about the difficulties physicians encountered and helped them to become better doctors in the future.

Discussion and Conclusions: Physician shadowing is not only good for pre-medical students but also junior medical students. The six core competencies may also be learned outside of classrooms at pre-clinical stage through observation and reflection. Shadowed by junior medical students, physicians may improve their performance through demonstration and feed backs.

Take-home Messages: Physician shadowing at hospital may be arranged for junior medical students. All the six competencies and the actual work of physicians can be earlier learned and recognized, respectively.
#EPOD-CT: Clinical Teaching

#EPOD-CT13 The Resuscitation Elective: A Novel ED-Based Critical Care Elective for Medical Students (7847)

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ABSTRACT:

Background: Traditional critical care rotations present heterogeneous opportunities to participate in acute resuscitation. Students often express concerns over their self-perceived preparedness to resuscitate the critically ill. With increasing patient volumes presenting to the Emergency Department (ED) and critical care boarding on the rise, the need for early exposure to the practice of resuscitation is increasing.

Summary of Work: By the end of the Resuscitation elective, learners will be able to: 1. Recognize downstream consequences of initial ED resuscitation interventions. 2. Develop and answer clinical questions in an evidence-based manner. 3. Recognize habits of effective resuscitation leadership. This one-month clinical elective bases students in the ED to participate in initial resuscitation efforts and then allows flexibility to follow these patients through their ICU course. Utilizing flipped-classroom approach, students review primary literature and attend multiple weekly discussion sessions with Emergency Critical Care (EM/CC) faculty. Students are expected to develop a weekly clinical question that they answer through literature review and share with the group weekly. Evaluation is completed via semi-structured interview, validated evidence-based medicine assessment and simulated critical patient scenario after the course to determine changes in self-perceived efficacy in caring for critically ill patients.

Summary of Results: Learner feedback has been overwhelmingly positive to this point. Students cite an increase in leadership ability as a result of their increased exposure to resuscitation scenarios coupled with increased EM/CC mentor advice and attention. All 7 students identified a lack of exposure to critically ill patients as a limitation of their training. Thematic evaluation shows students lack understanding of the hierarchy of priorities within a resuscitation.

Discussion and Conclusions: The resuscitation elective seeks to accelerate the learning curve of medical students in regards to critical patient management and leadership. Future directions include comparing this experience against more traditional ICU rotations among different learner levels and specialties. We are seeking to elucidate the effect the resuscitation elective could have on patient outcomes.

Take-home Messages: The Resuscitation Elective, a novel ED-based critical care elective, shows promise as an effective teaching tool that could reduce the reliance on more traditional ICU experiences.
ABSTRACT:

Background: The benefits of bedside teaching are well documented (1). In the 1960s it was estimated that 75% of clinical teaching was delivered in this way (2). Recently the prevalence of bedside teaching has dramatically declined, estimated around 17% (3). The University of Bristol MB ChB Medicine course was redesigned incorporating newer teaching modalities e.g. case-based learning, with the first intake in 2017. Timetabled bedside teaching sessions were introduced to the paediatric course with the first placement in 2020. We evaluated student opinion of bedside teaching.

Summary of Work: Medical students in paediatrics at Bristol Royal Hospital for Children provided feedback on bedside teaching sessions using an anonymised online questionnaire. Each session involved one doctor teaching two students with each student examining a patient followed by peer and teacher feedback. End of placement interviews were included.

Summary of Results: 160 completed questionnaires were collected from 45 students over 4 months. 99% of responses documented increased confidence in the topic covered; 87% strongly agreeing. No student reported feeling less confident after the teaching. 19% of responses mentioned feedback e.g. it was useful to have individualised feedback and really helpful constructive feedback. Interviews documented this is the first teaching we have had like this and best part of the course.

Discussion and Conclusions: We identified that students highly rate traditional bedside teaching, out of keeping with its recent decline. We documented a positive student experience during the COVID19 pandemic further highlighting the importance of bedside teaching. Compared to other modalities this required more doctors and more time. However, enthusiastic student feedback demonstrated added value.

#EPOD-CT: Clinical Teaching

#EPOD-CT15  Design and implementation of a respiratory bedside teaching programme for medical students (9128)

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ABSTRACT:

Background: The literature demonstrates that both students and teachers appreciate bedside teaching and it can support improvement of clinical and diagnostic skills. However, there has been a decline in the amount of bedside teaching and one of commonest reasons stated in the literature is clinical staff lacking time to support the teaching.(1) Formal teaching programmes with dedicated tutors can improve the amount and quality of bedside teaching.

Summary of Work: Working with local tutors and undergraduate centre, four education fellows designed and implemented a student-focused three-week bedside teaching programme for third year medical students supporting their respiratory placement. This involved an induction and three small group bedside teaching sessions a week which were supported by the fellows and other junior doctors from the wards. This programme was evaluated by pre- and post-questionnaires and iterations made.

Summary of Results: Students completed pre- and post-questionnaires using Likert scales (1-10) to score their confidence and ability in a range of elements related to the bedside teaching project. Initial results in the five areas covered demonstrated an increase in ability and confidence. The average score increase are indicated for the sections: knowledge of common respiratory conditions (1.9); confidence with taking histories (3.1) and examining patients (3.4). When asked if the bedside teaching programme was useful to their learning, the average score was 9.6. Written feedback was provided by students highlighting the sessions as beneficial and suggestions that they could be used for their work-based assessments which is now being implemented.

Discussion and Conclusions: Having a dedicated education team running the programme allowed consistency in the teaching provided unaffected by clinical commitments. Regular observation of students from the weekly frequency of sessions meant that progress could be monitored over the course of the programme. This teaching was limited by disparity in patients available in the hospital setting.

Take-home Messages: The small group bedside teaching was positively received and reflective of the literature, students experienced an increase in ability and confidence. Dedicated programmes have potential for incorporation of formative and summative work-based assessment. References 1.Peters M, Ten Cate O. Bedside teaching in medical education: a literature review. Perspectives on medical education. 2014 Apr;3(2):76-88.
#EPOD-CT: Clinical Teaching

#EPOD-CT16 Applying video-reflexivity for learning clinical reasoning during oral case presentation (8913)

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ABSTRACT:

**Background:** Clinical reasoning which defined as the thinking through various aspects of patient care to arrive at a reasonable decision regarding the diagnosis and treatment of patients. Oral case presentation (OCP), which is an important clinical activity, may showed the presenters diagnostic and therapeutic reasoning. The study was designed to know the effects of applying the video-reflexivity to assist the learning of clinical reasoning during OCP of medical learners.

**Summary of Work:** This is a qualitative longitudinal video-study of 20 medical learners participants (5 PGY2, 5 PGY1, 5 M6 students, 5 M5 students) who performed OCP twice per three months for 1 year. The video-reflexivity in which the participants watched their own OCP videos and do reflection with researchers were performed every three months. The transcribed data of the OCP and the process of video-reflexivity were analysed.

**Summary of Results:** The 80 sections of video-reflexivity data showed the participants reflected on the amount of medical knowledge, thinking process, differential diagnosis, and the sequence of presentation. Different level participants paid attention to different focuses. The OCP data demonstrated that individual participant showed increased frequency of the semantic qualifiers, increased numbers of differential diagnosis, improved fluency, and reduced numbers of superfluous words in progress of the study year. Most participants agreed that they focused on whether the OCP content convince me during the reflection when they watched their own OCP videos.

**Discussion and Conclusions:** Different level learners showed some difference in the proportion of fact presentation and reasoning description. Even they focus on different contents during video-reflexivity, most of them have showed the progress of clinical reasoning and agreed that the process of video-reflexivity helped them to improve their abilities of OCP and clinical reasoning. The study showed that different level medical learners showed different contents of OCP and clinical reasoning. Applying video-reflexivity can assisted them to show their progress of the learning clinical reasoning during OCP. Whether to convince themselves is an important point of the reflections during reviewing their own videos.

**Take-home Messages:** The video-reflexivity can help the medical learners to improve their abilities of OCP and clinical reasoning via reflecting on convince themselves.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT1  Virtual Teaching Clinics: Learning from patients safely during Covid-19 (8877)

**AUTHOR(S):**
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**ABSTRACT:**

**Background:** At the heart of the medical curriculum should always sit the patient. Patients have much to teach about living with chronic conditions. But these patients are some of the most vulnerable to Covid-19, and have limited opportunities to be involved in medical education recently. They are often shielding and are experiencing the psychological consequences that increased social isolation creates. The junior medical students have had very limited patient contact over the last year. To help bring these patients and students together, a virtual teaching clinic was created.

**Summary of Work:** Shielding patients in the community were invited to be part of a virtual teaching clinic. In this clinic they would speak to second year medical student by telephone for 30 minutes. The focus was on learning from lived experiences, not taking a perfect history. The patients experience would then be discussed in a group with a facilitator to dissect the important aspects of the presentation, management and impact on the patients lives.

**Summary of Results:** 12 students were invited to take part in a pilot clinic in three groups. All students agreed that the virtual teaching clinic was useful for their learning needs. 83% of students thought it was an appropriate substitution for a normal outpatient clinic and 83% would like to have more virtual clinics. Free text comments from students included I enjoyed hearing the patients histories and I thought it was a really good substitute as we got to speak to real patients and also improved my understanding of patients views of conditions. Equally as important, the patients enjoyed speaking to the students and all requested to be involved in future virtual clinics.

**Discussion and Conclusions:** With limited technology requirements (a mobile phone with speaker), the students were able to experience an enjoyable and educational virtual clinic whilst simultaneously the patients enjoyed talking to new people and helping during the pandemic. The virtual clinic will continue to run whilst patient contact opportunities are limited and is easily reproducible in other areas.

**Take-home Messages:** The clinic was easy to arrange, raised important discussion points and gave everyone involved a sense of togetherness during a period of increased isolation.


#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT2 Using Microsoft Sway for Pre-learning of Clinical Skills - What do students want to see? (9640)

AUTHOR(S):
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ABSTRACT:
Background: Despite the widespread disruption caused by the COVID-19 pandemic, it is recognised that continuation of medical education is crucial. If students are to meet General Medical Council requirements as outlined in their Outcomes for Graduates Guidance, it is essential that they receive high quality clinical skills teaching. Social distancing guidelines and restrictions on face-to-face teaching have forced change on many traditional methods of teaching. At Keele University Medical School, sessions have now been adapted; we have generated pre-session online learning material using Microsoft Sway software to complement the face-to-face components. By doing this we have maintained a face-to-face component but reduced group sizes and contact time.

Summary of Work: Pre-learning material was generated in 2020 by the clinical skills team using Microsoft Sway, a free app from Microsoft Office. A Sway was developed for each skills session, including communication, examination and procedural skills. Medical students from years 1-5 were asked to complete online feedback forms embedded into each sway, offering the chance to highlight what they valued and what improvements they would suggest. Textual responses from all feedback forms were collated and thematic analysis undertaken to identify key characteristics that students value in such pre-learning material.

Summary of Results: During the academic year 2020-21 630 Keele medical students had access to over 50 Sways. Initial student feedback highlighted a preference for information in clear bullet point or note form. Students also sought examples of practice including elements of communication and documentation and particularly valued the video examples embedded in the Sways.

Discussion and Conclusions: This flipped classroom approach to clinical skills teaching at Keele Medical School has been necessitated by the restrictions imposed by the Covid 19 pandemic. Microsoft Sway was chosen as an easy to use and interactive platform. Students valued the format offered by Sways and its web-based operation means material can be easily updated and refreshed. The online environment is saturated with learning materials, including many that relate to clinical skills. It is vital that those created by medical schools are of high quality and meet the needs of learners.

Take-home Messages: Clinical skills pre-learning material needs to be succinct, well organised and include examples of practice.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT3 Lessons Learned: Teaching Solutions for Medical Education during the COVID-19 Pandemic (9344)

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ABSTRACT:

Background: The COVID-19 pandemic caused significant disruption to training for medical students, with traditional teaching methods requiring retooling in order to allow students to meet their graduation requirements. We report several novel changes in teaching methods that allowed final year medical students to continue their education during the COVID pandemic.

Summary of Work: Teaching was delivered via webinars but a lack of familiarity with streaming software hindered lecturers, impacting student satisfaction. We organised ad-hoc tutorials helping lecturers become more proficient and allowing them to ask how to adapt their lessons to a virtual format. We uploaded recordings of the webinars for later viewing to allow for asynchronous learning. Simulation and experiential learning is of great value in training for medical emergencies, however this required large spaces in order to socially distance. Our solution utilised a consumer grade laptop and an Oculus Rift Virtual Reality (VR) headset along with pre-made acute medical scenarios. A student would enact the scenario, with the others in a group observing via a projector. This allowed for passive experiential learning as well as a group debrief while COVID-secure. COVID-19 restrictions made conventional clinical skills sessions impractical. Utilising blended learning, we conducted live webinars to stream theoretical concepts around NG Tube placement before switching to small groups to allow students to practice NG Tube placement with a mannequin in person. Students highlighted short term timetable changes as well as redeployment to different wards made them feel less integrated overall. We implemented regular meetings with student representatives as well as with departmental leads and junior doctors to highlight areas for improvement earlier. This was aided by an online anonymous feedback form.

Summary of Results: Feedback from students was positive, noting that having a single point of contact for all issues was useful and greater transparency helped mitigate uncertainty regarding sign-offs. Students strongly recommended VR for future use.

Discussion and Conclusions: By optimising the use of online learning and focusing on improving communication, we were able to have a positive impact on the student experience while providing new ways of achieving established learning goals.

Take-home Messages: Adjusting teaching methods is challenging and made easier with close collaboration with students.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT4  Introduction of a consistent clinical tutor in undergraduate clinical placement during COVID-19 pandemic: A qualitative survey among students and tutors (8451)

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ABSTRACT:
Background: A consistent clinical tutor has been used to lessen the impact on undergraduate medical education during the coronavirus pandemic. In lieu of formal patient bedside teaching, the tutor replicated clinical experience through the use of videos, case based discussions, tutorials and simulation sessions. Over a short period, the clinical tutor can personalise teaching, maximise learning opportunities, promote students self-directed learning and provide continuity. This not only develops rapport between student and teacher but also provided easily accessible educational and pastoral support. This new format was also aimed to foster junior doctors role as effective clinical teachers and promote future interest in medical education. The response to this new role among students and tutors was evaluated qualitatively through the use of a questionnaire.

Summary of Work:
- Clinical Tutor introduced in 4th year clinical placement in medical paediatrics
- Junior doctor assigned to group of 4-5 students during their placement with expectation to meet daily throughout week
- Questionnaire circulated to all students and tutors (anonymously) evaluating this near peer teaching programme

Summary of Results:
- 50 out of 60 questionnaires returned (83%)
- 98% ranked teaching as either good, very good or excellent
- 98% students preferred a consistent clinical tutor
- All junior doctors enjoyed being clinical tutor with majority (73%) preferring this arrangement as opposed to previous intermittent teaching sessions
- Positive aspects include greater interactivity, continuity, development of rapport and ability to tailor teaching
- Conflicting clinical duties was a common challenge among tutors

Discussion and Conclusions:
Although initial qualitative results are promising and adds to the growing reports evaluating the benefits of near peer teaching programmes in medical education, only a small number of students and tutors have been involved. Furthermore, the implementation of a consistent clinical tutor may not be practical in certain clinical placements due to conflicting clinical duties. However, this is certainly a strategy that may be put in place during and after the coronavirus pandemic to minimise disruptions and improve clinical teaching in undergraduate medical education.

Take-home Messages:
- Overwhelming positive response to the introduction of a clinical tutor from both students and tutors
- Potential strategy to enhance undergraduate teaching in clinical placements especially during the coronavirus pandemic
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT5  Curriculum for Health Professions Students (9525)

AUTHOR(S):
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ABSTRACT:
Background: During the spring of 2020, COVID-19 resulted in the disruption of the delivery of health care services across settings. Consequently, clinical workplace-based learning for students in health sciences faculties at a Canadian university was temporarily suspended to allow programs and health system partners to adjust and prepare for anticipated demands of the evolving pandemic. As health sciences programs prepared to reintegrate clinical learners into the practice environment, faculty recognized the need to develop resources to prepare students for a safe re-entry and to provide important knowledge regarding COVID-19.

Summary of Work: A group of faculty members representing each of the health sciences programs collaborated on the development of an online curriculum intended to deliver key foundational knowledge to prepare students to resume placements in the pandemic environment. Given the urgent need for this curriculum, the goal was to curate existing resources while ensuring that content remained relevant and engaging. The resulting curriculum included 7 core modules including Infection Prevention and Control, Professional and Safety Obligations, Exposure and Follow-up Care; Mental Health and Well-Being; Privacy, Security and Confidentiality in Virtual Care; Equity, Diversity and Inclusivity during COVID-19; and University Policies. Programs also had the option of creating additional modules to meet profession-specific needs.

Summary of Results: Refinement and evaluation of the curriculum is ongoing. To-date, learner feedback has been positive in nature, with preliminary results suggesting that students found the content to be appropriate and relevant.

Discussion and Conclusions: The development of the COVID Curriculum was integral to ensuring that health professions learners were equipped with knowledge, allowing them to practice safely during the pandemic. The development of the COVID-19 Curriculum was a unique opportunity for faculty from across health professions programs to collaborate on the development of pandemic related learning. In addition to ensuring that learners were well prepared to practice safely, this has highlighted a new collaborative model of working together in the education of health professions students.

Take-home Messages: The COVID-19 Curriculum was developed to prepare learners with foundational knowledge to practice safely during the pandemic. Developed by a multi-professional group of faculty, this has created a new model with which to approach future education of health professions students.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT6 Implementation of different teaching methods for providing practical skills before and during COVID-19 pandemic - a prospective cohort study (8987)

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ABSTRACT:
Background: Due to the current heavy burden on healthcare systems around the world, there are also major implications for practical skills training within the undergraduate medical education. The present study focuses on the implementation and evaluation of different teaching methods (peer-assisted learning (PAL) versus video-based learning (VBL)) for surgical practical skills in the undergraduate curriculum before and during the COVID-19 pandemic.

Summary of Work: A total of 86 students in their third year of medical training were included in the prospective cohort study. Within the control group (n = 40), the familiar PAL approach was adopted. VBL was conducted in the intervention group (n = 46). The corresponding video material was created in accordance with the so-called concept of nodal point operation primer, that highlights the essential key steps of a surgical procedure. Data collection was performed with the help of an online questionnaire evaluation. Primary endpoint was the participants’ subjective assessment of the two different teaching methods.

Summary of Results: Despite the fact that both teaching methods were basically rated well, significant differences between the two study groups occurred. The statement I can recommend the learning method to others was in the median rated as fully applies in the PAL group and as applies in the VBL group (p < 0.001). Positive ratings also referred to adequate preparation for end-of-semester examination. In the PAL group, the statement I feel adequately prepared for the OSCE exam was assessed with a median rate of applies, in the VBL group with rather applies (p < 0.001).

Discussion and Conclusions: The attention and transition to online educational concepts seems to be unavoidable due to present contact restrictions and required hygiene measures. As a consequence, existing teaching methods can be further developed. The goal should not be to replace established face-to-face teaching by online concepts. But they can be usefully supplemented through potential advantages of VBL.

Take-home Messages: Structured VBL based on the concept of nodal point operation primer is a well-accepted teaching method for surgical practical skills training, especially under pandemic conditions.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT7 Education In Isolation: Teaching Clinical Skills During The Covid-19 Pandemic (8948)

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ABSTRACT:
Background: The COVID-19 pandemic has led to changes in the delivery of medical education across the globe. Medical students have seen a large part of their in-person learning replaced by online teaching, and efforts to replicate patient-clinician interactions have proven difficult. Recent COVID-19 guidelines have precluded students from their first clinical learning opportunity which normally takes place during their Reproductive, Psychiatry & Paediatrics module.

Summary of Work: We developed peer assisted educational content that closely resembled previous clinical exposure.

Summary of Results: An educational video in which a doctor performs a head-to-toe examination of a newborn baby was developed. This was edited with a voiceover explaining the steps of the examination with an emphasis on what is necessary for student success at this stage of their medical education. Important moments of this examination were accompanied by pauses and questions to consolidate key concepts. A short questionnaire was designed to assess students confidence and knowledge regarding their ability to complete a neonatal examination both prior to and after watching the video, which can be used as a measure to assess the effectiveness.

Discussion and Conclusions: While there is no true substitute for in-person clinical experiences, the video has resulted in a number of benefits for the students affected. These include the ability to work at their own pace, review the examination numerous times, and greater preparedness for their future clinical placement. Finally, the formative assessments allowed students to discover, and rectify, any gaps in their learning.

Take-home Messages: The COVID-19 pandemic has highlighted the importance of innovation within many spheres, including medical education. Adaptations to medical student education are necessary to ensure the same standard of clinical education as in previous years. Students and educators who have experienced the impact of the COVID-19 pandemic on medical education are in a unique position to develop a curriculum that overcomes the associated challenges. We believe that this educational resource will outlive the pandemic from which it originated and will be utilised as a learning and revision tool by students in the years to come.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT8 A Novel Online Teaching Programme to Improve Medical Students Confidence in Oncology in the Time of COVID-19 (9209)

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ABSTRACT:
Background: COVID-19 restrictions made it impossible to conduct bedside teaching in the oncology department at UCH beyond November 2020. This left UCL medical students without the opportunity to assess cancer patients and learn about key oncological presentations.

Summary of Work: To address this challenge, we rapidly developed a programme of online oncology teaching consisting of weekly small group sessions of 3-6 5th-year medical students led by a junior doctor tutor, conducted via video-conference. To recreate the bedside environment, the students work through real clinical scenarios, individually or in pairs. With the tutor simulating the role of the patient, each student takes a history, then talks through their approach to examination, investigation, diagnosis and management. A supporting slide-deck allows the tutor to share images and results as the students ask for them. To assess efficacy, we survey students before and after teaching, with 4 key outcome measures: 1) Confidence in assessing an oncology patient (primary outcome) 2) Perception of online teaching as a useful alternative to in-person teaching 3) Perceived engagement 4) Perceived ability to ask questions

Summary of Results: In the first 2 months of teaching (November-December 2020) 32 students have been taught with overwhelmingly positive feedback. After teaching: 1) 70% of students would feel confident to assess an oncology patient (13% before) 2) 71% of students felt that online teaching was a useful substitute for in-person teaching (42% before) 3) 100% of students felt engaged 4) 95% of students felt able to ask questions

Discussion and Conclusions: This novel teaching programme has shown successful results in all outcomes, including its primary aim of increasing students confidence to assess cancer patients. This is early data with a limited sample size and duration, but we demonstrate a clear proof of principle and we will continue to assess and improve our methodology of this ongoing programme. While this teaching was specific to oncology, the principles are transferrable to online-teaching in any specialty.

Take-home Messages: We demonstrate a reproducible format of case-based online teaching which is engaging, significantly increases students clinical confidence and provides a valuable substitute for in-person teaching in the context of COVID-19.
ABSTRACT:
Background: COVID-19 pandemic has affected delivery of face-to-face medical teaching. Rheumatology outpatient clinics have mostly become virtual preventing medical students from seeing patients in person. Students are deprived of the opportunities to take rheumatology history, examining patients and seeing rheumatologic signs. New adaptations are made to ensure equitability and students still receive the teaching in line with their learning curriculum and help them prepare for examinations.

Summary of Work: 1) To adapt bedside teaching in the wards to simulated teaching in the classroom using trained simulated patients. We train our teaching colleagues as simulated or standardized patients (SPs) and write up fictitious patient histories which simulate common rheumatologic presentations. We train the SPs to give an accurate history and to simulate pains in different joints (pain at specific joints in rheumatoid arthritis) on examinations. For clinical presentations not easily simulated, we use photographs of the relevant signs. This method is used for formative assessments and summative assessments. 2) To create simulation teaching of patient journeys in Objective Structured Clinical Examination (OSCE) format known as Clinically Observed Medical Education Tutorials (COMET) (Nair et al., 2001). COMET comprises 3 OSCE-style stations with a tutor each where the students perform tasks based on a patient's clinical problem (e.g. acute hot swollen joint). The first station is initial A-to-E assessment of the patient (using a simulator), second station is investigations and interpretations of lab results and third station - management (including prescribing medications) and communication skills.

Summary of Results: The overall feedback from students is very positive. We use Likert scale to assess confidence level before and after the teaching session, and pre-session and post-session multiple choice questions to assess learning and knowledge gained.

Discussion and Conclusions: While simulated teaching cannot replace real-life encounters with patients, students do enjoy these sessions as they get to experience a large variety of rheumatologic cases and practice their clinical skills which at times are limited with real patients due to reluctance and pain of the patients.

Take-home Messages: Seeing patients in clinics cannot replace simulated teaching. However, being able to practice history-taking and examination in a simulated environment helps students refine these skills before going to clinics.
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ABSTRACT:
Background: Due to the COVID-19 pandemic, medical student placement required adaptation. Within rheumatology, this was a challenge due to it being a primarily outpatient speciality with limited outpatient clinic slots due to COVID related changes and social distancing regulations.
Summary of Work: A four-week teaching programme for students on musculoskeletal (MSK) placement was implemented in August 2020. In total, 24 students were on MSK placement each block. Teaching initially included weekly one-hour tutorials with 8 students based on simulated clinic scenarios covering MSK history taking, hand examination, GALS screen and an overview. Feedback was collected using questionnaires following each four-week placement. Teaching methods were adapted over 5 placement blocks using PDSA and quality improvement methodology enabling identification of areas for improvement and targeted changes.
Summary of Results: 116 students attended placement from August 2020 to December 2020 with 91 providing feedback. Written feedback from the first cohort highlighted the need for more teaching to adequately cover their learning objectives. In the second block, weekly remote lectures on specific rheumatological subjects were added to the curriculum. Written feedback from the first two cohorts highlighted concerns at not being able to see and examine real-life patients. In the third block, in-person bedside teaching was implemented and facilitated by a teaching fellow who found and consented appropriate patients. Following implementation of additional teaching initiatives, subsequent feedback was used to adapt and improve teaching materials. Based on changes made improvement was seen in relevance of the teaching in addressing learning outcomes, perceived confidence in rheumatological knowledge and examinations and overall placement satisfaction.
Discussion and Conclusions: Through PDSA methodology and regular adaptation, implementation of rheumatology placement was possible despite COVID-19 limitations. Addition of virtual lectures ensured broader learning outcomes were covered. Feedback highlighted the need for patient interaction and bedside teaching enabled this. Barriers to teaching included limited group size, repetition of sessions and limited inpatients with rheumatological signs.
Take-home Messages: Flexibility and adaptation of teaching initiatives is imperative within outpatient specialities given pandemic restrictions - Constant review of teaching initiatives and feedback from students is required to guide their learning and ensure learning outcomes are met - Virtual platforms can facilitate lecture-based teaching.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT11 Virtual auscultation course for medical students via video chat in times of COVID-19 (7757)

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ABSTRACT:

Background: Auscultation skills are among the basic techniques to be learned in medical school. Such skills are achieved through supervised examination of patients often supported by simulator-based learning. The emergence of COVID-19 has disrupted and continues to hinder hands-on on-site medical training on a global scale. Therefore, there was urgent need for alternative training methods.

Summary of Work: A virtual auscultation course was established during contact restrictions due to COVID-19 at the Medical Faculty of the Heinrich-Heine-University Düsseldorf. The interactive case-based online seminar was designed to improve listening techniques, description and interpretation of auscultation findings in an off-site context. Clinical cases with pre-recorded common cardiac auscultation sounds and additional case-based diagnostics were presented and discussed.

Summary of Results: The peer-teaching course with up to seven participants each (total number n= 72) was offered 13 times during summer term. The participants were asked to evaluate the course using a six-level Likert scale (best score=1). The media used was considered appropriate (MV=1,2, SD=0,5, n=63). Participants assessed their recognition of auscultation findings after completion of the course as good (MV=1,7; SD=0,7, n=63) and indicated a high level of satisfaction (MV=1.2; SD=0.5, n=64). Evaluation among 26 participants of an advanced on-site course showed that virtual teaching was considered useful outside a pandemic situation (MV=1.7; SD=0.8; n=24).

Discussion and Conclusions: Strengths of the virtual teaching concept are the possible scalability, the independence of location and time and the possible curricular anchoring in preparation for cardiological bedside teaching in the sense of blended learning. Limitations are technical requirements, lack of patient contact and unavailability of stethoscope practice. The course was met with a high level of demand, acceptance and satisfaction demonstrating that virtual courses can be an alternative for small group lessons in the absence of classroom teaching.

Take-home Messages: Virtual, interactive teaching in small groups, in which practical skills such as auscultation are trained can be an enhancement to established forms of teaching in the sense of blended learning even after contact restrictions are lifted.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT12 Teaching and healing during the COVID-19 Pandemic: A mutually supportive relationship between patient educators and medical students in dermatology (8956)

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ABSTRACT:
Background: COVID-19 lockdown and its impact on mental health is a significant public health concern (1). Healing is the personal experience of the transcendence of suffering, underpinned by inter-personal human connection (2). Learning and emotion are inextricably linked (3). Dermatology patients can experience significant psycho-social morbidity (4) and medical students are taught to focus on patient impact and outcomes. Patient educators in dermatology provide unique insight to their disease and are a valuable training resource.

Summary of Work: COVID-19 safety measures led to re-structuring of face-to-face clinical dermatology teaching, using patient educators for 4th year medical students at our medical school. Virtual Education Clinics (VECs) were created for small group teaching sessions on a twice weekly basis. This involved video or phone consultations with patient educators (n=25), supplemented by clinical photographs. Each student had an opportunity to take a focused history, complete formative assessments and receive educator and facilitator (Consultant or teaching fellow) feedback during group discussions. The VEC was designed according to the learning theory of social constructivism and situated learning with communities of practice where learning is embedded within patient stories and peripheral participation (5).

Summary of Results: Along with clinical skills and knowledge students gained insight into patients impact of skin disease and COVID-19. Group interaction promoted a sense of community. Students (n=80) perceived tele-dermatology as a useful learning tool and became familiar with virtual consultation skills. Educators felt the weekly interactions in VECs helped cope with loneliness during lockdown, share their feelings of isolation or bereavement during sessions and had opportunities to discuss any new skin related concerns. Patients found it rewarding to contribute towards medical training and felt they were giving back to the NHS. Limitations of VECs included technology related issues and lack of face-to-face experience.

Discussion and Conclusions: VECs served as social support networks, engaged patient educators and students through emotion and collaborative socio-cognitive construction (6), and enabled psychological healing during teaching.

Take-home Messages: VECs helped foster a mutually supportive relationship between patient educators and medical students, with tele-dermatology aiding the emotional and educational needs of patients and students in the COVID-19 pandemic.
ABSTRACT:

Background: As COVID-19 impacts medical education worldwide, a lack of patient contact and clinical exposure creates significant concern for medical students. During a three-week medical education elective in January/February 2021, five final year clinical medical students developed a project aiming to address these concerns, supported by two academic staff. Our aim was to provide pre-clinical medical students studying Obstetrics and Gynaecology with learning materials that would prepare them for entry into clinical settings in the future.

Summary of Work: Using the principles of design-based thinking, collaborative brainstorming techniques by the final year students identified core problems likely affecting pre-clinical medical students within our university. Following identification and discussion of these problems, a survey was developed and administered to pre-clinical medical students. Using their feedback, we aimed to develop and provide material that would be beneficial to their progress in the absence of formal clinical placement.

Summary of Results: Core problems included lack of patient exposure, stress working at home, and lack of regular feedback. A 14-item questionnaire was developed and tested among a small group. Once administered, 47 students responded (17%). In terms of learning how to take a history, sample history vignettes were considered most beneficial to learning by 87.4% of respondents. Written summaries were also highly valued by 68.9% of students. A majority (75% of respondents) agreed that summaries on clinical examinations are beneficial to their learning, and 43.5% students cited these as their preferred resource to build confidence in this area. Based on these results, we compiled a guidebook for history taking and clinical examination in Obstetrics and Gynaecology, which contains exam-focussed sample history vignettes. We also recorded sample history taking and presentations as podcasts to be distributed to students.

Discussion and Conclusions: Using feedback from pre-clinical students on their experience of learning in Obstetrics and Gynaecology thus far, we compiled a set of learning materials tailored towards their needs in order to help them feel more confident and prepared for future clinical placement.

Take-home Messages: Ask the students what they need!
ABSTRACT:

Background: The global outbreak of a highly transmissible Severe Acute Respiratory Syndrome-Coronavirus 2 has resulted in the COVID19 pandemic. This has led to unprecedented actions by governments that are significantly impacting the delivery of medical education. Cancellation of examinations, online tutorials, and limited assistantships have negatively impacted the preparedness of medical students and impaired their transition to the workforce (Choi et al., 2020).

Summary of Work: We evaluated cardiology placement timetables to compare differences in the learning opportunities before and during the pandemic at the Golden Jubilee National Hospital, Glasgow, UK. Student feedback from before the pandemic was compared to the feedback received since the start of the pandemic retrospectively. This was collected using a four-point Likert scale converted to a score of -2 to 2.

Summary of Results: The block duration was shortened from 12.5 to 10 working days, resulting in the loss of in person tutorial time. Clinics have largely been converted to a virtual environment, thereby reducing opportunities for student participation. There has been a reduction in bedside tutorials and theatre opportunities. Current students have less private study time allocated but have increased exposure to ward rounds. Interestingly, the overall placement satisfaction remains high, with improved perceptions towards the quality of teaching. However, learning (1.85 to 1.75) and personal support (1.83 to 1.63) were areas with reduced satisfaction.

Discussion and Conclusions: The feedback on learning and support appears reflect a wider trend of students having heightened anxiety towards both their education and their safety. Choi et al. (2020) has revealed that over 50% of medical students felt less well-prepared for to start in the workforce. Increasing contact time with dedicated teaching fellows, signposting to stress-support networks, and reserving safe spaces for recuperation during placement are recommendations offered. Additionally, virtual Schwartz rounds could prove useful in supporting student learning and wellbeing.

Take-home Messages: Despite its challenges, it is possible to deliver good quality teaching during the COVID-19 pandemic. We need to remain vigilant on the expanded requirements for learning and personal support, and should strive to address these within the student cohort.
#EPOD-CCT: Clinical Teaching & COVID-19

#EPOD-CCT15 Simulation with inexpensive easily available material to teach clinical skill to undergraduate students during COVID19 Pandemic - Teddy Bear Simulation (7652)

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ABSTRACT:
Background: The pandemic changed the way we teach and train our students in medicine. It has been specially challenging for developing countries where simulated teaching and training is not a norm. Teaching practical skills was a daunting task with no patients to examine due to lockdowns and the risk of transmission of infection. The faculty of ENT Department planned to train the undergraduate students clinical skills on a hybrid simulator using inexpensive and readily available materials, a stuffed toy, a glass and balloon.

Summary of Work: The skills of otoscopy and tuning fork tests were taught to the students using trivial simulation technique. For tuning fork test a stuffed teddy was used and for otoscopy a glass. A resident acted like a patient responding to the questions asked during clinical examination by the students. Feedback was taken from the students about the new mode of training, and their performance assessed in the stations in which the skills were tested during their Professional examination.

Summary of Results: 28/84 (33.33%) students gave feedback on the training. 18/28 (64.3%) students liked the training. For tuning fork tests -22/28 (78.6%) were confident to transfer the skill in real life scenario, while for otoscopy 11/28 (39.3%) were confident to transfer the skill in real life scenario. Out of 10, the average rating for the teddy bear simulation was 7.3±1.7 and otoscopy simulation 5.5±2.4. Performance in the Professional examination: Difficulty-indexOtoscopy-Station 23/84 = 0.27 Difficulty-indexTuning-Fork-Station 02/84 = 0.02 High score/performance index for tuning fork test 79/84 = 94% High score/performance index for otoscopy 37/84 = 44%

Discussion and Conclusions: The challenges presented by the coronavirus pandemic have forced medical educators to search for strategies to continue teaching and learning. Health care training institutions in developing countries lack the financial means to purchase high fidelity patient simulators. A hybrid simulation approach has the potential to provide them with limited budgets a more affordable simulation option. Our study results reflect that adapting to challenges and improvising methods using available resources can effectively train medical students the required clinical skills effectively.

Take-home Messages: Difficult times call for innovative measures. Inexpensive simple material can be used to create simulators to train students.
#EPOD-CCT16 The impact of a formal structured virtual specialty teaching programme on learning for medical students during COVID-19 (9017)

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**ABSTRACT:**

**Background:** During the COVID-19 pandemic, many university courses are relying on virtual teaching and medicine is no different. COVID-19 may have a considerable effect on medical education, with many students having restricted access to the clinical environment during this time [1]. These restrictions will have a greater impact on medical student access to some specialties and it is therefore important to explore the benefits of alternative teaching methods [1]. Virtual teaching has been shown to increase student engagement, interactivity and allows ease of access and awareness of specialties [2,3].

**Summary of Work:** A formal structured teaching programme for medical students consisting of virtual seminars delivered by junior doctors was created. Pre- and post-session questionnaires were provided to medical students to assess the impact of these seminars.

**Summary of Results:** Preliminary data shows that 78% of students felt that their ability to achieve their learning outcomes has been impacted by the COVID-19 pandemic. Of these students, 93% felt that this impact was negative or very negative. Before the session, 61% of the students felt unconfident or very unconfident about their knowledge in topic 1 and 72% of students felt unconfident or very unconfident in managing a patient with this condition. Following the seminar, 92% and 50% of students respectively felt confident or very confident. 17% of students felt unconfident or very unconfident in knowledge of condition 2, with most students (56%) feeling neutral, and 39% of students felt unconfident or very unconfident about management. After the seminar 100% of students felt confident or very confident. Pre- and post-session MCQs showed an improvement in knowledge of 71% and 15% for condition 1 and 22% and 11% for condition 2.

**Discussion and Conclusions:** This programme provides medical students with a structured and systematic approach for working through learning objectives and is a supplement to their current clinical learning. Continuation of these seminars may be beneficial to increase the confidence of medical students within the clinical environment, therefore potentially creating more proficient junior doctors.

#EPOD-SC: Subjects in the Curriculum

#EPOD-SC1 Difficulties and innovations in teaching anatomy in nursing (8790)

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ABSTRACT:
Background: A deep understanding of anatomy is extremely important for nurses, but is difficult to instill in nursing students in a limited time; this study aimed to obtain suggestions for alleviating this difficulty.
Summary of Work: A free-text questionnaire survey about difficulties and innovations in teaching anatomy in nursing was conducted among nursing faculty at Japanese universities. We invited 280 nursing universities to participate and to provide academic nursing faculty with information about the research; of these, 20 participated. A thematic analysis was conducted on free-text comments.
Summary of Results: There were four main categories of difficulties regarding teaching anatomy: lack of sufficient teaching time, terms unfamiliar to first-year students, differences in students readiness, difficulties integrating related knowledge, and difficulties relating knowledge to clinical cases. Five main categories related to educational ideas were generated: relating knowledge to clinical cases, relating knowledge to nursing skills/nursing care, observation of daily living activities from an anatomical perspective, draw a picture of an organ, and multi-professional collaboration and education. The benefits of multidisciplinary collaboration were shown as cover a wide range of knowledge and enables examination educational methods and content from multiple perspectives. On the contrary, disadvantages of multidisciplinary collaboration were need for adequate coordination and content is so broad that the learning points are not clear.
Discussion and Conclusions: Despite some difficulties in teaching anatomy, participants examine and implement effective educational methods on their own. Although lack of sufficient teaching time and terms unfamiliar to first-year students were shown as difficulties in teaching anatomy, possible significant changes are limited because the curriculum is defined. A system of self-learning is needed, with support tailored to each students readiness to actively learn. Although multidisciplinary collaboration generated some innovations in educational practices, appropriate facilities are needed for those universities still searching for effective ways to collaborate. It was also suggested that further collaboration with clinical practice would promote integration of knowledge and nursing practice.
Take-home Messages: Tools are needed: 1. to promote integration of anatomical knowledge with clinical nursing situations, 2. to support the individual optimisation of anatomy education, and 3. to facilitate smooth, effective collaboration among anatomy instructors.
ABSTRACT:
Background: The Covid-19 pandemic had led to an immediate switch to online teaching. Despite all the efforts made to teach online, did student learning happen in Anatomy? The present questionnaire-based study attempts to explore the same and utilize the feedback gained in improving the effectiveness of teaching-learning Anatomy online.

Summary of Work: This cross-sectional study recruited 250 first-year undergraduate medical students who attended Anatomy online classes during the pandemic via Microsoft teams. A semi-structured questionnaire was designed to seek student responses on Anatomy teaching-learning online. It included: demographic details, Anatomy-online learning (mode/ hours of interaction, facilitating/ hindering factors, practical approach, and assessment). To meet the practical needs, dissection videos were recorded and streamed during the online sessions. The sessions were delivered in small groups, i.e., 60 students, and moderated by a faculty. The effectiveness of this attempt was assessed using student feedback.

Summary of Results: Out of 250 students, 169 (80 males and 89 females) responded. Among the 169 respondents, 160 were at home during the study duration (May-September 2020), while the remaining nine stayed back in hostels. The student responses were grouped into the following five themes based on factor analysis.

• Utilization of an online platform for learning
• Interaction and learner engagement
• Facilitating and hindering factors for learning Anatomy online
• Feedback on the current pattern of teaching
• Preferred learning strategies Feedback on practical sessions: The recorded dissection videos helped, as opined by the students. Interestingly the videos received more views just before the online end block exams.

Discussion and Conclusions: The study concludes by stating that the online teaching content in Anatomy should be tailored to suit the students learning needs. Effective inter-faculty academic collaborations and integration of human and technical resources are needed. These efforts would promote effective teaching-learning during these difficult times.

Take-home Messages: • Anatomy teaching online can be made more engaging if imparted in a collaborative manner, i.e., theory and practical information imparted together. • The online teaching content should be tailored to suit the students learning needs • Inter-faculty academic collaborations and integration of human and technical resources are a must to make the sessions effective
**ABSTRACT:**

**Background:** Developing effective study skills in the early years of medical school is crucial to a student's subsequent success. Human anatomy is one of the first courses in medicine. It is not clear what kind of materials can help students perform better on anatomy exams by helping them study more effectively. The study objective was to examine effects of multiple terminology tests and e-learning tools on the performance of anatomy exam scores.

**Summary of Work:** Data were collected from 308 medical students who took a human anatomy course in 2018-2020. We analyzed the following two associations in relation to end-of-semester anatomy exam scores: 1) average scores on the anatomy terminology mini-tests (hereafter referred to as terminology) administered multiple times during the semester, and 2) number of questions answered in the eReview (Elsevier Japan), which consists mainly of multiple-choice questions (hereafter referred to as MCQ). A linear regression model was fit to examine the association between terminology, MCQ, and end-of-semester anatomy exam scores.

**Summary of Results:** Significant association was detected between score of terminology and the anatomy exam scores. Increase in score of terminology by one point was associated with 1.00 point increase in the anatomy exam scores (95% CI 0.89, 1.11; P < 0.01), although some students failed in the anatomy exam even though their score of terminology were high. Significant association was also detected between MCQ and the anatomy exam. Increase in the number of questions answered in the MCQ by 100 was associated with 0.17-point increase in the anatomy exam scores (95% CI 0.07, 0.27; P < 0.01).

**Discussion and Conclusions:** These results suggest that higher scores on terminology might be an indicator of high scores on the anatomy exam scores. Self-study with MCQs improved the performance of the students in the written exam, even with different types of questions. The use of optional e-learning tools may help students to learn more efficiently.

**Take-home Messages:** It is important to develop the habit of continuous study at an early stage. Developing the habit of continuous study may be the key to improving students performance, even though the type of question is different.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC4 A Student-Led Basic Science Introductory Resource for Graduate Entry Medical Students (8647)

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ABSTRACT:
Background: Graduate Entry Medicine courses are a key pathway of undergraduate medical training in the UK. These courses place unique demands on students compared to Standard Entry, including a higher expectation of basic science knowledge. This expectation creates an inequality between students based on previous study. This student-led, staff-supported project sought to identify gaps in basic science knowledge among Graduate Entry medical students and create an online, video-based resource for subsequent years to use to level this inequality.

Summary of Work: Weaknesses in basic science knowledge were identified through a survey of one year of Graduate Entry Medicine students at one university. Using these results, we developed a five-chapter set of videos based around the animal cell: Chemistry of Life, Nucleus and Endoplasmic Reticulum, Plasma Membrane, Mitochondria and Cytoskeleton, and Cell Cycle. 51 videos were created ranging between 2-23 minutes (median=6.5). A survey of the subsequent year's basic science knowledge before using the resource was compared with feedback afterward to quantify learning outcomes.

Summary of Results: Our first survey of Graduate Entry Medicine students found that self-reported confidence in the basic sciences on a 1-10 scale varied considerably (n=16, median=6, range=8), with 12 students agreeing that an online resource would be very useful in levelling the prior knowledge inequality. After watching the videos, responses from students demonstrated self-reported improvements in understanding of the material and its relevance to medicine across almost all areas (1-5 scale, 1=not at all confident and 5=extremely confident). There were significant improvements in the latter aspect for the Chemistry of Life (n=11, mean score change from 3.64 to 4.36, p=0.037 via two-tail paired t-test) and the Mitochondria and Cytoskeleton chapters (n=7, change from 3.86 to 4.85, p=0.047). The mean response for satisfaction (identical scoring system) was 4.43 (n=12, s.d=0.70).

Discussion and Conclusions: Across a two-year cohort of Graduate Entry medical students at one university, we identified an inequality in basic science knowledge and developed an effective video-based resource to address this.

Take-home Messages: There is an often-unaccounted-for gap in basic science knowledge among Graduate Entry medical students which is unequally distributed given previous study. Video-based resources such as ours may be an effective way to counter this problem.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC5 Defining Clinical Skills in the Digital Age: A Comparison between the Views of Junior and Senior Doctors in Singapore (9112)

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ABSTRACT:
Background: While many studies have analysed the use of technology in medical education, few have examined the skills that doctors need in clinical care in the context of rapid digital transformations of healthcare, particularly in an Asian context. This study addresses this gap by identifying the skills that are important and relevant to doctors in Singapore.

Summary of Work: Drawing on findings from interviews with 54 doctors from various public healthcare institutions in Singapore, this research compares the views of 30 junior and 24 senior doctors across different specialties on the type of skills needed in clinical practice in light of rapid technological advances. Purposive sampling was used to recruit doctors with different years of work experience. Among the junior doctors, their years of clinical practice ranged from two months to nine years whereas all the senior doctors had over 10 years of experience. Qualitative content analysis was used to interpret the data.

Summary of Results: Overall, regardless of level of seniority, the doctors opined that basic clinical skills, particularly physical examination, history taking and communication skills are still important if not more important in today's digital age. They also highlighted several new skills that doctors need to have in the digital age. These include the ability to analyse and synthesise a wealth of information found online, and to equip oneself with knowledge of evidence-based medicine for accurate diagnoses and patient management. While the senior doctors reiterated the importance of instilling skills such as interprofessional collaboration, upholding professionalism online, and the ability to examine patients holistically, the junior doctors, especially those with overseas exposure, were eager to learn how new forms of technology such as Artificial Intelligence, big data, machine learning, infrared technology, portable ultrasounds and chatbots could be optimized for clinical care.

Discussion and Conclusions: The results underscore the importance of re-emphasising basic skills in the era of new technology without losing sight of medicines' humanistic aspects, which could be overlooked or taken-for-granted with the advent of sophisticated technological devices and procedures.

Take-home Messages: Doctors should practise the art of medicine based on science for the benefit of patients.
ABSTRACT:
Background: It is frequently suggested that the ethics training of medical students is essentially proselytizing and parochial. This approach is viewed as myopic, as it tends to deprive students of opportunities to reflect on, analyze and craft solutions to real world ethical problems. We feel the need to restructure the learning landscapes for medical ethics in medical education, with the aim of providing foundations for making logically sound, ethical decisions.
Summary of Work: St. Lukes Medical Center College of Medicine in the Philippines developed a desktop elective rotation in medical ethics for postgraduate students (Years 4-5 interns) that aims to fill this gap. We report our experience in designing and implementing Bioethics and Society, a 15-day online elective course offered to interns. To our knowledge, this course is the first of its kind to be offered within a medical education context in our country. The elective seeks to develop students moral compass while targeting 21st-century skills. It is designed to augment students ethical sensitivity. The course offers them the tools and learning environment to help develop varied thinking skills applicable to ethical dilemmas in medicine. The objectives of the elective are: first, to broaden the scope of bioethical inquiry by presenting bioethics as a set of problematic social issues in medicine, encompassing a wide range of disciplines and perspectives; and second, to encourage critical reflections about these issues.
Summary of Results: The curriculum was delivered in four modules (Ethics and Moral Reasoning; Autonomy; Benefit and Harm; Justice). Our interns were provided with a review of the fundamental ethical theories, reinforced by analytical tasks that required them to formulate cogent arguments and ethical reflections using critical, creative and caring thinking.
Discussion and Conclusions: The course was perceived by the medical students to be, generally, positive in terms of its practical use. We suggest that this reformulated approach to teaching medical ethics can support their formal training to become 21st-century physicians.
Take-home Messages: The ethical training of 21st-century physicians necessitates the fostering of critical, creative and caring thinking skills. This method not only honors the caring traditions of medicine but also tries to meet the standards of contemporary medical education.
Creative learning through immersing oneself in scenarios and stepping into others shoes - teaching medical ethics, law, and gender using a situation-based and holistic-focused pedagogical method (9041)

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ABSTRACT:
Background: Using real or simulated situations to illustrate and apply medical ethics, law, and gender theories and incorporating social experience and context are important aspects of medical education.
Summary of Work: We designed a class in medical ethics, law, and gender using 15-minute short films on gender diversity in doctor-patient communication, medical decision-making, and resultant medical disputes. The video clips allowed students to place themselves in those situations before discussing the disputes. Pre- and post-tests consisting of 5-point Likert scales and true-false questions in 6 major themes assessed students knowledge, attitude, and skills in gender diversity and medical decision-making. 90 surveys (out of 126, 71.43%) were collected from 66 men and 24 women.
Summary of Results: In all 6 major themes - 1) definition of gender diversity, 2) legalization of homosexual partners, 3) eligibility of homosexual partners to sign surgical consent forms, 4) procedure for signing consent forms by homosexual partners, 5) signing of DNR forms by homosexual partners, and 6) signing of DNR forms by homosexual health care proxies - students scored better in their post-tests, indicating that using short films leads to better learning. Independent t-tests compared performance between genders and for theme 3, the average score for men (3.76) was higher than women (3.71). Qualitative analysis found that students also learned about gender diversity in legal issues in doctor-patient relationships, that they were concerned about medical litigation, could relate to clinical situations, and inspect from a holistic perspective.
Discussion and Conclusions: Differences in the scores between men and women on certain themes reflect the need to tailor classes in gender diversity separately to students of various genders. Since it was the first of this innovative teaching, the content dealt only with homosexuality and the assessment tool did not ask students to reveal their gender identities. Incorporating scenarios into the teaching of medical ethics, law, and gender not only makes the class more realistic and practical, it also promotes students reflection and consideration for the holistic person, increases learning motivation, and cultivates empathy.
Take-home Messages: Short films may be a good tool to teach about gender diversity in medical ethics and law.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC8  The Effectiveness of Teaching Evidence-Based Medicine to Medical Students: A Systematic Review and Meta-Analysis (8981)

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ABSTRACT:
Background: The exponential rise of fake news alongside unproven remedies within healthcare accentuates the call for evidence-based clinical practice, which stems from Evidence-based Medicine (EBM). Effective EBM teaching methods within undergraduate medical education must therefore be explored to understand which methods are effective to nurture a culture of evidence-based decision making amongst tomorrows doctors.

Summary of Work: A review and meta-analysis of RCTs which assesses the effectiveness of EBM teaching. This seven-study review included undergraduate medical students at any point within their medical education. These participants were subject to any interventions which measured effects on knowledge or skills outcomes. A risk of bias assessment was conducted, and meta-bias was also explored using a funnel plot and a funnel plot with contour lines.

Summary of Results: A pooled estimate of 0.58 (0.15, 1.01 at 95% CI) suggested that existing EBM teaching methods do improve students knowledge of EBM. Numerous limitations were noted, primarily the high heterogeneity ($I^2 = 86.4\%$) which symbolised great cross-study variability. Nevertheless, PBL teaching of EBM had the greatest effect on EBM knowledge demonstrating a standardised mean difference of 1.57 (1.13, 2.01 at 95% CI).

Discussion and Conclusions: This review determined that EBM teaching methods are effective in improving knowledge; with no RCTs reporting on skills. This conclusion is limited by the high heterogeneity, statistical insignificance for three of the seven studies findings and the high risk of bias amongst several studies. The meta-analysis indicates that EBM teaching does improve students knowledge and that there is a low likelihood of meta-bias, demonstrated by the funnel plots. Future RCTs will be critical in expanding the evidence-base for future reviews and allowing for network meta-analyses for greater comparative assessment.

Take-home Messages: The most effective methods of teaching EBM are not entirely clear. This review reinforces that EBM teaching is effective in developing related knowledge. However, the current evidence-base is limited and does not exhibit any longevity in outcomes nor any robust assessment of skills. This should not discount the value of EBM teaching to medical students. Rather, the emphasis should shift towards synthesis of high-quality RCTs which centre around assessing long-term educational effects such as skills, practical application or behaviour.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC9  Medical students’ perceptions on medical humanities learning and its subsequent effects in the clinical training in Taiwan (8382)

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ABSTRACT:
Background: Medical education has emphasized the importance of integrating medical humanities training into the curriculum to benefit medical students practice in Taiwan. However, there is a lack of how the students perceive the training courses and empirical needs on subsequent effects of the training. We explored their perceptions of the rationales for medical humanities learning and its subsequent effects in the clinical training.

Summary of Work: We qualitatively investigated medical students perceptions and experiences of medical humanities education via 7 focus group interviews. We interviewed 30 Taiwanese medical students who had received medical humanities training from across a range of curricula with different rationales. Thematic analysis was used to analyze the data.

Summary of Results: We identified 5 main themes: (1) authentic experience need, (2) curriculum development need, (3) faculty development need, (4) students perception about medical humanities from courses learnt, and (5) subsequent effects to the treatments. Some of them had sub-themes such students experience on curriculum, students experience on faculty, importance of medical humanities, students perspectives of medical humanities rationales and clinical preparation, which were part of their main themes or the consequence/result of their main themes.

Discussion and Conclusions: We identified that students talked the most about their experience with curriculum and curriculum development need, following by their experience with faculties. It is interestingly noted that they did not talk much about faculty development and often seemed to intentionally mislead the answers to suggestions about curriculum development need. Some even also had negative comments or confusing feelings on the importance or rationales of learning and teaching medical humanities. There were positive subsequent effects of medical humanities on medical students clinical training, and positive experience relating to the curricula and the faculty. However, there were still confuses where students did not fully appreciate the medical humanities courses, their rationales for teaching and learning and how the teachers and curricula impact their clinical practices.

Take-home Messages: There are 5 main themes identified for medical students perceptions on medical humanities learning and its subsequent effects. There are positive subsequent effects of medical humanities learning, but also confuses noted.
#EPOD-SC: Medical Humanities and Ambiguity Tolerance in the Context of COVID-19

## Background:
Ambiguity is inherent within medical practice. Intolerance of ambiguity is associated with reduced psychological wellbeing and burnout in health professionals. We aimed to explore the longitudinal relationship between engagement with the medical humanities and ambiguity tolerance in undergraduate medical students.

## Summary of Work:
The 29-item Tolerance of Ambiguity in Medical Students and Doctors (TAMSAD) scale was used to measure ambiguity tolerance in fourth-year medical students at the University of Exeter Medical School pre- and post-engagement with two compulsory Medical Humanities Special Study Unit weeks: December 2019 (T1 [pre-] and T2 [post-]) and March 2020 (T3 [pre-] and T4 [post-]). The emergence of the COVID-19 pandemic prior to the T3/T4 timepoints created an unintended experiment allowing analysis of ambiguity tolerance within the context of COVID-19.

## Summary of Results:
In total 126 questionnaires were completed (response rate 24.2%). Ambiguity tolerance appeared to increase throughout the fourth year of study (58.47 v 66.94, p = 0.025). The standard deviations at timepoints T3 and T4 (10.4 v 19.2) was greater than at T1 and T2 (4.0 v 7.7) and may be associated with the emergence of the COVID-19 pandemic and subsequent changes to the degree programme.

## Discussion and Conclusions:
Medical student ambiguity tolerance appears to increase throughout the fourth year of study in this one setting within the context of a complex undergraduate medical degree programme and the emergence of the COVID-19 pandemic. It is likely that at the T3 and T4 timepoints the TAMSAD scale is no longer evaluating the interaction between ambiguity tolerance and medical humanities intervention alone, but more complex widespread changes associated with the COVID-19 response. As a result, it is difficult to draw firm conclusions about the relationship between ambiguity tolerance and medical humanities as this intervention cannot easily be isolated from the rapidly changing societal context.

## Take-home Messages:
• Medical student ambiguity tolerance appears to increase throughout the fourth year of the degree programme.
• Future research should be guided by existing conceptual models to explore the relationship, and potential mechanisms of action, between societal factors and medical education interventions such as medical humanities on ambiguity tolerance.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC11 Can a Lifestyle Medicine Education impact the Clinical Confidence of Medical Students? (8246)

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ABSTRACT:
Background: Poor lifestyle underlies various chronic conditions. Patient education is the cornerstone of treatment, and this has led to the development of supplemental lifestyle curriculums, or tracks, in a few medical schools preclinical education. WesternU students in the Lifestyle Medicine (LM) track attend informational and iterative sessions on relevant lifestyle topics such as whole-food plant-based diets and motivational interviewing, as well as lectures by physicians certified in LM.

Summary of Work: In this study, we wish to evaluate the knowledge and confidence of medical students in counseling patients on lifestyle modifications. We aim to compare students enrolled in the LM track with students enrolled in other tracks. Medical students (N = 101) were administered a survey using a 5-point Likert scale. Participants rated their understanding of basic sciences related to LM and their comfort level in counseling patients on making lifestyle modifications.

Summary of Results: LM track students did better (M = 33.23, SD = 7.62) than students in other tracks (M = 37.68, SD = 9.44) (p < 0.02). Scores of the class of 2021 (M = 32.58, SD = 7.36) were significantly different from the class of 2022 (M = 38.83, SD = 9.20) (p < 0.05), indicating increasing levels of confidence over the course of the LM curriculum.

Discussion and Conclusions: Our data supports our hypotheses that LM track students are more informed about chronic diseases and are more confident in their ability to counsel patients on diet, exercise, and stress management. LM education is a promising solution to the increasingly prevalent burden of chronic disease, and early exposure to the concept of LM allows students to feel more knowledgeable and capable of working with patients to improve lifestyle.

Take-home Messages: Our data demonstrates that students, with an early exposure to the concept of lifestyle medicine, feel more knowledgeable and capable of working with patients to improve lifestyle. It may only take a simple, yet impactful, conversation to educate a patient, modify daily habits, and prevent the development of chronic medical conditions. Medical schools need to engage their students in these vital discussions in order to better equip them to treat their patients.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC12 Neurology Charades - A novel approach to teaching hypothesis driven neurological examination to medical students in the Covid-19 era (9772)

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ABSTRACT:
Background: Localizing the lesion responsible for a patient’s symptoms is one of the most stimulating aspects of clinical neurology. Despite this, neurophobia remains prevalent in medical education. Covid-19 has impacted on students exposure to the clinical environment and ability to practice hypothesis driven neurological examination on real patients. Furthermore, the current pandemic has impacted on opportunities for social engagement and interaction within an educational setting. We describe a method of delivering neurological examination teaching which utilizes simulation-based education and serious games in healthcare to create a charades-based interactive card game, which aims to increase student opportunities for repetitive, hands-on practice in the context of Covid-19 and provide an opportunity for an enjoyable method of learning in a safe environment.

Summary of Work: A series of charades flashcards were developed. Each card described typical examination findings in a common neurological disorder (e.g., left middle cerebral artery infarct would include expressive dysphasia, right homonymous hemianopia and right sided weakness). A flipped classroom approach was utilised. Medical students received pre-course learning materials in the form of instructional videos demonstrating neurological examinations and core principles of clinical neuroanatomy. Students then attended a 2-hour face-to-face workshop. Following an opportunity to practice traditional screening neurological examination on each other, students were divided into groups. Using the flashcards, individual students took turns to act out the examination findings listed on their card. After examination by their team mate, a diagnosis was determined. The winning group was the group which deduced the most diagnoses in the shortest time. Strict adherence to Covid-19 mitigating factors was maintained throughout the sessions.

Summary of Results: Preliminary feedback from students demonstrates the approach described is enjoyable and useful in teaching the neurological examination.

Discussion and Conclusions: Charades may be a viable approach to teaching hypothesis driven neurological exam to medical students, particularly in the setting of COVID-19 restrictions. This approach may also be helpful at making the neurological examination less daunting for students and in providing an opportunity to interact and play in a safe manner where remote learning has limited student opportunities for social interaction.

Take-home Messages: Neurology charades may be an effective and enjoyable means of teaching hypothesis driven neurological examination.
ABSTRACT:
Background: The COVID-19 pandemic introduced many challenges to traditional medical education. Historically, Albany Medical College has partnered with The Culinary Institute of America to improve nutrition education and training as part of a service learning opportunity. Previously this involved a weekend-long training in which physiology of taste, basic nutrition education and culinary skills are taught via lectures and live cooking demos. Due to the ongoing pandemic, this training was conducted virtually.
Summary of Work: A pre- and post-training survey was administered to all students in the program to evaluate the impact of changing to a virtual training. This survey assessed anticipated effectiveness, convenience and usefulness of the virtual training, and retention of and engagement with material. It assessed anticipated participation, satisfaction and connection with peers. One month after the training, a follow-up survey was administered. All variables were assessed on a Likert Scale with a space for free-text comments in both surveys.
Summary of Results: There was no statistically significant difference between expectations and reality of the virtual training using t-test analysis of matched data. 30% of participants mentioned convenience as an anticipated benefit of virtual training; however, 26% of participants mentioned convenience as an actualized benefit after the virtual training. 8% of participants mentioned lack of engagement prior to the training and 17% of participants identified lack of engagement after as a possible detriment. 17% of participants identified not interacting with other participants prior to the training and an actualized detriment after.
Discussion and Conclusions: There are many challenges to virtual education. Though convenience is a clear benefit of a virtual curriculum, it may only be a perceived benefit as fewer participants mentioned this after the training. Students consistently identified lack of interaction with peers, aware of limited meaningful human interactions in virtual sessions. More participants identified lack of engagement in the qualitative post-training survey. Future training should aim to improve engagement and peer interaction.
Take-home Messages: 1. Engagement should be an area of focus in virtual learning. 2. Convenience is a known benefit of virtual learning, but may be more important before an event. 3. When considering interaction with peers, virtual learning is an inadequate substitution for in-person learning.
#EPOD-SC14  Tracking Patients’ Frame and Reference Narratively in Occupational Therapy: An Innovative Narrative-Based Training in the Junior Programme (8489)

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ABSTRACT:
Background: Tracking patients’ frame and reference are essential in identifying patients’ need holistically in occupational therapy. This study adopted the Person-Centred Theory proposed by Carl Rogers as the theoretical framework of the junior training programme, which aimed to develop trainees’ communication skills and holistic narrative abilities about patients’ physical, psychological, spiritual and social needs. Through deepening the inexperienced trainees’ competence of holistic narrative and tracking the frame and reference, this narrative-based training was to help enhance the quality of healthcare when conducting occupational therapy consultations.

Summary of Work: A quasi-experimental study was conducted to evaluate the effectiveness of a three-month narrative-based training with three measurements: before (T1), after the training (T2) and six months after (T3) the training. The junior occupational therapists, who worked at a Physical Medicine and Rehabilitation Department in a Teaching Hospital in Northern Taiwan, were purposively enrolled. Measuring with the self-reported Holistic Care Competence Inventory, the training results were reported using the paired t-test analysis.

Summary of Results: Six junior occupational therapists participated in the training. The results indicated a significant change in the holistic narrative ability over time (MD=7.17, SE=1.17, p=.002). It appeared maintenance of the training effect six months after the training (MD=4.00, SE=1.53, p=.047). There were also significant differences in the trainees identifying patients’ physical (p=.003), psychological (p=.031), spiritual (p=.042) and social (p=.004) needs during the occupational therapy consultation.

Discussion and Conclusions: The innovated narrative-based training has successfully supported the growth of the trainees’ abilities to track patients’ frame and reference narratively in occupational therapy. This study provided an evidence-based report on the promising application of the innovating training method in occupational therapy education, and also it purposed the promising learning outcomes of identifying patients needs from a holistic perspective. This study would open an opportunity to enhance occupational therapists’ competence in delivering holistic care. Further cross-disciplinary studies of occupational therapy and clinical education are recommended in future.

Take-home Messages: The innovative narrative-based training can assist junior occupational therapists to construct the patients’ occupational roles, more accurately establish treatment goals and plans that meet patients expectations, and improve the quality of holistic care.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC15  Survey on Ophthalmology Education and Exposure (SEE): Does amount of ophthalmology teaching affect the confidence and competence level of medical students in recognising common eye conditions? (8414)

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ABSTRACT:

Background: Medical graduates are expected to be competent in recognising common ophthalmic conditions and emergencies, despite ophthalmology placements not available in all UK medical schools. There is presently a lack of published data exploring how duration of placement affects confidence level and actual competency of students in recognising those presentations.

Summary of Work: Participants attending the Moorfields 2020 Duke Elder Preparatory Course were invited to complete an anonymous online questionnaire with aims to collect information regarding duration of placement and to assess confidence (via Likert Scale - score 1 being not confident at all and score 5 being very confident). Participants were also invited to complete an optional quiz in order to objectively assess their ophthalmic knowledge.

Summary of Results:
A total of 31 participants from 12 different medical schools completed the survey. Duration of ophthalmology placement (median: 1 week) ranged from no placement at all (4 universities) to 2 months (1 university). Students with no formal ophthalmology placement felt less confident at diagnosing (2.80±0.45) and managing common ophthalmic conditions (2.40±0.55) compared to students whose placement was < 1 week (2.88±0.91; 2.64±1.06), exactly 1 week (3.44±0.81; 3.06±0.93) or > 1 week (3.50±0.71; 3.50±0.71). Students with no ophthalmic placement also scored less well at the quiz (7.80±1.10; maximum score 10) compared to their counterparts whose placement was < 1 week (8.00±1.00) or exactly 1 week (8.54±1.20). Students with no ophthalmic practical skills teaching reported lower confidence at essential skill like assessing visual acuity (2.83±0.75) compared to those who had 1-2 hours (3.67±1.18) or >2 hours of teaching (4.10±0.88). Majority (61.54%) of the participants prefer a combination of different teaching styles over lectures alone (0%), practical sessions alone (7.69%) or small group teaching alone (30.77%).

Discussion and Conclusions: There exists a wide discrepancy in the duration of ophthalmology teaching between medical schools. Minimal ophthalmology placement is associated with lower confidence at diagnosing and managing ophthalmic conditions. This is corroborated by the poorer performance in objective assessment among students with minimal ophthalmology exposure. It also highlights the importance of maintaining ophthalmic placements in the curriculum.

Take-home Messages: This study underscores the need to have a standardised minimum duration of ophthalmology placement across universities.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC16 Ophthalmology Education in the U.S. and Canada and Strategies for Postgraduate Participation to Improve Learning (9602)

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ABSTRACT:
Background: Many ophthalmological problems are often reflective of greater systemic illnesses, such as diabetic retinopathy. Consequently, it is imperative that primary care physicians have the skills to distinguish emergent eye findings from those that are chronic or benign. This systematic review explores the gap between undergraduate ophthalmology education and primary care needs and also addresses opportunities for ophthalmology residents to participate in curriculum improvement.

Summary of Work: A search was conducted in PubMed with the search terms: ((ophthalmology education[MeSH Terms]) AND ((undergraduate medical education[MeSH Terms]) OR (medical student[MeSH Terms])), yielding 352 articles. Articles not written in English or published before 2010 were eliminated due to lower applicability to current medical curriculum. Those not concerning U.S. or Canadian medical education were also excluded, leaving 20 articles in total.

Summary of Results: Five primary themes were identified: challenges to ophthalmology education, potential remedies for optimizing curriculum, competency-based education, cost effective learning aids, and ophthalmology service projects. The lack of standardized curriculum and inadequate clinical exposure emerged as major challenges. Remedies proposed included increasing adherence to curriculum guidelines, encouraging relationships between ophthalmology faculty and medical school administration committees, and extending utilization of extracurricular activities. Other recommendations suggested the incorporation of competency-based education, low-cost learning aids for student practice, and student-led service projects to promote and expand underserved care.

Discussion and Conclusions: There has been an increasing need for ophthalmology training in primary care specialties, however, ophthalmology education for medical students has continued to decline. Four major areas to tackle include: 1) adjusting current curriculum to address learner needs, 2) maximizing learning opportunities by promoting crossover between ophthalmology and other disciplines, 3) utilizing cost effective student learning aids to assist skill acquisition, and 4) cultivating service motivation to improve care and increase underserved outreach.

Take-home Messages: Improvements to the ophthalmology education decline are largely focused on optimizing limited curriculum time. Postgraduate engagement can both promote medical student ophthalmology education and create opportunities for ophthalmology resident training in teaching and curriculum development.
ABSTRACT:
Background: Post-graduate trainees are expected to perform the clinical procedures of central venous catheter (CVC) insertion during their post-graduate year training (PGY). However, it is not one of the 81 minimal required clinical skills for medical graduates. Performing CVC insertion carries a certain level of risk of hemothorax, pneumothorax, and arterial puncture injuries. Studies have shown ultrasound-guided vascular access can minimize the number of punctures and the occurrence of complications. Therefore, it is somewhat important to utilize simulation-based education to introduce ultrasound-guided vascular access in general medicine training.

Summary of Work: This course used the flipped classroom model. Trainees were required to complete an online course and a pre-test before entering the practical session, which used the workshop model to deconstruct the four steps of ultrasound-guided vascular access. At each station, trainees practice procedures on a high-fidelity simulator, and an instructor was nearby to offer advice. After completing the course, the trainee must take an online post-test and fill out a satisfaction survey.

Summary of Results: The average trainees satisfaction level towards the course is as high as 5.00, indicating the trainees think highly of the class. The trainees found the pre-class video and the pre-test from the flipped classroom to identify the key learning points. Besides, the mean test score improved from the pre-test, 52.2, to the pro-test, 75.56, which is statistically significant. Trainees have notably improved the learning effectiveness through high-fidelity simulation practices.

Discussion and Conclusions: This study reduces the amount of time spent in a lecture through the flipped classroom model and improves the learning efficiency through simulation-based practices. The results show that the trainees are highly satisfied with the training that implements simulation-based education with the flipped classroom. The trainees can successfully perform ultrasound-guided central venous catheter insertion, and the level of improvement is also noticeable.

Take-home Messages: Flipped classroom model can shorten the class time, and practical courses emphasize situational simulation and teachers guidance at any time. The two teaching strategies are combined to improve learning satisfaction and knowledge.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC18  Current Status and Student Views on Medical Education in Physical Activity (9075)

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ABSTRACT:
Background: Physical activity (PA) represents a significant modifiable cardiovascular risk factor. Although PA counseling has been shown to increase patient activity levels, most patients do not receive PA counseling. Physicians have cited lack of knowledge and confidence as factors hindering increased PA counseling. Given that many medical schools do not teach PA, we seek to study medical students attitudes towards the incorporation of formal training on PA counseling into the curriculum.

Summary of Work: An anonymous survey was distributed via email and social media channels to medical students in 9 US medical schools. Responses were collected over 3 weeks (12/27/2020 - 1/17/2020). The questions covered demographics and perspectives about medical education in physical activity. Descriptive statistics were used to depict responses.

Summary of Results: Of 5500 invited medical students, 1182 (21.5%) fully completed the survey. 1089/1182 (92.13%) of all students, including 183/197 (92.89%) fourth-year students surveyed responded that they had never participated in formal medical school education on PA. 61/91 (67.03%) of those who reported taking a course said it was required. On average, students who received PA training had 2.51 hours of PA education (standard deviation 0.88). 1010/1182 (85.45%) said that medical schools should require formal training on patient counseling for PA to graduate. 1075/1182 (90.05%) somewhat or strongly agreed that understanding the effects of PA on the human body is critical for maximizing patient care.

Discussion and Conclusions: A majority of the surveyed medical students have not had formal training on PA counseling. These students believe that understanding the effects of PA on health is valuable to patient care and that education on PA counseling should be required. More training on PA counseling can increase physicians knowledge and confidence in this domain, thus increasing the counseling delivered to patients and improving health outcomes.

Take-home Messages: Currently only a minority of medical students report having had dedicated education on PA, though the large majority of students believe training on PA counseling can bring significant value to patient care. Further studies are needed to determine the best formats with which to implement PA education in curricula.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC19  Real time visual feedback of radiation: Is the learning effect lasting?  (9367)

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ABSTRACT:
Background: Extensive interventional radiological procedures lead to an increased level of scatter radiation, which poses a health risk for both patients and operators. Currently operators only receive feedback on a monthly basis about the levels of scatter radiation. These numbers are hard to trace back to a certain procedure. The aim of this study was to evaluate the long-term influence of a real-time visual feedback system on the reduction of scatter radiation.

Summary of Work: A pre-aware, aware and post-aware phase was distinguished. During the pre-aware phase (ten-month duration), scatter radiation was measured without visual feedback systems. Biliary drainage (PTCD) and Transarterial chemo-embolization (TACE) procedures were chosen for measuring scatter radiation because of the difference in procedure-and fluoroscopy-time and distance to the tube. The aware phase featured a live visual feedback system for a period of three months. During this period, radiation doses were measured. One dedicated person was assigned to remind the operator of the dose-aware-system during procedures. In the post-aware phase (duration of five months), 22 months after the aware phase, real-time visual feedback was not provided anymore. Scatter radiation dosages were evaluated once more to evaluate the learning effect.

Summary of Results: TACE procedures were measured with median doses of 0.12 mSv during the pre-aware phase and a significant lower dose of 0.03 mSv (p=0.02) during the aware phase. Which increased to 0.04 (p=0.05) in the post aware phase. For PTCD procedures, we measured a median dose of 0.0200 mSv during the pre-aware phase and a median dose of 0.05 mSv in the aware phase (p=0.822). This remained stable during the post-aware phase.

Discussion and Conclusions: Real-time visual feedback is an effective educational tool to increase operator awareness and leads to a decrease in scatter radiation for TACE procedures. PTCD procedures are too short to show a significant effect. The advantage of visual feedback ceases to exist when removed from the room.

Take-home Messages: A real-time visual feedback system can help to learn the operator to reduce the scatter radiation. The effect remains to a certain degree after removal of the system.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC20 Do we teach enough Radiology to medical students? A National Study (7498)

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ABSTRACT:
Background: A recent study has shown that the averaged time tabled teaching for medical schools in the UK was 4629 hours. Radiology has been demonstrated to be an excellent teaching source, yet the number of hours allocated to this has never been calculated. The aims of this study were to evaluate and quantify the hours allocated to radiology teaching in Scottish Medical Schools and to evaluate if they can fulfill requirements expected from other Clinical disciplines and the upcoming General Medical Council Medical Licensing Assessment (GMC MLA).

Summary of Work: Data pertaining to timetabled teaching for Radiology in Scottish Universities was obtained from the authors of the Analysis of Teaching of Medical Schools survey. In addition, University Lead Clinician Teachers were surveyed on the radiological investigations and skills medical students should have at graduation.

Summary of Results: Medical students in Scottish Universities were allocated 59 hours in Radiology (0.3%) out of a total 19,325 hours of timetabled teaching. Hospital based teaching was variable and ranged from 0 - 31 hours. Almost half (15 of 31) of Clinical Teachers felt that there was insufficient radiology teaching in their specialty. Thirteen of 30 conditions included in the GMC MLA were listed by Clinician Teachers, while 23 others not listed by the GMC were considered important and cited by them.

Discussion and Conclusions: This study demonstrates that medical students do not receive enough Radiology teaching. This needs to be addressed by Universities in collaboration with the NHS in an effort to bring up this up to line with other developed countries, and prepare students for the GMC MLA.

Take-home Messages: How Radiology in the Medical Student curriculum can be increased needs urgent resolution.
ABSTRACT:

**Background:** Studies show the relevance of scientific expertise of students for research and clinical work. Increasing digitalization and a multitude of information sources show the importance of defining reliable sources and to critically question hypotheses. Problem-based learning (PBL) has been used in this department for 17 years using current cases on each subject. Science PBL is designed to specifically teach scientific work starting in the 1st semester in order to improve learning processes and prepare students for future scientific research. Supplemented by courses such as How to read and write a paper, journal clubs and summer school, Science PBL is the foundation of our longitudinal scientific curriculum.

**Summary of Work:** RWTH Aachen University has been successfully applying the Science PBL concept to medical students since 2019. Under the supervision of peers as well as physicians, students work independently in small groups on medical case studies. The goal is to learn about historical milestones in medicine, practice research skills and understand the relevance of their discovery to everyday medical practice today. The group size is about 10 students. The course is evaluated on a scale of 1 (very good) - 6 (unsatisfactory).

**Summary of Results:** Throughout the last 2 years all cases could be solved and insights were gained about important historical discoveries and their significance for today’s work in medicine. 282 participants took part per year, 243 students evaluated the course (median 2.0) so far.

**Discussion and Conclusions:** The students gained new knowledge, skills of scientific research and the awareness of which scientific methods (e.g. experiment) are suitable for knowledge acquisition. It is important to critically question new information and verify that there is a scientific basis. All these abilities are to be acquired in the longitudinal scientific curriculum. Although long-term results regarding the usefulness of Science PBL for subsequent scientific work cannot yet be estimated, the concept has proven successful for our program and will be continued.

**Take-home Messages:** Interactive, scientific work can be integrated early during studies to provide a foundation for upcoming scientific work and to improve groupwork skills.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC22 Statistics for undergraduate medical students in Sudan: Predictors for using statistical analysis software and attitude toward statistics among medical students in Sudan (9557)

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ABSTRACT:
Background: Statistics helps medical students to understand and evaluate medical research. Also, statistic helps doctors during in designing research projects. Without understanding statistic, students cant choose the prober analysis in their research. We conducted this study to assess the attitude toward statistic and predictors for using statistical analysis software in Sudan.

Summary of Work: A cross sectional study included medical students in governmental universities. An online survey was randomly distributed to medical students to assess practice and attitude toward statistic. Survey of Attitudes Toward Statistics (SATS-36) was used to measure the attitude with a Cronbachs alpha of 0.90. We used a 7-point Likert ranked from 1(strongly disagree) through 4(neither disagree nor agree) to 7(strongly agree). A logistic regression was used to find the predictors for using statistical analysis software.

Summary of Results: A 489 with a mean age 21.94 ± 1.61 were enrolled. 233 (48%) of them were male. 228 (47%) of students received biostatistics workshop. The percentage for published research was 28 (5.7%). The overall attitude was 4.63 ± 0.81. The mean score for components of attitude was high for students who are using statistical analysis software and showed significant difference in affect (P = 0.002) cognitive competence (P = 0.002), value (P = 0.002), Interest (P = 0.004) and Effort (P =0.029). 127 (26%) students are using statistical analysis software. Of them, 91 (72%) used SPSS and 64 (50%) used excel. For logistic regression, Being at 6th year (OR:4.50, CI 95% 1.51 - 13.38; P = 0.007), attending research methodology workshop (OR:2.34, CI 95% 1.35 - 4.05; P = 0.002), participation in research project (OR:2.35, CI 95% 1.41 - 3.91; P = 0.001) and publishing a research (OR:3.38, CI 95% 1.30 - 8.87; P = 0.012) were associated with using statistical analysis software.

Discussion and Conclusions: The study showed average attitude and low published research among medical students. Also, being at higher years, participating or publishing research and attending research workshop would predict the usage of statistical program.

Take-home Messages: There is a problem in understanding statistic among students. For improvement, further workshops in biostatistics and participation in research is needed to and fill this gab.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC23  Impact of the COVID-19 pandemic on research involvement and perceptions of virtual events: Insights from a conference evaluation (8118)

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ABSTRACT:

Background: The recent COVID-19 global pandemic has forced students to adapt to the closure of universities and the sudden shift to virtual learning. In addition to medical education, medical conferences, including those organised by medical students, experienced an inevitable transition to a virtual format. Conferences allow students to explore areas of interest and provide a platform to present their research, learn new skills, and network with like-minded attendees and speakers. Virtual conferences bring unique benefits resulting from the virtual format, such as enhanced inclusivity in addition to the environmental benefits.

Summary of Work: This study aimed to assess the impact of the COVID-19 pandemic on research involvement and views of virtual versus in-person events of medical and biomedical science students via a cross-sectional survey study of the impact of COVID-19 on Young Researchers Conference (YRC) participants. Primary outcomes included attitudes towards research, confidence in selected research skills, and relative merits of virtual events.

Summary of Results: The virtual YRC 2020 event attracted over five times as many attendees as the previous years conference. Medical students remained interested in pursuing research despite over 70% of them being concerned about access to research opportunities. According to 80.4%, the COVID-19 pandemic made securing research opportunities more difficult. Nevertheless, following YRC 2020, participants reported increased confidence across all the skills covered in the conference workshops. Virtual conferences were preferred to their in-person counterparts and were found to be equally engaging as in-person events despite the shortcomings of online networking.

Discussion and Conclusions: There are many benefits of student involvement in research, and student-led conferences have proven to be effective at increasing students confidence when embarking on their academic journey. With the current changes in circumstances due to COVID-19, this underlines the promising nature of online conferences in providing delegates with the same high-quality information and training. At the same time, they promote diversity, inclusivity, cost-effectiveness, while offering the ability to attend such events from the comfort of ones home.

Take-home Messages: Virtual conferences offer high-quality information to medical students - Student conferences play an important role in providing an introduction to academic careers for medical students.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC24 Our first year of implementing hospital-based quality improvement course for medical students (8658)

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ABSTRACT:

Background: Healthcare quality improvement and patient safety is a critical domain in the health systems science concept. In 2020, the community medicine department designed and implemented a 3-week quality improvement course for final year medical students. In the first week, we provided online lectures and discussions about healthcare quality improvement and patient safety. The quality improvement standard was referenced from SQUIRE 2.0. Patient safety content was translated from the WHO guideline of patient safety training. Later, students were assigned to develop quality improvement projects in our partner community hospitals.

Summary of Work: The medical students were divided into 10 students per group, 1-2 groups per community hospital. Together with the community hospital provider, the students identified the problems in service operation and patient safety. With supervision by faculty, they conducted the data gathering and literature reviewing. The proposal of the quality improvement project was synthesized and presented to the hospital. For an evaluation process, all proposals were graded by the faculty. Moreover, self-reflective writing was written by the medical student individually. Students satisfaction was collected after the course finished.

Summary of Results: In 2020, 174 sixth-year medical students were enrolled in this course. During this first year of implementation, the students produced 40 quality improvement project proposals. Most of the projects were related to chronic care including, diabetes, COPD, and mental health services. Many projects focused on developing decision support guidelines such as care protocol for early neonatal sepsis and management protocol for patients with alcohol withdrawal symptoms. A survey for students satisfaction shown 93.9% of students responded satisfaction and very satisfaction. Qualitative data from self-reflective writing showed they thought the course was beneficial for them to practice in health systems and make a change.

Discussion and Conclusions: Someone stated that health systems science is the third pillar of medical education. After one year of implementation, our faculty and students highly supported that quote. Even though there are many domains in health systems science, the course that introduces quality and safety might be an excellent start.

Take-home Messages: For the final year medical students, this course provides them an ability to practice in the system happily and make a change.
#EPOD-SC: Subjects in the Curriculum

#EPOD-SC25  Embedding Social Prescribing into the UK Undergraduate Medical Curriculum (8734)

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ABSTRACT:

**Background:** Social prescribing (SP) is now a key aspect of 21st century healthcare delivery and NHS Long term plan, yet it is missing from the core undergraduate curriculum in UK medical schools. We explored how to introduce this new content to ensure early years students understand what social prescribing is, how it works and why it is beneficial.

**Summary of Work:** In devising the curriculum delivery format for a new UK medical school, sessions on SP were embedded at each early years academic stage as a pilot project to raise awareness of the topic. Content was devised in partnership with the student SP champion, academic staff and partner stakeholders from the voluntary sector, making use of the skills and resources available locally. A focus was given to incremental learning that was stage appropriate: first year content focussing on introducing SP, second year content discussing patient experiences and third year focus on interactive simulated MDT based on SP.

**Summary of Results:** Results from the first two years of this pilot project show that the programme delivery has been well received by the cohort, with survey data showing that students have increased awareness (60%), interest in the subject (100%), and 63% were more likely to identify opportunities for SP on placement.

**Discussion and Conclusions:** We found that taking an integrated, structured approach which builds on the content and delivery year on year, first established a core knowledge base and secondly led to increased engagement from students in the topic. Having implemented SP into the curriculum, it will now be retained in the core timetable. Flexibility afforded by the timetabling of activities in a new medical school allowed these activities to be included as part of core learning time. This improved engagement during the sessions and subsequently improved follow up enquiries towards the SP lead and academic staff. The pilot has also led to the creation of a novel link worker shadowing scheme for medical students as part of an optional module, is association with regional SP stakeholders.

**Take-home Messages:** Embedding SP into the early years curriculum in a structured, interactive manner is feasible and is an important addition to 21st century medical education.
#EPOD-CE: Curriculum Evaluation

**#EPOD-CE1 Creating Meaningful Learning Opportunities During COVID Lockdown (8602)**

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**ABSTRACT:**

**Background:** Globally, the COVID-19 crisis caused significant disruption to medical students learning. However, continuity of training and preparing them adequately for their future practice remains essential. In particular, disruptions of local and overseas elective postings have created a major challenge to provide wider exposure of learning to students. To mitigate this impact, the Yong Loo Lin School of Medicine (NUSMed) developed a new initiative called the Pathway programmes. Students could choose from one of six pathways offered. The Centre for Medical Education (CenMED), as a core unit in NUSMed, anchored two pathways from 2 March to 8 May 2020: (1) Medical Education (STAR—Skills in Teaching And Research), and (2) Medical Innovation and Entrepreneurship (MIE).

**Summary of Work:** CenMED designed the curriculum for both STAR and MIE, and topics were delivered using a flipped classroom model. There were also self-regulated learnings using existing resources in edX and online modules before attending interactive workshops on ZOOM. To better facilitate students learning, Entrada (a learning management system) and Microsoft Teams were used asynchronously to communicate with students. At the end of the programme, students were invited to voluntarily share their feedback and experience via an online survey. The surveys intent was to identify strengths and limitations to improve the pathways for future runs.

**Summary of Results:** Both qualitative and quantitative results indicated that the learning experiences have broaden their horizons beyond the usual medical curriculum and they enjoyed the pathways very much.

**Discussion and Conclusions:** Limitations noted were (1) short lead time to develop the curricula, and (2) Insufficient lead time to develop a rigorous process to evaluate students performances.

**Take-home Messages:** This experience highlights how a school effectively responded to the pandemic situation in a timely manner to ensure a safe, effective, and continuous learning environment. Another highlight of this experience is the importance of educators, administrators and students commitment, responsibility and resilience, which was displayed in order to develop a quality education product. We hope this example serves as a good reference for adapting to a crisis situation and the importance of maintaining continuity of the learning environment, which would better prepare institutions of similar settings for future pandemics.
#EPOD-CE: Distance Learning in Moroccan Medical Education following COVID-19 Outbreak: Are the Students Really Engaged? (9736)

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**ABSTRACT:**

**Background:** The Coronavirus pandemic outbreak has induced many urgent adaptation measures in Morocco including medical education that had to abruptly adopt an exclusive distant learning approach, without former sufficient preparation. The present study aimed to assess medical students engagement in their acutely implemented distant learning and to identify factors that could be associated to the students studying engagement levels.

**Summary of Work:** Medical students from 1st to 5th years of medical studies, enrolled in all Moroccan public medical faculties were invited to fill-in an anonymous online questionnaire. Data collection took place over 5 days (19-23 April) after 4 weeks of Lockdown and closure of universities.

**Summary of Results:** 3174 medical students took part in the study, with a mean age of 20.4 +/- 1.8 years old, and 65.4% of them were women. 90% of the participants reported moderate to drastic change of their sleeping habits and 65% suffered depression symptoms. 20.7% of students didn’t engage at all in their learning, 26% studied for less than one hour daily, and only 53.3% studied for one hour or more daily. Only 46.4% of the participants had access to multimedia studying resources and only 20.9% were offered online interactive sessions with their teachers. 41.8% of the participants were unsatisfied from their distant learning experience. Lower studying engagement rates were significantly associated with older age, male gender, change of sleeping patterns, depression symptoms, and also with lack of access to multimedia studying resources and poor general satisfaction from the distant learning experience.

**Discussion and Conclusions:** Besides personal factors, this low studying engagement was significantly associated to the lack of multimedia use in the teaching tools, and to the poor students satisfaction of the distant learning experience as a whole. More efforts should be done to improve the e-learning experience for students, with the combination of a richer set of learning approaches and a special attention to the students engaging activities such as interaction with their educators.

**Take-home Messages:** It has become an urgent need to provide Moroccan medical educators with appropriate training to create and implement adequate e-learning resources, and include e-learning as a tool to engage and strengthen students learning.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE3 Deploying A Pan-London Digital Training and Communication Network during the COVID-19 Pandemic (9797)

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ABSTRACT:

Background: The COVID-19 pandemic caused significant disruption to internal medicine training (IMT) in the UK with cancellation of face-to-face training days. This project aimed to develop a training and communication network to provide high-quality digital IMT teaching.

Summary of Work: A baseline survey of trainees assessed the impact of COVID-19 on IMT, conceptions about digital versus face-to-face teaching and concerns about training-related communications. This informed the planning stage of the PDSA cycle and the London Medical Trainee Network (LMTN) was set up. This is a trainee-led communications network delivering monthly pan-London teaching using a protocolised format (webinar, interactive polling, slide template and question bank) and distributing training information through an admin-only posting WhatsApp group. Subjective and objective assessment of engagement with the training days, question bank and communications network were measured for each session, informing iteration of the protocol in further PDSA cycles.

Summary of Results: 361 doctors were surveyed; 74% felt training needs were not being met. 50% reported poor access to training information. 167 attended the first digital teaching session in June 2020, increasing to 328 at the fourth session with 2830 poll engagements. Pre-session, 43% thought digital teaching would be as effective as face-to-face, rising to 90% afterwards. 36% thought it would be easy to ask questions during digital teaching, compared to 94% afterwards. Feedback from this session informed further protocolisation of the training days with additional guidance documents and expansion of the committee. There are currently 685 members of the LMTN group and 438 users of the question bank with 6056 questions answered.

Discussion and Conclusions: Protocolisation and iterations reflective of the continuous collection of feedback have achieved a digital teaching programme which is as effective as to face-to-face teaching. The use of a WhatsApp is a simple and NHS-X approved platform to streamline top-down communications to trainees. Additional benefits include increased accessibility due to recordings and time saved through travel to teaching.

Take-home Messages: The COVID-19 pandemic has allowed us to reflect upon the way that education is delivered. Harnessing existing technologies has allowed us to sustainably deliver engaging digital teaching and employ a well utilised communications network.
ABSTRACT:

Background: With the Covid-19 pandemic, students had to adapt to new teaching methodologies to continue medical learning during social isolation. However, few measures have been taken to provide a comprehensive global understanding of the pandemic.

Summary of Work: To analyze the medical students perceptions on how the COVID-19 pandemic affected their lives as a whole, an international webinar was organized to connect undergraduates, at an international level, through the discussion of the reality faced by each country and their opinions regarding some public policies and their own experiences related to the pandemic. This work consists of qualitative and exploratory analysis, based on the Collective Subject Discourse method (Lefevre & Lefevre), about the webinar broadcasted via Youtube, in which 2.000 participants from Brazil, Italy, France, and Switzerland were present. The undergraduates debated on public health policies, preventive measures, online medical education policies, and mental health during the COVID-19 pandemic, according to the reality of each country.

Summary of Results: Mostly positive impressions concerning the event were received, and the comprehension of the global impact of Covid-19 was obtained. Moreover, the knowledge disclosed, allowed medical students, to have a better perception and empathy about the reality of other colleagues around the world.

Discussion and Conclusions: The webinar was very well accepted by the students. Henceforward, it is recommended to encourage this type of activity in the academic environment, so that medical science undergraduates can always be updated and connected with the world. Hence, enabling an excellent, critical, comprehensive, and global education.

Take-home Messages: • This study does not exhaust the discussion about new methodologies that can promote globalized and technological education. • It is believed that new work perspectives can help to raise awareness in the academic environment in the promotion of events that can allow the connection of students worldwide.
ABSTRACT:
Background: Since the establishment of St. Lukes Medical Center College of Medicine - William H. Quasha Memorial (SLMCCM-WHQM) in 1994, the institution continues to innovate its five-year integrated curriculum. The planned gradual transition of the institution to online and blended learning is accelerated by the current pandemic. Curricular innovations are implemented, including establishing the St. Lukes Platform for ubiquitous Pedagogy (StEP uP) and modular delivery of basic and clinical sciences. Preserving quality of clinical training remains a challenge due to limited patient contact. These radical changes led to the question of whether the newly implemented curriculum remains effective in serving the vision, mission, and goals of the program and institution.

Summary of Work: Using Stufflebeams CIPP (Context, Input, Process, Product) and Scrivens Goal-free evaluation models, the formative evaluation of the curriculum will be done through a series of focus group discussions with department heads, subject and year-level coordinators, and students. Data will also be collected through course and faculty self-assessment, student evaluation of courses, and student performance.

Summary of Results: The evaluation results will provide information regarding the implementation of the curriculum and its effect on the academic performance and learning experience of the learners, strengths and outcomes of the program, and problems encountered by the stakeholders.

Discussion and Conclusions: The CIPP model provides a systematic and multidimensional evaluation at any stage. Meanwhile, goal-free evaluation offers empirical evidence of the effects of the program compared to the needs of the stakeholders. Determining how a program is implemented and its effects - intended and unintended - on the learning experience of the learners will guide curriculum planners to design a program that meets the needs of the stakeholders. Moreover, identifying the problems encountered during implementation will lead to recommendations for program improvement.

Take-home Messages: Administrators and curriculum planners can make informed decisions on the design of a program using information gathered through holistic and comprehensive evaluation. Hence, it is a good practice to perform structured evaluation whenever new or revised programs are implemented.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE6  Teaching acute respiratory tract infection in children using peer-assisted learning VS a live zoom lecture for the 4th year medical students amid COVID-19 pandemic : Co-Authors (9610)

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ABSTRACT:
Background: Amid COVID-19 pandemic the normal teaching and learning have been disrupted. This study aimed to compare the learning outcomes and students satisfaction in teaching acute respiratory tract infections (ARIs) in children between peer-assisted learning (PAL) and a live zoom lecture (LZL) for the medical students.
Summary of Work: The cross-sectional analytic study was investigated in the 4th year medical students in the paediatric rotation at Bhumibol Adulyadej Hospital, Thailand. In ARIs in children, the students were randomly divided into two groups of PAL and LZL. Then attending staff orientated and gave a handout of ARIs to all students. In the PAL group, the students had a discussion with the staff and then they prepared a PowerPoint to teach peers under staff supervision. In the LZL group, the students read the handout before attending the interactive live lecture by the staff using Zoom. The pre- and post-test scores in multiple choice questions, student satisfaction and feedback were recorded and analysed.
Summary of Results: The 28 students were assigned to PAL and LZL group with similar GPAs of 3.23 and 3.20 respectively. The pre-/post-test scores and mean differences of PAL and LZL were 53.0 ± 21.1/ 73.8±14.2 (mean difference 39.3; 95% confidence interval [CI], 8.4 to 33.3; P 0.003) and 65.5±18.7/ 79.8±18.7 (mean difference 39.3; 95% CI, 5.0 to 23.6; P 0.006) respectively. Median student satisfaction using 4-point scale in PAL and LZL were 3.4 (IQR 2-4) and 3.5 (IQR 3-4) respectively and not statistically significant.
Discussion and Conclusions: Both PAL and LZL group had significantly improved the test scores with high student satisfaction. These study results are similar to other studies in PAL and online lecture in other disciplines. These modes of teaching can be transferred to other settings and make clinical skill teaching and learning more challenging.
Take-home Messages: Adapted teaching and learning in medical education during the pandemic is crucial to maintaining the learning outcomes and final maximised patient outcomes.
Evaluating the perceptions of online vs face-to-face learning in Graduate Entry Medical students (8162)

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ABSTRACT:
Background: Online learning is not a new concept. However, with the COVID-19 outbreak in 2020, most universities have been forced to make changes to the way the curriculum is delivered. The majority of existing literature focuses on comparing traditional methods with asynchronous e-learning modules, so there is little research directly comparing live online tutorials with in-person learning, and even fewer including Graduate Entry Medical (GEM) students, who make up a significant minority of many cohorts.

Summary of Work: Two online surveys comprised of 5-point Likert items and open-text questions were distributed to GEM students studying at Cardiff University, and completed before and after a case-based learning tutorial. One group attended the tutorial in-person (with relevant coronavirus safety measures), and another group attended online via a video-conferencing platform. An ethical approval waiver was granted by Cardiff University School of Medicine Research Ethics Committee. The surveys underwent senior review and piloting. SPSS 26 was used to analyse quantitative data.

Summary of Results: On average, 20 students completed both surveys (95% response rate). The pre-session Likert data demonstrated that students tended to perceive face-to-face learning as more preferable, enjoyable and effective than online learning. However, after the tutorial, there was no significant difference in the two groups across domains including perceived satisfaction (p = 0.147), interactivity (p = 1.000) and learning (p = 0.352). Free-text comments revealed the online tutorials to be more flexible and comfortable due to lack of travel and personal protective equipment, however they felt they were less engaging and interactive compared to in-person tutorials.

Discussion and Conclusions: Our research shows that there was no significant difference in perceptions when attending a synchronous online tutorial compared with an in-person tutorial. However, in-person learning was perceived as preferable in many of the domains. As the majority of pre-clinical learning continues online for the near future, it is important to establish what changes can be made to improve the online experience.

Take-home Messages: If online learning remains a significant part of future educational practices, further work should establish how we can enhance virtual learning, not only in terms of perceptions, but ensuring that student academic performance is at least maintained and hopefully improved.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE8 Comparison of teaching effects of online and offline clinical practical skills: A propensity score matching analysis (8285)  

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ABSTRACT:  
Background: During the prevention and control of COVID-19, the postponement of school semesters has brought challenges to clinical practice skills teaching. This study was conducted to evaluate the teaching effects of the online clinical practical skills, comparing with the effects of offline teaching, thus providing reference evidence for the remote skills teaching under the special circumstances of normalization of COVID-19.  
Summary of Work: We randomly selected 55 trainees of the 2016 grade majoring in Clinical Medicine from Shaanxi University of Chinese Medicine as the experimental group. They were implemented the new remote online skill teaching method when suspended at home from February to May, 2020. The control group came from trainees of the 2015 grade who received offline skills teaching from February to May, 2019. To minimize the selection bias among two groups, 1:n Propensity Score Matching (PSM) was performed by R3.2.2 software. The teaching effects of the two groups were both evaluated by four-station Objective Structured Clinical Examination.  
Summary of Results: After PSM, a well-matched data file was generated with 55 of the experimental group and 109 of the control group. The pass rates of the two groups were 94.5%-100% VS 96.3%-100%, respectively. The scores of central venous puncture and catheterization and Routine oral and maxillofacial examination in the experimental group both showed no statistically significant difference, compared with those of the control group (P>0.05). The total score of the four stations and the scores of bone marrow puncture, and conjunctival sac flushing of the experimental group were all significantly lower than those of the control group (P<0.001).  
Discussion and Conclusions: Trainees can basically master the four clinical practical skills through remote online teaching in view of the higher pass rates. However, online teaching for bone marrow puncture and conjunctival sac flushing cant achieve the effects of offline teaching.  
Take-home Messages: This new model of remote online clinical practical skills teaching is an effective exploration during the outbreak. But it still has some defects and cant completely replace the traditional offline teaching.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE9 Students’ perspective about the use of online teaching as a response to Covid-19 (9644)

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ABSTRACT:
Background: The COVID-19 pandemic led educational institutions to adopt online learning. Consequently, students found themselves in an unusual situation, with urgent and unexpected demands caused by the need of adaptation to an entire new teaching and learning environment. In this study, we explored medical students perspectives about the barriers and facilitators to learn in an online environment.

Summary of Work: This is a qualitative study with a semi-structured interview with open-ended questions. Seven fourth- and fifth-year medical students were interviewed. After data transcription, we conducted a content analysis.

Summary of Results: Four categories emerged from the analysis. The first category was students perception of problems related to teaching strategies, from a personal and institutional point of view, which was potentialized by online teaching: for instance, the massive use of expositive lectures with low interaction, and studying only as preparation for the exams. The second category relates to the students perception of opportunities and difficulties that came from adapting to the new teaching format, such as having more time for themselves and the difficulties to self-regulate their learning processes. The third category refers to the difficulties of distinguishing a theoretical discussion of clinical cases from the practice itself, resulting in a sensation of better theoretical knowledge acquisition contrasting with the lack of practical skills. The fourth category encompasses the emotional perceptions of the graduation interruption caused by the pandemic such as academic gaps and delaying in professional plans.

Discussion and Conclusions: Our findings suggest that the adoption of online teaching due to the pandemic initially caused disorganization and frustration among medical students. But, after the first impact of the transition, the students were partially able to manage themselves in a new teaching and learning environment. It was evident that the abrupt suspension of face-to-face activities created difficulties in self-regulation among students, perhaps due to changes in the environment and fixed times previously provided for studies.

Take-home Messages: The pandemic made students aware of problems related to their education that existed previously and that online learning required greater autonomy and organization by himself.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE10  Medical Education during COVID-19 pandemic in Greece (9274)

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ABSTRACT:  
**Background:** HelMSIC, Hellenic Medical Students International Committee, is an independent, non-profit, non-governmental and non-partisan organisation founded in 1958 from medical students. HelMSIC consists of 7 local committees, one in each Medical School of Greece. Driven by the changes that took place in our education due to COVID-19 pandemic, we created a survey in order to collect data on how the pandemic affected the quality of medical education in Greece and to find out the students opinion on the changes that took place.  
**Summary of Work:** The survey was available online to all medical students and was answered in total by 404 students from all years. After collecting our data, we proceeded to write a Report concerning the results of the survey, including possible suggestions for improvement.  
**Summary of Results:** During the pandemic, only a small percentage of classes was held face to face. Unfortunately though, during those classes students state that they consider insufficient the protective measures taken by Medical Schools against the virus. Regarding Teaching Methods, online lectures were the ones that were used the most. Asynchronous teaching, face to face classes in small groups, online simulation and personal assignments were used to a lesser degree. Face to face classes in small groups were assessed as very sufficient regarding the students academic needs, while all the other methods were assessed as averagely sufficient. The vast majority of students stated that they are concerned about the effect of the situation on their clinical, practical and communication skills. Lastly students would like to receive a better education regarding SARS-COVID-19 virus and pandemics management.  
**Discussion and Conclusions:** Medical education in Greece has been relegated during the past year affecting negatively medical students knowledge and skills and their future professional competence. Medical schools should examine the situation further and find ways to cope with the obvious quality deficiencies that have occured during the pandemic.  
**Take-home Messages:** Students were not sufficiently protected during their face to face classes. Face to Face classes that are held in small groups are considered to be the most efficient learning method according to students. Greek Medical Schools need to develop more their online teaching methods in order to improve online education.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE11 Students’ satisfaction with blended-learning and flipped classroom methods on clinical simulation-based teaching during Covid-19 pandemic (8425)

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**ABSTRACT:**

**Background:** Education systems have advanced exponentially because of the Covid-19 emergency with the aim of replacing the traditional face-to-face learning. A combination of two instruction modes, blended-learning (BL) and flipped-classrooms (FC), was implemented as new approaches for the Simulation-based learning activities of Humanitas fifth-year medical students during the current pandemic. The aim of this study was analyzed the students perception and satisfaction during the Simulation-Base clinical learning though the combination of BL and FC modalities.

**Summary of Work:** This cross-sectional study was conducted through an anonymous, non-mandatory survey that was administered to all fifth-year medical students (n=120) after completion of their BL and FC Simulation-Base clinical learning where more than 40 different clinical scenarios were presented. The students feedback questionnaire included items related to knowledge, technical and non-technical skills, environment, and faculty. The survey was validated by an expert reviewer, and the reliability calculated for each item. Responses were measured on 5-point Likert-scale items.

**Summary of Results:** The response rate was 65% (n=78). Overall, satisfaction rate mean of the BL and FC modalities was 4.2. The quality mean rate of the remote experience was 3.5. The mean rate of students goals and objectives achievements was 4.1. The mean rate of active participation from remote was 3.6. The mean use of recorded videos for further study was 3.2. Identified problems by our study were sporadically technical difficulties when sharing the mannequin monitoring with the remote students, some quality problems in the share of imaging exams (CT scans, MRI, etc.) and isolated students internet connection problems during the remote experience.

**Discussion and Conclusions:** Our results suggest that BL and FC, relatively new concepts in medical education, show promising results with a high student satisfaction level during simulation-based learning. Although there were some challenges and further research need to be conducted for final conclusions; our students degree of satisfaction supports the implementation of BL and FC learning for the simulation-based learning specially during an emergent situation as the current pandemic.

**Take-home Messages:** Our findings demonstrated students perception and satisfaction with BL and FC as they were able to develop and improve their skills in a conducive learning environment.
#EPOD-CE12 Impact of COVID-19 on Student Satisfaction with Online Surgical Clerkships (8036)

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ABSTRACT:
Background: In March 2020, medical student clinical rotations were suspended nationwide due to the COVID-19 pandemic and virtual clinical curricula were implemented. Currently, no literature investigates medical student satisfaction with surgical clerkships converted to virtual clerkships in the COVID-19 era.

Summary of Work: This survey study evaluated medical student satisfaction with surgical clerkships converted to virtual curriculum compared to satisfaction with traditional clerkships prior to COVID-19. A 56-question anonymous survey was distributed via email to medical students at 198 institutions. Students who completed third year clerkships between July 2019 and June 2020, and fully answered surveys were included. We excluded incomplete surveys, non-participants in the 2020-2021 residency application cycle, and students in alternate clerkship formats. Surveys included questions assessing satisfaction with traditional vs virtual surgical clerkships and included the Grit Scale and Kolb Learning Style Inventory.

Summary of Results: We received 55 total survey responses. 21/55 (38%) were fully answered surveys. Of the evaluable surveys, the median satisfaction score for traditional vs virtual clerkships was 91 (51-111) and 70 (50-115), respectively (p<0.001). Of the participants, 6/21 (28.6%) had a grit score between 3-3.49, 6/21 (28.6%) between 3.50-3.99, 8/21 (38.1%) between 4-4.49, and 1/21 (4.76%) between 4.5-5.0. No significant association was found between grit score and satisfaction scores for traditional (p=0.226) and virtual clerkships (p=0.519). With learning styles, 3/21 (14.3%) participants were convergent, 6/21 (28.6%) accommodative, 9/21 (42.9%) assimilative, and 3/21 (14.3%) divergent. No significant association was found between learning style and satisfaction scores for traditional (p=0.429) and virtual clerkships (p=0.224).

Discussion and Conclusions: In a small sample of medical students whose surgical clerkships were impacted by the COVID-19 pandemic, we found a statistically greater satisfaction with a traditional clerkship as compared to a virtual clerkship. The satisfaction with traditional clerkships over virtual clerkships was not associated with grit score or type of learning style. Our study highlights the need for additional research on factors that contribute to student satisfaction with traditional vs virtual clerkships.

Take-home Messages: Further research is needed to explore factors that limit student satisfaction with virtual clerkships and aid educators in the successful development of these clerkships.
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ABSTRACT:
Background: This work investigates how COVID-19 restrictions affected internationalization in NWSMU, Saint-Petersburg, Russia.
Summary of Work: In 2020 NWSMU initiated a three-phase survey (30 close questions assessed by the Likert scale and correlated with the answers to 10 open questions) to assess General Medicine course for international students through measuring students course satisfaction. Phase 1 determined indexes for three markers of course satisfaction: students expectations, satisfaction with the format of education, fulfillment of the course aims (15 questions). Phase 2 evaluated student-centered approach implementation (15 questions). Phase 3 got students opinions on the ways for course improvement through 10 open questions. Finally, we correlated the stages and proposed changes to remote classrooms design.
Summary of Results: With multiple correlation coefficient we found strong relation between overall low assessment of elements of student-centered education and: (i) high students expectations (90% of answers); (ii) low satisfaction with education format (96% are dissatisfied with remote classrooms); (iii) adequate fulfillment of the course aims (89% are satisfied with course aims fulfillment, although dissatisfied with remote education). Controversial outcomes indicate strong emotional resistance to totally remote classes, which was confirmed by students open answers in phase 3 of the survey. Students want less autonomy in learning and expect more face-to-face communication in student-student, student-teacher models of interaction. Other priorities include minimizing intercultural communication and mapping course milestones.
Discussion and Conclusions: To raise students course satisfaction we reinforced elements of student-centered education for General Medicine implementation through: (1) combination of teacher-students group video session and LMS Moodle assignments completion; (2) introduced individual teacher-students video consultations once a week; (3) organized video sessions with senior students for a friendlier environment; (4) introduced extra curriculum activities, guided by local students (online round-the-university and city tours, etc.). In late December we carried out the survey again and found more positive outcomes (all indexes of students course satisfaction went up by 20-35%).
Take-home Messages: In 2020 academic internationalization experienced unprecedented changes. However, we should keep adjusting teaching and learning principles to meet high standards.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE14 Evaluation of the online format of the health research methodology course (8761)

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ABSTRACT:
Background: In the medical career, the pandemic forced to change the face-to-face modality of a health research methodology course to an online system, in which communication and the relational aspects inherent to the academic process could be altered. Objective to evaluate the online format of the health research methodology course.

Summary of Work: A mixed design was used, with a quantitative component represented by academic performance and a qualitative component aimed at obtaining the perception of students through in-depth interviews with key informants. The universe was 55 students. The subject is annual and is dictated in the 3rd year of medical school. Didactics includes master classes and learning based on collaborative projects, with 10 groups, a subject tutor per group and 3 methodological advisers. The change consisted in that theoretical contents were delivered synchronously through the blackboard platform, being recorded for the free asynchronous disposition of the students. The group workshops were held on the same platform with the participation of the tutors. The evaluation system was summative and formative.

Summary of Results: The result of academic performance on a scale from 1 to 7 had an average of 6.2 standard deviation 0.2, without failure; average research written work 7 and average oral presentation 6.9. The qualitative analysis yielded four main categories, the first corresponded to stress with the subcategories of: evaluation system, feedback times and presence of didactic structure. The second was content with the subcategories of accessibility, attention times and applicability. The third category was communication, with the subcategories: between peers, with a tutor and with a methodological advisor. The fourth category was social validation represented by the final presentation in a face-to-face instance.

Discussion and Conclusions: The results show that the online modality allows to meet the course’s formal learning objectives, however this modality generates changes in the communicational aspect and its timing, and in the relational experience, both of which in turn alter the teaching-learning process.

Take-home Messages: It is very relevant that the didactic structure of an online versions of a course, incorporates the teaching times and relationships, to favor the reduction of anxiety.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE15 Virtual Teaching Feedback: Should it Stay or Should it Go? (9408)

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**ABSTRACT:**

**Background:** Medical education has showed incredible prowess in being able to keep up despite the pandemic. Virtual teaching, clinical simulation, online workshops amongst others have largely replaced face-to-face forms of medical education. Acquiring formal feedback and maintaining attendance through virtual teaching is crucial yet challenging for both the facilitator and learner. Here, we detail our experience with the implementation of feedback acquisition for virtual teaching during the COVID-19 pandemic.

**Summary of Work:** Despite the pandemic, teaching sessions at our district general hospital went ahead albeit virtually. Initially, feedback was obtained using scanned paper forms that were sent out to the attendees. The uptake however was poor and unreliable considering the latency between the teaching session and the listener feedback. We then introduced a feedback form linked to a Quick Response (QR) code that was highlighted at the end of a speakers presentation. Completion of the online feedback was also linked with attendance for the session. This was piloted for a period of 2 months.

**Summary of Results:** There was a significant increase in the number of feedback responses after the introduction of the electronic feedback. However, probity concerns were raised regarding the circulation of the QR code to non-attendees as a claim for attendance. In addition, feedback obtained this way lacked authenticity.

**Discussion and Conclusions:** Although the QR code method of procuring feedback is easy-to-use, quick to fill and environment friendly, it is not without demerits. Logging onto a virtual teaching session does not guarantee attendance when the listener video is switched off. Moreover, associating the completion of an electronic feedback with attendance was frequently exploited. Another pitfall was the inability of mobile listeners to scan the QR code that showed up on their device screen. Hence, the usage of online feedback forms should proceed with caution.

**Take-home Messages:** 1. Using electronic feedback though innovative should not be used as the sole evidence of attendance. 2. Having virtual attendees switch their camera on would provide a more objective confirmation of attendance. 3. Electronic feedback could best be used for virtual sessions where attendance is not mandatory.
#EPOD-CE: Curriculum Evaluation

#EPOD-CE16 Internship narration - A feedback tool for a panoramic view of the hospital services, teaching and learning (8714)

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ABSTRACT:
Background: Narrative feedback is a method of formative assessment, which can explore many positive and negative aspects of teaching and learning opportunities. This is the more accepted type of feedback compared to numerical. It provides a comprehensive view of the system with specific information on observed performance, experience, and comparison with the standard. It is usually done with the intent to improve performance. The primary aim of the narrative feedback from interns was to know their experience about the clinical and working environment and to access the challenges and opportunities faced by them to learn and execute the clinical skills.

Summary of Work: All interns from two batches (2018-2019) were requested to narrate their experience at end of the rotating internship. A write up without prescribed format was invited anonymously. We scored each positive and negative response as +1 and -1, respectively, for the academic, clinical, working environment, and overall output for individual departments.

Summary of Results: More than 80% of responses for exposure to clinical skills and overall output during minor postings were positive, except for ENT (16.66% and 50% respectively) and orthopedic (25% and 50% respectively). In major posting, the clinical exposure and overall output for surgical departments (eg. Surgery - 100% positive responses for both) were more positive when compared to non-surgical departments like pediatric, and community medicine. According to responses, interns were not happy with working environment in 50% of departments due to hierarchical and organizational issues.

Discussion and Conclusions: The narration is anonymous write-ups for comments, suggestions, and criticisms. An open-ended; unrestricted number of views, unexpected dimension pop up, often ignored/overlooked aspects come up during this exercise. Departments faring badly for clinical skill development, working environment, and overall output of posting were informed as a reflection of the present status of the training with corrective measures for improvement. Partially Guided narration with a word limit in post corrective measures could experiment for further analysis. Cons of narration should be considered for the removal of individual biases.

Take-home Messages: A spontaneous, unbiased, and unprejudiced narrative writing is a useful feedback tool for the improvement in the teaching of clinical skills and professionalism during the internship.
#EPOD-CS: Curriculum Strategies

#EPOD-CS1 Curriculum Development to Address a Crisis: a Case Study (9248)

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**ABSTRACT:**

**Background:** The Association of Faculties of Medicine of Canada (AFMC) undertook a substantive initiative, supported by Health Canada titled the AFMC Response to the Opioid Crisis aimed at developing a national, online curriculum for future physicians in pain medicine and substance use. This curriculum was designed to support Canadian medical schools in meeting their social accountability mandates, contribute to improving clinical practice for patients with chronic pain and address the opioid crisis across Canada.

**Summary of Work:** Two environmental scans were conducted identifying gaps in the undergraduate medical curriculum across all 17 Canadian medical schools. A curriculum committee and an oversight committee were established. Membership in these committees was designed to ensure representation from each medical school in addition to bringing together experts in undergraduate medical education curriculum, pain and substance use. These committees developed evidence-based competencies recommended for a medical student at graduation. The competency work used an iterative feedback process to develop consensus. Curriculum development was grounded in a spiral curriculum framework. A mid-project meeting of stakeholders finalized the curriculum competencies. Subject matter experts developed online modules working with curriculum design experts. Modules were reviewed further by additional subject matter experts as well as reviewers for diversity, inclusion, interprofessional, learner and indigenous perspectives. The curriculum was pilot tested prior to release by over 170 medical students.

**Summary of Results:** This competency-based curriculum was launched in January 2021. Ten curriculum modules were launched. Each medical school received the full set of modules to integrate into their curriculum as appropriate. A free-standing curriculum was also made available.

**Discussion and Conclusions:** The opioid crisis remains a critical health challenge. Addressing this crisis through undergraduate medical education required multiple steps that aligned well with change strategies such as Kotter's. Lessons learned highlighted the importance of developing a consensus driven, multi-stakeholder model for tackling similar challenges.

**Take-home Messages:** Consensus driven, multi-stakeholder curriculum development embedded in a change strategy is an important model for tackling urgent challenges in undergraduate medical education.
#EPOD-CS: Curriculum Strategies

#EPOD-CS2 Development of competency milestones for medical laboratory scientists facing growing career diversity: A Delphi study in Taiwan (8099)

AUTHOR(S):
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ABSTRACT:
Background: Laboratory medicine is a long existing profession in modern healthcare system. However, with the development of biotechnology and various emerging infectious diseases, the professional competencies of the medical laboratory scientist (MLS) should be re-examined, to ensure that students, new recruits and experienced medical laboratory scientists can develop their competencies following.

Summary of Work: The purpose of this research is to identify and formulate a series of milestones on the professional competencies of the MLS, using the career development ladder for Taiwan’s MLS as a basis.

Summary of Results: Eleven MLS supervisors and five physician educators from different hospitals were invited to participate in the survey. A five-rounds Delphi Methodology resulted in a consensus on 18 MLS sub-competencies and 150 corresponding developmental milestones.

Discussion and Conclusions: This study found that experts unanimously approved the 18 sub-competencies and 150 milestone lists for professional development of MLSs. These findings can provide a reference framework for training and evaluation of MLS capabilities by training units, as well as provide learners with clear and concise learning goals that can be evaluated in conjunction with clinical work, in order to achieve a medical education model based on competency as a result. However, it is worth noting that, due to the diversification of the practice environment of MLS, each institution should adjust the curriculum according to the sub-competencies and milestones required by its personnel. For different tasks, the relevant required sub-competencies for MLSs still awaits further research and investigation.

Take-home Messages: It can flexibly respond to the challenges and needs of the MLSs practice environment and diversified work tasks, and maximize the function and value of the MLS.
EPOD-CS: Curriculum Strategies

EPOD-CS3 Ready to launch? Measuring readiness among Canadian disciplines implementing CBME in 2019 and 2020 (8466)

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ABSTRACT:
Background: Organizational readiness is critical for successful implementation of an innovation such as Competency-Based Medical Education (CBME). The purpose of this study was to measure program readiness among Canadian disciplines implementing CBME in 2019 and 2020.

Summary of Work: A survey was distributed to program directors one month prior to implementation. Questions were informed by the R=MC2 framework of organizational readiness and addressed: program motivation, general capacity for change, and innovation-specific capacity. An overall readiness score was calculated. An ANOVA was conducted to compare scores between disciplines. Independent t-tests were conducted to determine differences in readiness scores between cohorts.

Summary of Results: The survey response rate was 42% (n=79) and 45% (n=54) for the 2019 and 2020 cohorts, respectively. There were no significant differences in mean overall readiness scores between cohorts (2019 M=73.3, 2020 M=75.1, p=.347). No significant differences in overall readiness scores between disciplines in either cohort was observed. The majority of respondents agreed that successful implementation of CBME was a priority (2019: 74%, 2020: 74%) and that their leadership (2019: 94%, 2020: 98%) and faculty and residents (2019: 87%, 2020: 75%) were supportive of change. Fewer perceived that CBME was a move in the right direction (2019: 58%, 2020: 51%), and that implementation was a manageable task (2019: 53%, 2020: 48%). 2020 launch disciplines completed significantly more innovation specific capacity tasks (M=.79) than 2019 launch disciplines (M=.72), (p<.05), particularly within the domains of competence committees, resident orientation, and program monitoring. Fewer programs had completed tasks related to preparing off-service disciplines for CBME (2019: 42%, 2020: 47%), and updating program policies (2019: 53%, 2020: 54%).

Discussion and Conclusions: Organizational readiness is critical for successful implementation of an innovation. Our study highlights important areas within each component of the R=MC2 framework where programs excelled in their preparation for CBME, as well as common challenges that serve as targets for future intervention to improve program readiness for CBME implementation.

Take-home Messages: Our study demonstrated heterogeneity in overall readiness to implement CBME among Canadian programs in the 2019 and 2020 cohorts. Results highlight specific areas where additional pre-implementation support and intervention may be beneficial.
#EPOD-CS: Curriculum Strategies

#EPOD-CS4  Efficacy of Critical Care Nursing Competency-based Entrustable Professional Activities: A Case Study of One-Year Critical Care Nursing Training Program in Internal Medicine (9249)

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ABSTRACT:
Background: Professional nursing competencies play a key role in critical care quality. The first year of work is a crucial stage for new nursing personnel to establish their professional competencies.

Summary of Work: We aim to develop a one-year critical nursing care training program of competency-based entrustable professional activities. Twenty-two trainees were recruited from October 2019 to January 2021. In the first phase of the research, the course topics were selected through the nominal group technique in accordance with the Accreditation Council for Graduate Medical Education, Intensive Care Society Standards, Joint Commission of Taiwan, and relevant literature. In the second phase, the course quality was examined and interrater consistency training was conducted. In the third phase, the training effectiveness was verified.

Summary of Results: In the first phase, 8 course topics were selected through a consensus. In the second phase, the content validity index of the courses was .94–.98. Queen’s EPA Quality Rubric was employed to assess the quality of the courses with a cut score of >4.07. An assessment of the interrater consistency revealed a Kappa coefficient of .657, Kuder–Richardson 20 coefficient of .757, Kendall’s K coefficients of .721, and Cronbach’s α of .82. In the third phase, the entrustable professional activity training reached an efficacy of 95.7%. The average score on the direct observation of procedural skills was 4.51±0.57. No patient safety incidents occurred with a retention rate of 90.1%. Qualitative feedback was collected from the instructors and trainees.

Discussion and Conclusions: Entrustable professional activities are manifested with professional competencies to achieve an ultimate goal of medical education. In this study, core competencies were converted to actual medical behaviour and multifaceted objective domains. The 3-phase educational program differs significantly from time-oriented learning plans. The assessment of learning outcome becomes more challenging. The program should be evaluated and revised through diverse ways with qualitative feedback.

Take-home Messages: Competency-based entrustable professional activities are very important in critical nursing care training. It can help us to build up the fundamental competencies of critical nursing care especially when we face the emerging infectious diseases during COVID-19 pandemic.
#EPOD-CS: Curriculum Strategies

**#EPOD-CS5** Summative Entrustable Professional Activities (EPAs) evaluated new nurses’ competences in the first 3-month training program - A preliminary experience (8619)

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**ABSTRACT:**

**Background:** Entrustable Professional Activities (EPAs) is a new assessment to evaluate healthcare providers competencies. Clinical competency committee (CCC) which is pointed by ACGME review the evaluation of residents competence. Few studies used EPAs to evaluate new nurse competencies through CCC. This study described our initial experience on developing EPAs and CCC in new nurses.

**Summary of Work:** We developed 6-hour workshop of competency-based medical education (CBME) and 4-hour CCC workshop. Essential CBME and CCC concepts were introduced in above workshops by 5 trainers who completed faculty training program by ACGME in March 2019. Participants got the certificate of CCC member after completing those workshops. In addition, four summative EPAs were developed for new nurses within the first phase training program according to the training program within 6 core competences, including patient care, medical knowledge, practice-based learning, interpersonal and communication skills, professionalism, and systems-based practice.

**Summary of Results:** Twenty-two nursing preceptors participated two times of CCC workshops after receiving the CBME program as the member of CCC. Each CCC meeting was composed of at least 3 CCC members who completed the CCC training, the head nurse and one preceptor who directly supervised the evaluated new nurse. 180 new nurses when they were around 3 months on the clinical job received at least one time of CCC as evaluating those nursing competencies from September 2019 to December 2020. The major nurses who were evaluated their competencies got on the level 4 of summative EPAs as supervision at a distance and/or post hoc (EPA-1 92%, EPA-2 93%, EPA-3 94%, and EPA-4 93%, respectively) in CCC meetings. Few nurses (4%) must be the extension of the first phase training program at least one month since they need more directly supervision. All of evaluated nurses received the individual training recommendation.

**Discussion and Conclusions:** The findings of this program enhanced a positive experience of EPAs and CCC. The experience was built up on workshop-based faculty development programs within mental shared model discussion. New nurses and preceptors got individual training suggestions in and after the CCC meeting.

**Take-home Messages:** We will exam the validity of EPAs and the contribution of CCC on patient safety outcomes for new nurses.
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ABSTRACT:
Background: Taiwans scope-of-practice regulations for nurse practitioners (NPs) were enacted on January 1, 2016. These regulations clarified the concepts of supervision, collaboration, and protocol used during NPs daily practice and defined 21 invasive and nine noninvasive treatments/procedures. There is no competency framework with programmatic evaluations for surveillance of the NPs workplace performance. This study piloted an entrustable professional activities (EPAs)-based formative assessments of nurse practitioners competencies in Emergency care.

Summary of Work: A core group of faculty members met in three focus group sessions to develop an initial set of EPAs. The core EPAs included EPA1: preliminary management of cardinal subspecialty care presentations; EPA2: performing general procedures; EPA3: communicating consultations/referrals; and EPA4: providing and receiving the handover in the transition of care. The evaluation adopted a supervision-entrustment scale 1-5 of observation, collaboration, direct supervision, indirect supervision, and distant supervision. We scheduled monthly ad-hoc evaluations of the EPAs for the NPs in Emergency care. We collected results from multiple observations for the trainees by multiple assessors and their feedbacks for analysis.

Summary of Results: The developed set of EPAs integrated the six core competencies of the Accreditation Council for Graduate Medical Education. Eight NPs and 18 Emergency physician instructors participated in the study. The results of the 18-month programmatic assessments showed that the average entrustment scale of EPA1 was significantly different in NPs with increasing seniority (Kruskal-Wallis test P<0.01). However, the EPA2-4 did not differ substantially in NPs with increasing seniority. The time required for all NPs to achieve level 5 entrustability for EPA 1-4 was 18, 11, 11, and 8 months, respectively. Clinical instructors identified that recognizing limits is an essential characteristic for an NP to earn their trust.

Discussion and Conclusions: Studies have shown that mutual trust between physician and nurse practitioners in Emergency care is essential for better patient outcomes. A competency-based process for NP clinical performance assessment is needed. Holistic management in Emergency patient care requires the longest training time for NPs to achieve autonomy. Demonstrating a willingness to ask for help is crucial in the achievement of entrustment decisions.

Take-home Messages: An EPAs-based assessment framework may help in oversight competency development in a training program for nurse practitioners.
ENTRUSTABLE PROFESSIONAL ACTIVITIES (EPAs) RAISE ACCURACY RATE OF SPECIMEN COLLECTION AMONG FIRST-YEAR PROFESSIONAL NURSES (7923)

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ABSTRACT:
Background: In this study, clinical specimen collection tasks were combined with competency-based entrustable professional activities (EPAs) and then integrated into nursing core competencies to assist first-year professional nurses to engage in specimen collections with a positive mindset. In a clinical setting, the accuracy rate of specimen collection conducted by first-year professional nurses is only 52%, of which 58% are at Level 2 and 42% are at Level 3 of the five levels of supervised EPAs. This accuracy rate can be further explained by a recognition accuracy rate of 56% and a skills accuracy rate of 58%. Causes of error during specimen collection include collecting samples without following the order of procedures for test tube specimen collection, erroneous selection of collection containers, blood sampling exceeding one minute, and taking more than one minute to apply a tourniquet. Given these issues, there is good reason for the application of EPAs to raise the accuracy of specimen collection among first-year professional nurses.

Summary of Work: (1) Leverage EPA curricula to design trainings for specimen collection. (2) Establish a process for auditing operating procedures for specimen collections. (3) Utilize teaching aids and incorporate role-playing in the design of lesson plans for specimen collection training. (4) Leverage the flipped-classroom model to change and improve from internalized passive behavior in specimen collection recognition and skills.

Summary of Results: 1. Recognition accuracy rate in specimen collection reached 100%. 2. Skills accuracy rate in specimen collection reached 100%. 3. Of the five levels of supervised EPAs, 100% were at Level 4. 4. Satisfaction rating for specimen collection courses was 4.75 out of 5.

Discussion and Conclusions: The aims of this study were to increase the accuracy of sample collection for first-year professional nurses using EPAs. Through the implementation of various innovative improvement measures, the accuracy of sample collection as well as the levels of EPA supervision and satisfaction rose significantly.

Take-home Messages: Learners can set goals for self-improvement and progress. Teachers can provide personalized guidance with immediate feedback based on the overall performance of each learner, thereby helping learners become trusted independent professional nurses when performing their duties, strengthen their critical thinking skills.
#EPOD-CS: Curriculum Strategies

#EPOD-CS8  Orientation Meetings for the Faculty of Elective Courses at Yeditepe University Faculty of Medicine (9791)

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ABSTRACT:

Background: Elective Courses Program (ECP) started in 2016 with four courses for first year students and continues with 23 courses for the first 3 preclinical years. Most of the courses are held by faculty from schools other than Medicine like Fine Arts, Business Administration and Economics, Communication, Law, etc. Due to the high variance of the backgrounds of the faculty as well as the specific regulations and operations of the Faculty of Medicine (FoM), there is a need for orientation of the ECP faculty.

Summary of Work: ECP Orientation meetings (ECP-OM) are held each year before the start of the courses and aim to inform faculty about the aim of ECP, academic calendar, pass / fail conditions and gradings, documentation and forms recommended and used, student orientation meetings, the contact information, the student feedbacks of the previous year, as well as to gather the necessary information needed for the preparations of the ECP. The meeting is organized by the ECP coordinator and lead by the Dean. The Vice-Dean, Head-coordinator of medical education, phase coordinators, heads of educational committees are among the other participants. The meetings were held face-to-face but due to COVID-19 pandemic it was organized online this year and the documents and forms were sent digitally.

Summary of Results: ECP-OM help the faculty to adjust their own fields content to ECPs aim and scope. The faculty members express their satisfaction with the meetings and tell they feel supported and more confident. Also, the student feedbacks showed improvement with the implementation of ECP-OM.

Discussion and Conclusions: The content depth of each course, balance in student workload, and fair approach in the assessment of different courses have a crucial effect on student choices and satisfaction. ECP-OM can improve the fairness of the program, and it can contribute to Quality Assurance.

Take-home Messages: ECP-OM are important especially in institutions where the courses are led by faculty from outer resources and contribute to satisfaction of all parts.
AUTHOR(S):
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ABSTRACT:
Background: Student selected components (SSCs) play a vital role in undergraduate medical curricula in all UK medical schools, and to a limited extent worldwide. They allow students to focus on specific interests, explore new disciplines and develop essential skills for future medical practice.

Summary of Work: Student SSC experiences and research from the literature were collated as part of a 5-week SSC at the University of Glasgow. A practical guide was generated from these resources, aimed at helping students and staff make the most of SSC projects and maximise the benefits they afford. Following academic scrutiny, the guide has been widely distributed within the medical school to positive feedback, including being housed on the school learning and teaching platform.

Summary of Results: Key points and recommendations identified include: • Students should develop a personalised action plan, considering realistic project goals and discussing with tutors relevant background reading. • Students should adopt a proactive approach to their learning and take responsibility for managing the SSC themselves. • Regular communication with supervisors is vital to track progress and resolve any issues rapidly. Students should acquire feedback throughout the project and conduct an appraisal of performance after completion, including identification of learning points. • Where appropriate, students should share valuable findings in formats such as publications, posters or audits. These avenues further develop the student learning experience, whilst also adding to the medical literature and improving clinical practice.

Discussion and Conclusions: As highlighted in the guide, essential considerations before embarking on any SSC involve taking the time to make an informed choice, anticipating specific project requirements and preparing accordingly. Self-directed student learning is crucial, alongside frequent correspondence with tutors. Reflecting on what went well and what could have been done differently is essential to capitalise on experiences and improve overall learning. Further options after submitting summative reports should be encouraged, including potential dissemination and publication.

Take-home Messages: Students and tutors should follow a clear plan of action throughout SSC modules, enabling opportunities to be capitalised on, helping to avoid common pitfalls and making these invaluable curricular experiences as worthwhile as possible.
#EPOD-CS: Curriculum Strategies

**#EPOD-CS10**  effectiveness of an internal review process on preclinical curriculum summative assessments: A multicampus medical school experience (8767)

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**ABSTRACT:**
**Background:** The preclinical curriculum at the University of Illinois College of Medicine involves organ system-based instruction on three campuses with identical learning objectives, weekly quizzes and high-stakes, proctored final exams. The purpose of this study was to evaluate the impact of a formal review process, conducted by an internal assessment review team, on psychometric characteristics of multiple-choice questions (MCQs) used in summative final assessments in preclinical years.

**Summary of Work:** A four-member team, consisting of two to three basic science faculty and one to two clinical faculty, reviewed summative final assessments administered in 2019 to first- and second-year students at the University of Illinois College of Medicine. The team selected low performing items out of 100 MCQs for review based on psychometric data (discrimination index < 0.2, difficulty < 0.91). The team followed the guidelines of the National Board of Medical Examiners to identify item flaws. Within 30 days, the team provided feedback and recommendations to the item writers for revision or replacement for inclusion in future exams. The psychometric data of 2019 and 2020 final exams were compared to evaluate the effect of the formal item review process. Data were analyzed by unpaired two-tailed t-tests.

**Summary of Results:** Discrimination index of reviewed items significantly increased following a formal internal review of the first year [0.13 ± 0.01 vs 0.21 ± 0.02, t(26)=2.68; p <0.05] and second year final exams [0.13 ± 0.01 vs 0.18 ± 0.02, t(40)=2.36; p < 0.05]. The number of highest performing items (item difficulty: 0.45-0.75, discrimination index > 0.2) increased following the review process.

**Discussion and Conclusions:** The present study provides evidence that an internal formal review process improves the quality of MCQs of summative final assessments used in preclinical years of a multicampus medical school. The results of this study were comparable to previous reports where review processes were performed by external consultants.

**Take-home Messages:** Adopting an internal review process can be a rapid and efficient way of generating MCQs that meet quality standards for in-house summative assessments.
**#EPOD-CEE: Curriculum - Education Environment**

**#EPOD-CEE1 Perceptions of the Learning Environment Amongst Healthcare Students with Disabilities (8974)**

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**ABSTRACT:**

**Background:** Stringent entry requirements and the fast-paced working environment at university creates a barrier for entry, progression and high attainment for students with disabilities. Research in UK higher education reports that students with disabilities have higher non-continuation rates and are less likely to be awarded higher degree classifications than students without disabilities.

**Summary of Work:** This work derives from a larger study which aims to explore the attainment gap that exists amongst healthcare students. The perceptions of the learning environment for healthcare students with disabilities and how different identity factors contribute to the experiences of students with disabilities were explored. 498 survey responses from students on pre-registration healthcare programmes in Dentistry, Dietetics, Medicine, Midwifery, Nursing, Pharmacy and Physiotherapy from a large London university were collected and analysed using chi-squared tests on SPSS.

**Summary of Results:** 16.9% (n= 84) of respondents disclosed having a long-term illness or disability. Of the participants who have declared their disabilities, 51.4% agreed that their disabilities have negatively impacted their learning at university whereas 49.0% agreed that their disabilities have negatively impacted their learning on clinical placement. Students with disabilities were less likely to feel comfortable interacting with their personal tutors and lecturers (p<0.001) and were less likely to feel comfortable interacting with their peers (p<0.05). In addition, students with disabilities were more likely to limit their self-expression at both university (p=0.001) and when on clinical placement (p<0.05). Students with disabilities were also less likely to experience a welcoming environment, both at university (p<0.001) and when on clinical placement (p<0.05).

**Discussion and Conclusions:** The detachment felt by students with disabilities may deter them from seeking support. This explains why disabilities are often underreported amongst healthcare students. Some disabilities are poorly accommodated by the clinical environment, posing significant difficulties in progression. Learning disabilities can be less apparent, yet still have a profound influence on attainment and these students cannot be helped without disclosure of their condition.

**Take-home Messages:** Poorer attainment amongst students with disabilities is likely due to a mix of non-accommodating learning environments as well as lower levels of confidence which impacts their self-expression and relationships with others. This forms a barrier in them accessing help.
#EPOD-CEE: Curriculum - Education Environment

#EPOD-CEE2 What works in the clinical learning environment during the Covid-19 pandemic? A participatory action research project to enhance the engagement of Medical Students in Obstetrics and Gynaecology (O&G) (7675)

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Bryony Jones, Clinical Placement Lead, UK

ABSTRACT:
Background: Education in a clinical environment has been researched and established as a fundamental environment for learning. In 2018/19 over 900 medical students attended the Imperial College NHS Trust for clinical placements including medical students in their fifth year who complete a series of specialty attachments across the Trust including a seven-week Obstetrics and Gynaecology (O&G) placement. Considering, the vast number of students attending the trust, the busy nature of the O&G attachment and significant changes secondary to Covid-19 it is essential to promote the engagement of students in their placement.

Summary of Work: A weekly focus group was carried out between year 5 medical students and their clinical teaching fellow over the course of a seven-week rotation in O&G at Queen Charlotte and Chelsea Hospital. The aim of the focus group was to explore the students experience and perceptions of their O&G placement during Covid-19 using a participatory action research design. This method is akin to the emancipatory-critical research paradigm which allows researchers and participants to reflect together and change their practices. Each focus group utilised a topic guide to explore the students perceptions including questions on clinical teaching experience and barriers to effective education.

Summary of Results: The key findings of the study demonstrate that the students were engaged in their clinical placement enabling them to have an educational and enjoyable placement in obstetrics and gynaecology during the Covid-19 pandemic. However, there are evident barriers such as reduced exposure to patient and doctor interaction in remote clinics and confusion amongst staff regarding students attendance on placement during Covid-19. Through exploratory focus groups and action research methodology these barriers were omitted leading to important changes in the delivery of the placement and in the confidence of the medical students.

Discussion and Conclusions: By reflecting on the experiences of medical students completing a 7-week attachment in obstetrics and gynaecology during the Covid-19 pandemic, both students and clinical educators are able to take a joint approach to adapt the delivery and design of the placement.

Take-home Messages: An ongoing conversation between clinical placement leads, teaching fellows and students should be nurtured to pursue a supportive learning environment and promote engagement in placements.
#EPOD-CEE: Curriculum - Education Environment

#EPOD-CEE3 How can clinical supervisors affect the workplace learning environment for medical students to minimise the effect of hierarchy on learning? (9528)

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ABSTRACT:
Background: Hierarchy has long existed in the medical world and is a part of the workplace culture and hidden curriculum of medical school. Research has shown the negative effects of hierarchy on student learning including students hiding what they don’t know, not asking questions and avoiding clinical placements altogether. There is little evidence on how clinical supervisors themselves perceive hierarchy in education and how much of an impact it has on their teaching.

Summary of Work: This research aimed to look into the perspectives of clinical supervisors on hierarchy, how it affects their teaching and how the effects of hierarchy can be reduced in student learning on placement. The qualitative study used online focus groups to discuss perspectives on hierarchy, role-modelling and workplace learning. Active clinical supervisors from Queen Mary University of London with at least 2 years clinical teaching experience in either a primary or secondary care setting were invited to participate. The recorded, transcribed and anonymised data was analysed using thematic analyses to elicit key themes.

Summary of Results: Preliminary results describe how supervisors perceive hierarchy in the teaching environment and how it affects their students learning. Supervisors commented on how hierarchy can sometimes be helpful in learning as well as how supervisors can make the workplace environment a better environment for learning whilst students navigate the hierarchy.

Discussion and Conclusions: Findings were interpreted with reference to the current literature focusing on clinical educators perspectives. We gained an understanding of how clinical supervisors perceive hierarchy, experience of hierarchy they may have in their teaching and how any effects of hierarchy in a workplace learning environment could be minimised for medical students.

Take-home Messages: The study suggests that hierarchy continues to effect medical student learning however there is little research on clinical supervisors perspectives. A good supervisor and supervisee relationship between clinical teacher and medical student is essential in order to allow for the maximum learning experiences for the student. Future research might explore solutions to the ongoing problem of hierarchy and benefit both medical students and their teachers in the future.
AUTHOR(S): Brandon Moritz, University of Oklahoma College of Medicine, USA*

ABSTRACT:
Background: The University of Oklahoma College of Medicine (OUCOM) developed two longitudinal Community Health (CH) electives that allow medical students to volunteer in medically underserved areas (MUAs) during the first 3 years of training in an effort to develop a greater understanding of medically underserved populations (MUPs), promote greater empathy for MUPs, cultivate an interest in Primary Care, and strengthen a desire to serve MUPs long-term. Students volunteered 80 hours in 15 charitable clinics in OKC, 8 hours with different nonprofits in MUAs, and 12 hours in several community-based, preventative health initiatives. This study evaluated the effectiveness of the CH electives in accomplishing these four course objectives.

Summary of Work: Fifty 4th year medical students from the Class of 2021 OUCOM completed a survey assessing the impact of their experiences completing the CH electives on 8 metrics. Only 42 students answered all survey questions. This survey used a five-point Likert Scale (Strongly Disagree to Strongly Agree). Qualitatively, students were asked to describe their experience completing the electives.

Summary of Results: Of the 42 research participants, 100% reported increased empathy for MUPs, 95% reported increased understanding of challenges facing MUPs, 91% reported increased understanding of challenges facing physicians working with MUPs, 86% reported increased interest in working with MUPs, and 52% reported increased interest in Primary Care. The most common words used to describe the course were eye-opening, rewarding, and impactful.

Discussion and Conclusions: The CH electives serve as an innovative strategy to increase student empathy for MUPs, increase understanding of challenges facing MUPs and the physicians that work with them, and increase interest in working with MUPs. A reduced percentage of students reported increased interest in Primary Care when compared to the other survey metrics. More investigation is required to further assess this finding.

Take-home Messages: The CH electives serve as an education-based strategy to increase student empathy for MUPs, increase understanding of challenges facing MUPs and the physicians that work with them, and increase interest in working with MUPs and Primary Care. OUCOMs longitudinal CH electives are unique when compared to other medical schools curricula and have potential to serve as a model for other programs around the country.
The association between social capital and succeeding academic performance: A multilevel analysis (8752)

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ABSTRACT:
Background: Previous studies have suggested that the educational environment is a crucial element for the quality of medical education. The present study aims to apply multilevel analysis to examine the association between students' individual- and group-level social capital and their academic performance.

Summary of Work: The study sample consisted of 146 second-year medical students attending Tokyo Medical and Dental University in 2019 and 2020. Students answered questionnaires about the class's social capital before and after the human anatomy class from Apr to July. Students were assigned to the groups, where they studied and conducted dissection throughout the human anatomy class. We used four questions to assess individual-level social capital. The academic performance was assessed by a final exam in the human anatomy class. The data was treated as having three levels of structure: student, the group for dissection, and year. Multilevel linear regression analysis was used to assess the association between social capital and students' test score with a maximum possible score of 100 points.

Summary of Results: The intraclass correlation coefficient at the student level for the null model was 0.09 (95% CI 0.013, 0.43). The model comparison based on model fit showed the highest fit of the random coefficient and random slope model with data. Whereas individual-level social capital showed no apparent association with the human anatomy test scores (coefficient = 1.4, 95% CI -4.7 to 7.5), a one-unit increase in the group-level social capital was associated with a 9.5 unit increase in the test score holding sex constant. (coefficient = 9.5, 95% CI 3.4 to 15.7).

Discussion and Conclusions: Our result suggests that social capital at the group level of dissection class appears to be positively associated with members' academic performance even after accounting for individual-level social capital and sex. The social capital theory may explain this observation that high group-level social capital can create social contagion of behavior, which may include learning.

Take-home Messages: The finding may underscore the need to pay attention not only to the curricula of undergraduate education but also to the development of social relationships in learning in order to create a nurturing environment for students.
ABSTRACT:
Background: happiness is a state of contentment and satisfaction with life. It is synonymous of subjective well-being and can be influenced by some variables, including age. It consists of the intertwining of positive emotions, engagement, achievement, purpose and positive relationships. Happiness must be built through positivity, which in turn stimulates motivation, creativity, resilience and productivity, consequently leading to professional success, assigning value and purpose to work. The happiest people have the best jobs, the best salaries and the best relationships.

Summary of Work: we performed a cross-sectional study, aimed to assess happiness scores of 229 university teachers from a Brazilian university (UNIFAA - Centro Universitario de Valença) and factors that could influence in the scores of happiness, as resilience, measured with Brief Resilience Scale, social demographic and academic characteristics that included questions about perception and satisfaction with the teaching environment.

Summary of Results: The response rate was 65%. Teachers born from 1930 to 1960 (n = 19) had higher scores in the perception of happiness (p = 0.03) and quality of life (p = 0.01) associated with higher scores in satisfaction of their position in life (p = 0.04) and with the student-teacher relationship (p = 0.006).

Teachers with higher academic degree had higher resilience scores (p = 0.023), better perception of serenity (p = 0.03), perseverance (p = 0.025) and classified themselves as proud to be teacher (p = 0.014). More experienced teachers (more than ten years) had higher scores of happiness (p = 0.017) and resilience (p = 0.005) and perceived themselves as prouder to be teacher (p = 0.006) feeling satisfied with the student-teacher relationship (p = 0.03).

Discussion and Conclusions: teachers with higher academic degrees have greater resilience. The teachers born from 1930 to 1960 and with longer teaching experience, perceived better their happiness, quality of life and demonstrated greater satisfaction in the student relationship.

Take-home Messages: Investing in academic qualifications by the teacher would increase individual happiness and job satisfaction. Teacher satisfaction in the educational environment positively impacts the quality of life and the students happiness.
An analysis of the effect of educational environment on burnout: A cross-sectional observational study of trainee doctors at the Malta Foundation Programme (9615)

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**ABSTRACT:**

**Background:** A suboptimal educational environment has been associated with effects on both patient care and trainee wellbeing. Burnout is associated with negative effects at both the personal and the institutional level. The role of the educational environment in the development of burnout has been studied in many countries. This is the first such study in a Maltese population.

**Summary of Work:** The aim of this study was to analyse the effect of the educational environment on the prevalence of burnout among doctors within the Malta Foundation Programme. A cross-sectional observational methodology using Google Forms was adopted. The questionnaire was distributed to all Foundation and Extended Foundation doctors. The Postgraduate Hospital Educational Environment Measure (PHEEM) was used to assess the educational environment as perceived by the Foundation doctors. The Copenhagen Burnout Inventory (CBI) was used to analyse burnout among Foundation doctors. SPSS v25.0 was used for statistical analysis using a threshold for statistical significance of \( p < 0.05 \) and 95\% confidence interval.

**Summary of Results:** Both PHEEM and CBI showed good reliability scores. The educational environment was deemed as more positive than negative with ample room for improvement. High burnout rates were recorded. There was a highly significant negative correlation between autonomy, teaching and social support, and personal, work-related and client-related burnout. The results show that there is a significant association between the learning environment and burnout.

**Discussion and Conclusions:** The high level of burnout identified is a cause for concern and calls for action aimed at improving the wellbeing of these young doctors. An improved educational environment can improve the quality and safety of patient care, as well as improve the mental and physical health of the trainees.

**Take-home Messages:** There is a significant correlation between the educational environment and burnout. A high level of burnout has been identified. An improved educational environment can improve the quality and safety of patient care, as well as improve the mental and physical health of the trainees.
ABSTRACT:
Background: The clinical learning environment (CLE) is important for students learning. It involves areas where students apply theory to practice and is shaped by interactions between stakeholder groups and organizational structures. Health professions students have high levels of stress and anxiety in the CLE, which may affect performance and wellbeing. To better support students learning and supervision, this study aimed to describe and compare students perceptions of the CLE across study programs and earlier and later semesters.

Summary of Work: A prospective cross-sectional study carried out between 2018-2019. The data were collected by electronic survey comprising sociodemographic data and the Undergraduate Clinical Education Environment Measure (UCEEM). A total of 208 students responded, which corresponds to a response rate of 48%.

Summary of Results: The mean UCEEM score for all students was 103.8 (range 39 -130). The medical students rated significantly lower (p<0.001) than other students. The scores did not differ between genders and variations between earlier and later semesters did not follow a consistent pattern across the programs. The subscales of Social participation and Equal treatment were rated high. The individual item Supervisors familiarity with the learning objectives yielded the greatest difference between the medical (mean 2.3), physiotherapy (4.4) and SPL students (mean 4.1).

Discussion and Conclusions: Students perceptions of the CLE were positive. An unanticipated finding was the differences between the programs. In order to help students to meet their learning needs and assess whether the tasks are relevant for them, supervisors need to know the learning outcomes. This seem to be particularly important for medical students who traditionally have short clinical placements with an array of clinical supervisors and, therefore, often lacks continuity.

Take-home Messages: The medical students provided significantly lower ratings of their CLE than physiotherapy and SLP students, which underscore the need to review the conditions for supervision of medical students.
#EPOD-CEE: Curriculum - Education Environment

#EPOD-CEE9  Learning by discovery (8677)

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ABSTRACT:
Background: Clinical learning environment involves an interactive network of forces in the clinical setting, that guide the students clinical learning outcomes. It not only imparts medical knowledge but also helps in development of interpersonal skills, multidisciplinary patient-centred care and clinical attitudes. Covid-19 has affected medical education particularly bedside teaching and exposure to clinical environment. Therefore, alternative methods such as virtual ward rounds and simulated bedside teaching are employed to continue clinical education. However, acclimatisation to clinical environment which is an important part of clinical teaching is challenging to mimic virtually.

Summary of Work: We suggest utilisation of online interactive quizzes to let students explore and recognise individual aspects of clinical environment. This will include recognising different healthcare worker uniforms, nurses station, treatment room, equipments and safety signs using pictures and videos. This will help students orient themselves to different clinical areas and recognise workforce involved.

Summary of Results: These quizzes will be rolled out to first- and second-year medical students to help them acclimatise to clinical environment during Covid-19 times where clinical exposure has been reduced. Feedback will be collected post blocks to evaluate learning.

Discussion and Conclusions: Orientation to clinical environment is an important part of clinical education and helps develop good clinical attitudes. It helps students gain confidence and identify good clinical behaviours to improve practice. Limited clinical exposure during Covid-19 pandemic for medical students has hindered clinical learning. With adaptation to virtual and simulated bedside teaching its also essential to develop teaching methods that help student discover and acclimatise to clinical environment. Utilisation of interactive quizzes will facilitate self-reflection, identify gaps and help recognise clinical areas thus promoting experiential learning in safe environment.

Take-home Messages: 1) Virtual clinical education has several limitations particularly mimicking clinical environment. 2) Acclimatising students to clinical environment is an essential part of clinical education. 3) Utilisation of online interactive quizzes will help students discover different aspects of clinical environment by promoting experiential learning and improving clinical attitudes.
Utilizing patient histories to elucidate social determinants of medication adherence to reduce health disparities in epilepsy

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ABSTRACT:
Background: According to the Centers for Disease Control, approximately 3.4 million Americans are afflicted with epilepsy. The National Health Interview Survey revealed that 76% of adults with recent seizures do not take anti-seizure medications. Additionally, 26% of patients on anti-seizure medications had not seen a neurologist within the past year.

Summary of Work: We performed a literature review to determine if any factors are associated with medication non-adherence.

Summary of Results: Studies demonstrate that social determinants of health affect medication adherence. Social determinants of health are defined as social, economic, and environmental conditions that interact with biological factors to influence health-related quality of life and disease outcomes. Low literacy, forgetfulness, lack of knowledge and information, lack of access to medication, inadequate health insurance coverage, poor social support, family instability, and homelessness are the most consistently reported factors to impact medication adherence. Studies indicate that epilepsy disproportionately affects individuals with lower socioeconomic status. In adults with childhood-onset epilepsy, better control of seizure course was associated with greater employment rates, higher education, and ability to drive, which, in turn, contribute to greater access to healthcare and improved quality of life. As poor seizure control results in more emergency department visits and utilization of acute resources, addressing the social determinants of health contributing to improved seizure control can potentially reduce the immense public health cost burden of managing epilepsy.

Discussion and Conclusions: In order to address the social determinants of health associated with epilepsy, primary care providers and neurologists can educate junior physicians on taking detailed social histories with a focus on the environmental context in which patients live. By developing a better understanding of social factors contributing to poor health outcomes, a multi-disciplinary approach to managing epilepsy can be implemented with collaborations between social workers, psychiatrists, neurologists, and primary care providers to bridge the gap in health disparities. Patient education about anti-seizure medicines, their adverse effects, and importance of compliance provided by interprofessional teams can potentially improve anti-seizure medication adherence.

Take-home Messages: Detailed histories can reveal social factors impacting anti-seizure medication adherence. An interprofessional approach to managing epilepsy can reduce health disparities by addressing the social determinants of health associated with medication non-compliance.
The Reporting of Race and Ethnicity in Surgery Literature (9686)

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ABSTRACT:
Background: The reporting of race among scientific study subjects provides transparency to the representativeness of data and helps inform healthcare disparities. The International Committee of Medical Journal Editors (ICMJE) has developed clear guidelines promoting the reporting of race, however, the frequency of reporting continues to be low among most medical journals. The goal of our study is to assess the frequency as well as quality of study subject race reporting among publications from high impact surgical journals.

Summary of Work: A focused literature review was performed examining all human-based original research articles published in 2019 from seven general surgery journals (JAMA Surgery, Journal of the American College of Surgery, Annals of Surgery, Surgery, American Journal of Surgery, Journal of Surgical Research and Journal of Surgical Education). The five journals which stated they are following the ICMJE recommendations (ICMJE+) were analyzed against the two journals that did not state whether they follow the ICMJE recommendations (non-ICMJE). The frequency and quality of race reporting of study subjects is described.

Summary of Results: A total of 2485 publications were included in the study. Of these, 84.2% reported subject demographics, however, only 32.5% included the race and/or ethnicity of the study subjects. The reporting of race in publications of ICMJE+ versus non-ICMJE journals was 32.8% and 32.0% respectively (p = 0.753). Adherence to ICMJE recommendations for quality reporting of race was more frequent in ICMJE+ journals than non-ICMJE journals (69.5% versus 26.8% respectively, p < 0.001).

Discussion and Conclusions: The frequency of study subject race reporting among surgical journals is low. A journal's statement of adherence to ICMJE recommendations did not affect the frequency of race reporting, however there was an increase in the use of ICMJE quality metrics in race reporting.

Take-home Messages: The awareness of the reporting of race and/or ethnicity of study subjects should be addressed to help increase frequency in surgical publications. When research has a focus on race and/or ethnicity, adherence to ICMJE recommendations on quality reporting should be observed.
#EPOD-DIV: Diversity

#EPOD-DIV3  Student Perspectives on Barriers to Raising Equality and Diversity Concerns (8656)

AUTHOR(S):
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ABSTRACT:
Background: Students with protected characteristics are more likely to experience and/or witness inappropriate behavior and mistreatment. A successful raising concerns process increases awareness of where change is needed to make continuous improvements to medical programmes, to truly achieve excellence in ED&I. Research evidence suggests that barriers to reporting include lack of trust that complaints will be taken seriously or that students may be ostracised or suffer educationally as a result. This student-led research conducted at a UK medical school aims to explore the barriers affecting students when deciding whether to raise concerns.

Summary of Work: A questionnaire has been developed based upon validated, existent research in order to explore factors affecting students decisions about raising concerns. Questions were designed to both evaluate student perceptions of current processes as well as analyse barriers to reporting. Qualitative questions were used to triangulate the quantitative data to allow students to elaborate on their decision making. The study was designed and tested by representatives across the medical school population including non-medic undergraduates and postgraduate students. The sections included demographics, perceptions of reporting processes, engagement and confidence in reporting, in addition to assessing students knowledge of current support.

Summary of Results: 50% of respondents were aware of the raising concerns process at the medical school, and only 35% were aware of how it works. 21.2% of students felt that they had received adequate teaching. However, 51% felt at least somewhat confident in raising a concern and 60% felt it would be taken seriously. Students of colour, identifying as female or LGBTQIA+ stated that their level of felt representation at the medical school affected their engagement with the raising concerns process.

Discussion and Conclusions: Education on the raising concerns process would be beneficial for student awareness and engagement. Felt representation is important to students of colour, identifying as female or LGBTQIA when considering raising a concern, this may reflect previous built-up mistrust. Systemic change is needed though our inclusivity program to develop trust and rebuild relationships.

Take-home Messages: The answers lie in holistic approaches to make students feel included, focusing on more support for students raising concerns and more training for students and faculty on ED&I.
#EPOD-DIV: Diversity

#EPOD-DIV4  Cervical Cancer isn’t Straight - Designing LGBTQ+ Teaching in the Medical Curriculum (8109)

AUTHOR(S):
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ABSTRACT:
Background: There are longstanding myths overshadowing the LGBTQ+ (Lesbian, Gay, Bisexual, Transgender, Queer) community within healthcare, which affect the care that healthcare professionals offer and the healthcare to which LGBTQ+ patients feel entitled. One such falsity is that queerness equates to less regular or even no attendance at routine cervical smear tests. There are many shortfalls in medical curricula, including that of comprehensive LGBTQ+ teaching. There remains work to do in ensuring undergraduate medical students are competent in treating the LGBTQ+ population.

Summary of Work: The project aimed to unpick the reasons why LGBTQ+ patients have not been accessing cervical smear testing at the same rates as their straight counterparts. This was achieved through a literature search looking at why LGBTQ+ patients may have been reluctant to access smear testing. Qualitative patient narratives were also explored to better understand patients experiences with healthcare professionals during smear testing. Using this data, a simulated patient workshop was created, which would allow students to explore the experiences of a trans man seeking smear testing.

Summary of Results: Based on the findings of the literature search, we developed a keynote lecture and a simulated patient workshop for 4th year medical students at the GKT (Guys, Kings and St Thomas) School of Medical Education.

Discussion and Conclusions: There is a distinct lack of LGBTQ+-specific teaching in medical curricula. In order to provide for the unique needs of the LGBTQ+ population, more must be done to broaden the scope of teaching offered to undergraduate medical students. One of the most effective ways of allowing students to develop culturally competent care through the use of simulated patients. Reflection is also an essential component of students learning in order to allow them to consider coping strategies when handling complex or unfamiliar cases.

Take-home Messages: There is no one-size-fits all quick fix to improving cervical cancer screening uptake in a community that struggles with health inequities as part of a systemic issue. By diversifying current curricula, there is hope to improve the health outcomes of marginalised populations.
ABSTRACT:
Background: There has been a growth of demand for healthcare professionals to develop skills to care for the LGBTQ+ community and raise awareness of related mental health. The medical curriculum should cover these important topics. Adolescents are a highly vulnerable group. There is a gap in the medical curriculum globally about the needs of LGBTQ+ patients, especially LGBTQ+ adolescents. Many qualified doctors lack vital knowledge, putting these patients at higher risk of suffering from poorer mental health outcomes. It is paramount for medical students to learn and understand these patients needs and act accordingly.

Summary of Work: Based on a review of literature and the syllabus at GKT School of Medical Education, a simulated patient scenario has been developed. The teaching session is designed to equip students with key knowledge about poor mental health within the LGBTQ+ adolescent population, whilst also giving them the opportunity to implement this into practice with a patient scenario.

Summary of Results: A teaching session has been designed for final-year medical students highlighting the importance of understanding the needs of LGBTQ+ adolescents with regards to their mental health. A patient scenario has been developed to challenge students to explore an adolescents identity crisis in a GP consultation, with an aim to develop clinical communication skills and awareness.

Discussion and Conclusions: Research shows that the LGBTQ+ adolescent population are at an increased risk of poor mental health. The medical curriculum is insufficient in preparing future doctors to effectively consult LGBTQ+ adolescent and identify signs of poor mental health. The teaching session is designed to increase inclusivity of the medical curriculum and nurture well informed future doctors. The LGBTQ+ community are an under-represented group with specific medical needs and therefore the curriculum must remove unconscious biases to progress towards a more equitable healthcare system.

Take-home Messages: Medical students need to be aware of the health disparities within the LGBTQ+ community and be competent to have open discussions with LGBTQ+ adolescents and those who question their identities, about potential mental health challenges. Educators must ensure the integration of LGBTQ+ themes throughout the curriculum.
AUTHOR(S):
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ABSTRACT:
Background: Gender reassignment is a protected characteristic as defined by the Equality Act 2010, yet 41% of transgender people feel health professionals poorly understand their health needs due to lack of education[1]. It is recognised that transgender individuals in the UK have significant fears of discrimination and stigmatisation which significantly affects their health outcomes[2]. The use of mannequins for the teaching of intimate examinations is common educational practice. However, we propose that unnecessary use of gender-specific pronouns to describe medical mannequins during teaching, creates unhelpful associations between physical anatomy and gender. This may in turn contribute towards unconscious bias and inequalities faced by transgender people in healthcare settings.

Summary of Work: Clinical skills sessions using mannequins with a penis or a vagina were arranged for undergraduate medical students to learn and practise their urethral catheterisation skills. The language used by the medical students and the educators was anonymously recorded by an observer in the room and divided into gender-specific pronouns, gender-neutral pronouns, and anatomical nouns. Results are currently pending; however, we hypothesise that most students and educators will use gender-specific pronouns to describe the mannequins. In addition, we hypothesise that students would use similar language to the educator in their session following the hidden curriculum. The sessions will be followed by debriefs explaining the purpose of data gathering, education on the topic and a questionnaire to understand more about each participant’s experience of transgender patients in health education.

Summary of Results: Results to be collected over February-May 2021.


Take-home Messages: Health inequality based on gender reassignment is indisputable[2] and the need for a more diversified curriculum has never been more urgent. As a healthcare community, we need to act to eliminate the subconscious biases around the concept of gender based on an individual's genitals and instead, focus on an individual's gender identity.
#EPOD-DIV: Diversity

#EPOD-DIV7 The Impact of Gender on Postgraduate Trainee Experiences in Psychiatry (9491)

AUTHOR(S):
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ABSTRACT:
Background: Women encounter various types of gender-based discrimination within their clinical, academic, and research experiences. In this study, we sought to understand how gender impacts residents training experiences. The methods used to explore this phenomenon were: 1) interviews with residents and 2) analyses of written comments received during clinical evaluations.

Summary of Work: All PGY2-5 residents (n=40) in McMaster University’s Postgraduate Psychiatry Training Program were invited to participate in semi-structured qualitative interviews. Interviews were transcribed and analyzed using thematic analysis. Qualitative content analysis was conducted on resident narrative comments to explore how gender impacts resident evaluations. Comments were rated using a previously validated tool (the McMaster Narrative Comment Rating System) and analyzed qualitatively for gender-related differences. This multi-method approach was leveraged to appreciate all facets of a trainee’s experiences in their simultaneous roles of clinician and learner.

Summary of Results: Five of 40 eligible psychiatry residents (four women and one man) consented to participate in an interview. Additionally, 13 of 40 residents (seven women, six men) consented to participate in the narrative comments portion of the study, resulting in 146 narrative comments for analysis. Participants identified numerous gender-related challenges encountered by women, including feeling the need to prove their competence and repercussions of challenging gender-stereotyped roles. Analysis of the narrative comments revealed that comments about men appeared to focus more on behaviours, while comments about women focused more on personality traits. This finding is supported by literature and illuminates how potential implicit gender biases may be present in narrative comments.

Discussion and Conclusions: While equal representation in terms of numbers is often cited as a metric to assess equity, the findings of this study note that balanced proportions alone do not equate to equity. Women trainees continue to experience gender-related differences that seem to be inherently woven into their experiences, which appear to be qualitatively different than that of men.

Take-home Messages: This study provides useful insights into potential biases that may exist and impact the academic and professional experiences of postgraduate trainees. This work highlights the need for gender-informed education for learners and their assessors, so as to better equip and support novice physicians in their training and subsequent careers.
#EPOD-DIV: Diversity

#EPOD-DIV8 Gender, duty hour, and well-being of trainees in department of internal medicine (9125)

AUTHOR(S):
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ABSTRACT:

Background: Female physicians accounted for around 25% of medicine work forces in Taiwan. In order to survive in highly competitive clinical setting, all physicians were expected to fully participate in clinical learning, and excel under high standards for best interests of patients. Anyhow, female physicians are usually regarded as less favorable in clinical settings for many reasons. Female physicians need to work harder to earn recognition. This study is therefore to aim the relationship of duty hour, well-being, and gender of trainees worked in department of internal medicine.

Summary of Work: We recruit trainees, including post-graduate year trainees, residents, and fellows worked in department of internal medicine. Study was conducted from March to June, 2020. We asked participants to record their jobs every 30 minutes for their regular work days and on duty shifts. All participants were required to report their jobs for consecutive eight days. We approached 60 subjects, and 30 completed eight day questionnaires. We utilized self-developed questionnaires to collect data. Key variables included demographic variables, reasons to study medicine, eight day duty hours, and well-being.

Summary of Results: There were 8 female physicians (30%), 10 were PGY physicians (33.3%), 14 were residents (46.7%), and mean age was 30.27 years old (SD 4.54). Total working hours for consecutive eight days were 80.35 hours (SD 14.26). Study results reported that participants worked average female physicians were more fatigue than male participants, participants who studied medicine for their personal interests reported lower fatigue. Multiple regression results suggested that gender, position (PGY, residents, and fellows), work load, and working hours associated significantly with well-being.

Discussion and Conclusions: Female physicians in clinical settings are expected to perform as good as male physicians. In order to do so, female physicians need to work harder than male physicians, and cause more fatigue in the department of internal medicine. We urge the reasonable duty hours in clinical setting regardless gender, and supply supports to female physicians.

Take-home Messages: 1. To provide better working environment for all physicians, duty hours should be regulated. 2. Equal working environment for female physicians is necessary.
#EPOD-EE: Ethics and Empathy

#EPOD-EE1 Human Rights for Medical Practitioners - a peer education approach to human rights and ethical principles education in medical curriculum (9455)

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ABSTRACT:

Background: We are living in an intersectional and complex world where health - as a fundamental human right - is dependent on a variety of underlying factors, including other rights. Hence, human rights education and medical ethics pedagogy is an essential block of medical education. The IFMSA developed a workshop, Human Rights for Medical Practitioners (HRMP), to equip medical students with knowledge, skills, and tools necessary to adopt human rights and ethics-based approaches to clinical settings and their everyday life.

Summary of Work: The workshop is based on a peer-to-peer approach and interactive exercises. Each workshop is themed to address human rights and ethical perspectives pertaining to specific issues that can occur in clinical settings or have a strong relevance to the participants future role as physicians. A variety of learning methodologies are used, including: presentations, interactive sessions, case studies, theatre-based learning, simulations, role-play, debates, and group discussions.

Summary of Results: The workshop was first conducted in Stockholm in 2015 and has since been delivered a total of 14 times in 12 different countries, building the capacity of more than 200 medical students brought together from different backgrounds. The workshop takes place over 3-4 days with a total workload of 24-32 hours. Various themes have been discussed including: stigma and discrimination in healthcare, gender-based violence, childrens health and rights, politics and health among others.

Discussion and Conclusions: The HRMP has offered a safe space to medical students to discuss and understand the complex and intertwined nature of human rights and medical ethics, building their capacity to apply a human rights-based approach into their medical practice.

Take-home Messages: Strengthening future physicians commitment towards rights-based and ethical practice is a cornerstone towards a culture of human rights, where the highest standard of health is fulfilled as a human right and underpinned by the fullest respect of other rights. Hence, medical students need knowledge, tools and skills to integrate human rights and medical ethics in clinical settings.
#EPOD-EE: Ethics and Empathy

#EPOD-EE2 Can we teach ethical decision making in emergency medicine via distant learning? A pandemic pilot (8462)

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Julius Richter, Charité Universitätsmedizin Berlin, Germany
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ABSTRACT:
Background: The coronavirus pandemic triggered numerous government responses, including social distancing and cancellation of onsite university courses. Ethical decision making in emergency situations is normally taught with simulation patients and small-group discussions embedded in the emergency medicine course in the tenth semester. A different format was needed.

Summary of Work: To replace our onsite module on ethical decision making in emergency medicine we developed an e-learning module consisting of a resuscitation case, with differing trigger questions and literature for self-study. Students were notified as to subgroup allocation asking them to read provided papers. Thereafter followed a Microsoft Teams seminar, beginning with a Forms questionnaire on prior experience in emergency medicine and ethical dilemmas. In this seminar, students discussed their questions in subgroups and developed a team product they then presented to and discussed with the other group. Another questionnaire on the students’ perception of emergency medicine and ethics education closed the session.

Summary of Results: According to the initial survey, 72% of 152 students had not witnessed or participated in a resuscitation. Most students have seen an advanced care directive before, but only half of them knew the abbreviation DNAR (do not attempt resuscitation). 53% of all students reported having seen an ethical dilemma during their studies. Results from the subgroup work varied from notes to extensive mindmaps. Discussion of the provided questions and literature was lively and needed little tutor guidance except for time management. 94% of the participating students deemed the topics (family presence during resuscitation and termination of therapy) relevant, 68% would retake the seminar.

Discussion and Conclusions: This module was readily embraced by students. Minor technical difficulties occurred in guiding participants into subgroup rooms. Students valued this module for enabling a safe space for their beliefs but missed interaction with simulation patients. Inclusion of simulation patients in online seminars should be studied. As with onsite seminars, available time was a concern.

Take-home Messages: Teaching ethics via online seminars is feasible and largely approved by students. Despite productive online discourses, this format should not be used as sole module under normal conditions since it lacks (simulation) patient interaction but could be a valuable addendum to live teaching.
ARTICLE:

#EPOD-EE: Ethics and Empathy

#EPOD-EE3 Art is powerful preventative medicine: The impact of cancer on art and society through the perspective of Robert Pope (9613)

AUTHOR(S):
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ABSTRACT:

Background: The practice of narrative writing in medicine is crucial for developing a more humane model of care, one that is based on empathy, reflection, and compassion. The benefits extend beyond patient care, it can improve the relationship between the physician and their peers, society, and self. I reflected on the work and life of Robert Pope with the aim of understanding the patients perspective through cancer diagnosis and treatment.

Summary of Work: I completed a literature search on Robert Pope: his life, his work and critical appraisals. My approach was as an outsider observer, with the simple aim to notice and reflect on key differences in his work pre cancer (before 1982) and post diagnosis, which came mostly in the form of his Illness and Healing series in 1991. The artwork was accessed through The Robert Pope Foundation

Summary of Results: The artwork portrayed themes of hope, power, religion, family, and medicine. As he continued treatment and experienced the side effects, his art began to show a loss of self and symbols of medicine as the antagonist as well as portrayed through other figures in his work showed the impact on relationships. He shows how relationships can become strained, the impact of the news of cancer and as the patient having to deal with how others processed that.

Discussion and Conclusions: Popes art urges physicians to have another look at the hospital setting through the eyes of a patient, who is afraid, feels alone and has lost hope. I learnt that, what I know to be physiologically beneficial for the patient, is not always the saviour in the eyes of the patient and we must be able to recognise patterns of loneliness, hopelessness, and fear. This is especially important in a multicultural setting such as London where with every patient we must understand the varying perceptions of the hierarchy of power, to ensure our patients are not afraid to discuss their concerns.

Take-home Messages: - The journey through cancer treatment involves more than just the patient. - Often for patients it is no longer about Do I or dont I have cancer? rather Do I feel good today?
#EPOD-INTG: International - Global Health

#EPOD-INTG1 A novel sexual health and reproductive rights curricular module for global medical education (9625)

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ABSTRACT:
Background: The ScholarRx global medical curriculum initiative aims to provide a framework to teach a holistic approach to medical education in the 21st century. To achieve this goal, ScholarRx established a consortium of international student organizations called MeSAGE - Medical Student Alliance for Global Education to create education modules (Bricks). MeSAGE Bricks are a viable tool to promote important global health topics and integrate them in a sustainable way into the medical curriculum. The first topic identified by MeSAGE was Sexual and Reproductive Health and Rights (SRHR).

Summary of Work: The topic of SRHR is not currently well addressed in standard undergraduate medical education. This was highlighted in the shared needs assessment that was conducted within MeSAGE in 2019. To address this gap, we recruited eight students from MeSAGE, representing Europe and the United States, to author the curricular content. These authors collaborated with the ScholarRx Editorial team, expert faculty and peer reviewers that provided support to ensure quality of the content.

Summary of Results: The bricks are self-contained, integrated modules consisting of learning objectives, illustrated narrative text, and interactive self-assessment items delivered through the ScholarRx platform. The published SRHR modules include: introduction to sexual and reproductive health and rights, sexual orientation, gender identity and expression, sexual function and satisfaction, taking a sexual history, family planning, preconception, safe abortion and gender-based violence. We will use a Kirkpatrick program evaluation model to measure student utilization and satisfaction (level 1 outcome) with the Bricks and report our findings.

Discussion and Conclusions: The modules on Sexual and Reproductive Health and Rights were developed according to the WHO guidelines on the topic. As the development of Bricks evolves, there will be opportunities to expand the collection to include more modules, as well as work with individual student organizations and medical schools to adapt the collection to fit their unique needs. The collection can assist in standardizing how these important topics are delivered to medical students across the world.

Take-home Messages: MeSAGE could serve as a model for a shared curricular ecosystem that can be implemented within medical schools across the globe, addressing important global health topics such as Sexual and Reproductive Health.
ABSTRACT:
Background: The rapid expansion and profound impact of the COVID-19 pandemic on all spheres of life demonstrate that our well-being depends on events and dynamics of a global nature. These challenges need to be tackled by a prepared global health workforce. However, sustainable and interdisciplinary courses on global health are scarce at German faculties. Many teaching programmes are based on voluntary initiatives of committed groups and individuals, mainly at a local level.

Summary of Work: To centralize local efforts, the interdisciplinary student network Global Health Network, coordinated by the Globalisation and Health Initiative (GandHI) and the Global Health Alliance Deutschland (GHA-D), initiated the first online lecture series Global Health - perspectives, opportunities and challenges. From November 2020 to January 2021, 14 lectures on various topics, such as migration, gender health and global health stakeholders were held. 1393 people registered for the series and an average of 400 participated in each lecture. Evaluations were performed before at the start of the series, midterm and after the series. Using a mixed method approach, acceptability, feasibility and learning outcomes for global health education were analysed.

Summary of Results: Participants were mainly female medical students between 20-25 years, but a variety of age groups, genders and backgrounds were present. Reasons for participation included interest in COVID-19-related developments, interest in learning about global health-specific topics and professional development. More than 40% of participants stated having only limited knowledge about global health at the beginning of the lecture series. Access and equity, climate change and environmental health, as well as infectious diseases and pandemics were among the most relevant global health topics to the participants.

Discussion and Conclusions: The lecture series demonstrated a great interest in global health topics among German students and highlighted the need to systematically integrate global health into the curricula of faculties.

Take-home Messages: - Medical students need and want to be enabled to tackle current global health-related challenges. - The lecture series demonstrated that online education is successful in improving students knowledge about global health and raises motivation for further engagement. - Global health education should not depend on volunteer student-led initiatives but needs to be systematically integrated into curricula.
#EPOD-INTG: International - Global Health

#EPOD-INTG3 Can virtual international exchanges enhance doctors’ knowledge and capabilities in global health? (9707)

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ABSTRACT:
Background: The COVID pandemic has highlighted how interconnected our world is and the importance of healthcare professionals having a good understanding of current and emerging global health threats and challenges. There is an urgent need for educators to review postgraduate training programmes to ensure that doctors have adequate global health knowledge and skills. The traditional approach to developing global health competencies was through overseas medical electives and exchanges, but these are likely to be limited for the foreseeable future and the opportunities were often best suited to junior doctors who had fewer work and family commitments. Virtual international exchanges may be a more practical alternative and offer an innovative approach to developing global health skills and competence.

Summary of Work: In Phase one we undertook a systematic literature review of Virtual International Exchanges and Collaborative Online International Learning with studies where participants were health care professionals or students. In Phase two we assessed GP trainees self rated competence in global health and their views on participating in virtual international exchanges.

Summary of Results: 11 key papers emerged from the literature review showing this is an under explored but promising pedagogical tool. Participants not only learnt about global health and health care systems, but also developed skills in reflective practice, communication and intercultural competence. >95% GP trainees agreed it was important to learn about global health and develop good intercultural competence. 75% thought that VIE could enhance GP training and 62% were personally interested in participating.

Discussion and Conclusions: GP trainees were enthusiastic about participating in VIEs. They hoped to improve their communication skills, gain a greater understanding of different cultures and health care systems and to be challenged to think about new ways of working themselves. A series of subsequent stakeholder meetings highlighted significant logistical challenges including: matching appropriate healthcare professionals from two very different health care structures, access to technology, time zones, different expectations, finances, staff availability in the midst of a pandemic.

Take-home Messages: Virtual international exchanges may offer an interesting approach to enhance doctors education and to develop sustainable links between primary care clinicians internationally. However, these need to be thought through carefully and the logistics are challenging.
ABSTRACT:

Background: The topic of global health (GH) in the medical curricula is still subjected to difficulties in implementation, despite the growing interconnectivity and the globalisation of health. Global health is crucial in pedagogy and development in the medical undergraduate curricula to understand the underlying social determinants of health. The peer-led online workshop called Finances in Global Health aimed to instill knowledge, tools and skills to understand the complex role of health financing towards the achievement of UHC.

Summary of Work: This peer-led initiative which consisted of six sessions of 3 hours each, made in a synchronous way which tackled the basics of health financing, health systems & UHC, health economics and policy, and sustainable financing. The methodology used to design sessions was the 4MAT learning style, which included presentations, case studies, simulations, group presentations and assignments. The participants were 20 medical students and the selection was gender and regionally diverse.

Summary of Results: The first version of the online workshop had a pre and post assessment to be able to measure the participants knowledge and skills acquired during the sessions. 18 out of 20 participants completed both. Participants showed statistically significant improvements in all 14 questions related to the sessions delivered in the course. 16 out 18 participants obtained a mark of over 75% in the post assessment. The questions that had a minor rate of assertiveness were what is health service rationing (47% correct answer) and what is the fiscal space of health (53% correct answer).

Discussion and Conclusions: This is the first workshop the IFMSA has developed on financing in global health. The characteristics of the workshop aims for reproducibility among our participants and their peers to continue developing their skills and knowledge in global health. In the context of the pandemic, the online format proved advantageous and accessible for its delivery.

Take-home Messages: Learning about finances in global health aims to teach students about the complexity of achieving UHC and the factors that play a role within all health systems. This knowledge provides a broader perspective about access to essential and quality healthcare without catastrophic results.
#EPOD-INTG: International - Global Health

#EPOD-INTG5 Peer-led Approach to Global Health education in Medical Students (9512)

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ABSTRACT:
Background: Health has many dimensions other than just the clinical skills taught in universities, and last year has further proved to us the importance of the political and diplomatic dimensions in global health; Medical students, the future global health workforce, receive very limited formal education regarding global health and the opportunities for them to engage are quite limited at a postgraduate level. IFMSA has taken to covering that needed knowledge through its non-formal education network.

Summary of Work: IFMSA Global Health Education is provided through non-formal/ peer-led training sessions composed of theory, practice, discussions, and simulations of WHO/UN meetings aiming at the empowerment of medical students to engage and take active roles in the implementation of global health on a national level. Since last November, a total of 8 training sessions of this kind have taken place online for participants, coming from all WHO Regions; A comprehensive post-training statistical analysis was conducted to measure the outcomes and evaluate the impact of the training sessions.

Summary of Results: 69 participants from 31 countries of WHO Regions filled the post-training evaluation form. Regarding participants perceptions, the improvement of knowledge in Global Health based on the sessions objectives and the relevancy of the sessions attended to their work as medical students in IFMSA, were each rated on average 4.5/5. Moreover, 78% of participants reported a satisfactory or very satisfactory level of engagement in the sessions concerning interaction and active participation

Discussion and Conclusions: Peer-led training sessions are a potent way to capacitate medical students on various global health-related topics. Medical students seek global health educational opportunities outside their formal curriculum, a fact which highlights both their interests and needs, concerning global health education.

Take-home Messages: Global health education is an essential component of comprehensive medical education. Peer-to-peer non-formal education is an efficient way to provide global health knowledge that is relevant to medical students and can readily complement the notions communicated in the formal curriculum.
ABSTRACT:

**Background:** The COVID-19 global pandemic has significantly impacted healthcare professions education on many levels. To date, there is limited understanding of how this pandemic impacts various aspects of learner education; including their emotions, learning activities, and career aspirations - in particular, from a global perspective.

**Summary of Work:** In the fall of 2020, 300 medical, dental, premedical college, and health sciences graduate students from 13 international universities participated in an online exchange program. The students originated from diverse countries in East/West Europe/Russia, South/East Asia, the Middle East, Sub-Saharan Africa, and the Americas. Over a period of 5 months they met virtually, in small groups of 3-5 and as a large cohort of 300 students, in structured faculty-guided and student-led discussion and networking groups. As a part of the program the students discussed the impact of the COVID-19 pandemic on their lives and education. A survey was sent to the students after their exchanges that included the following question: What did you learn from your interaction with your peers regarding the COVID-19 pandemic/global health issues? 227 students submitted their essays. Thematic coding of the submitted essays was performed using an inductive approach.

**Summary of Results:** The discussions resulted in a variety of themes centered on awareness of similarities and differences in healthcare systems, healthcare problems, and approaches to solutions of healthcare issues. Students learned about their peers academic lives during this time, and discussed differences in outlook regarding their professions caused by their pandemic experiences. They felt gratitude and appreciation for the situation in their home countries while feeling a sense of belonging to a global medical and health sciences community. The students appreciated the social connections and friendships that they developed online.

**Discussion and Conclusions:** International institution-led online platforms are beneficial during a global health crisis, and foster international understanding and global exchanges. Virtual engagement is an efficient format to include students from different parts of the world. Interprofessional networking supports the development of a sense of global community among the healthcare professions.

**Take-home Messages:** A global discussion platform can enrich students perspectives about healthcare during the pandemic, and supports the creation of a global community of healthcare professionals.
#EPOD-INTG: International - Global Health

#EPOD-INTG7 A Workshop on Social Accountability of Medical Schools at the University of Nairobi (9484)

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ABSTRACT:
Background: Medical schools should be accountable for the community's health outcomes. The values of quality, relevance, equity, partnerships, and efficiency are the pillars of an excellent medical school. Medical students are critical stakeholders because of their direct involvement in medical education and their potential as future medical educators. There has never been an awareness of the responsibility of students on the social accountability of medical schools. The workshop aimed to increase knowledge, build capacity and assess Social Accountability.

Summary of Work: Medical students were invited through students associations. The workshop consisted of two pedagogical elements that included didactic component and three group discussions. We used didactic sessions to increase students knowledge of Social Accountability. Participants would then apply the knowledge they gained to respond to three different case scenarios in four group discussions and later present their outcomes. Towards the end, students assessed the SA of their medical school using a scoring grid developed by IFMSA and THEnet. Students completed a pre-and post-workshop Survey to evaluate the effectiveness of the workshop. We also assessed qualitative data from the group discussions and the quantitative data from the scoring grid.

Summary of Results: A total of 42 medical students from the first to the sixth year participated in this workshop. Medical students showed an increase in knowledge in the concept of Social Accountability, its values and its importance promoting excellence in medical education. Medical Students also expressed an increased motivation to engage in all aspects of their medical education. The scoring grid had a range of 0-36 points, and the average score obtained was 17/36 (47.2%). From the group discussions, medical students identified Interprofessional Education, Quality assurance, Student-centred learning, Community-based learning, and Students involvement in the curriculum as potential solutions to enhance their medical schools Social Accountability.

Discussion and Conclusions: A seventeen score implies that the medical school has some social accountability strategies but has areas of weaknesses that require attention. Such capacity-building initiatives are a great way to empower students, elucidate gaps in medical education and advocate for the same.

Take-home Messages: Assessment of medical Schools Social Accountability should be a routine activity that involves feedback from medical students and faculty.
#EPOD-INTG: International - Global Health

#EPOD-INTG8 Virtual Semester for Medical Research Aachen (v-SEMERA) (9492)

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ABSTRACT:
**Background:** The COVID-19 pandemic has made it significantly difficult for students to study abroad, which can be determined by two factors: a) The widespread and extensive travel restrictions, the duration of which cannot yet be predicted. b) Many students and their families are in a financial emergency due to the economic crisis and are no longer able to finance a semester abroad. In cooperation with Centro Universitário Christus in Fortaleza, Brazil and Universidad Peruana Cayetano Heredia in Lima, Perú, an innovative, virtual semester for medical research was created: v-SEMERA. v-SEMERA, founded by the German Academic Exchange Service (DAAD) is open to students of all health professions worldwide, creating an international interdisciplinary academic learning environment, with components of blended mobility.

**Summary of Work:** v-SEMERA is based on four pillars: First, digital lectures in different settings (synchronous and asynchronous learning) focus on teaching scientific and soft skills in a medical context. Second, putting those skills to use, every participant chooses a scientific project to work on with a supervisor from a lab/institute/clinic at their home university, according to their research interests. Third, the intercultural social program includes virtual events for team-building and networking, allowing the students to experience internationalisation@home. Fourth, v-SEMERA offers keynotes by international experts on current global research questions made available to a large audience via livestream. v-SEMERA is a part-time program, to be completed parallel to the students own course of study, independently from time zones.

**Summary of Results:** Due to the COVID-19 outbreak, virtual academic exchange programs are a welcome solution closing the pandemic and financial gap for health professions students. v-SEMERA will start in summer 2021.

**Discussion and Conclusions:** v-SEMERA makes it possible to acquire new international collaborations and maintain existing ones. It serves to increase blended mobility, internationalisation@home for students as well as promote the internationalisation and digitalisation of medical teaching and international research collaborations.

**Take-home Messages:** The v-SEMERA project allows participating in a (virtual) research semester and offers an intercultural experience via modern technology.
#EPOD-INTG: International - Global Health

#EPOD-INTG9 Exploring the Relationship Between Foreign Language Anxiety and International Medical Students’ Academic Adaptation in China (8783)

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ABSTRACT:
Background: There is a growing trend of internationalization in the field of medical education, leading to an unprecedented increase of the number of students migrating to different countries. However, international medical students (IMSs) show lower academic performance compared with native students due to academic adaptation difficulty or language barrier. This research aims to figure out the relationship between foreign language anxiety and IMSs academic adaptation in China with the expectation of offering some insights for international medical education.

Summary of Work: The research comprised a two-phase explanatory sequential design. In the first phase, the questionnaire consisted of sociodemographic characteristics, academic adaptation scale and foreign language anxiety scale was distributed to IMSs in Peking University. In the second phase, online interviews were organised based on the data collected. Quantitative data have been analysed and qualitative data have been coded.

Summary of Results: 78 IMSs finally completed the questionnaire with the 92% response rate. The Cronbach α coefficient of the two sub-scales both reached 0.92. On the whole, IMSs academic adaptation and language anxiety were significantly positively correlated (r=0.52, P<0.01). Through Principal Component Analysis, challenges students met in academic adaptation could be generalized into four, namely maintaining relationships, finding appropriate learning methods, understanding the courses and obeying the rules. Four main sources of language anxiety extracted from the data were peer pressure, lack of confidence, learning concept and interpersonal relationships. Further correlation analysis showed that only peer pressure in language anxiety had significant correlation with maintaining relationships (r=0.35, p<0.01), finding appropriate learning methods (r=0.27, p=0.02) and understanding the courses (r=0.48, p<0.01) respectively. The most frequent themes emerged in interviews connected to language were keep thinking others speak Chinese better and fear of being laughed at.

Discussion and Conclusions: IMSs who experience high level of language anxiety are likely to have trouble with academic adaptation. The main cause of language anxiety is perceived peer pressure, which hinders IMSs communication with the local as well as learning experience. This may result in poor performance in academic adaptation, which in return intensifies peer pressure and thus language anxiety.

Take-home Messages: For IMSs, language anxiety is significantly correlated with academic adaptation difficulty mainly through perceived peer pressure concerning speaking Chinese.
#EPOD-IPE: Interprofessional Education

#EPOD-IPE1  Interprofessional attitude of 5th year physiotherapy students after exposure to interprofessional education and practice (9783)

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ABSTRACT:
Background: Due to the complexity of the health/disease process, the World Health Organization/WHO recommends the Interprofessional Work Model as a strategy to guarantee comprehensive health care assistance. The aim of this study is to identify the self-perception of physiotherapy students, before and after exposure to interprofessional practice in what concerns their interprofessional attitude.

Summary of Work: A longitudinal/prospective/analytical study was implemented with a 5th year entire class (n=21) at a public university, during their final professional year with supervised practice at the hospital and outpatient units. Students were integrated in a health service/unit where they were requested/encouraged to engage in collaborative interprofessional practice. This was their first experience integrating an interprofessional team. Their perception concerning interprofessional attitude was assessed using The Readiness for Interprofessional Learning Scale/RIPLS and The Interdisciplinary Education Perception Scale/IEPS, before and after the completion of their professional year. Data was analyzed using the Wilcoxon statistical test, considering significant values when p <0.05.

Summary of Results: As to quantitative data, positive results in the pre-exposure assessment were obtained in both scales, with all domains significantly improving in post-exposure (p<0.001), namely: Professional identity/RIPL, Professional competence/relationship with other professions/IEPS, Knowledge, capacity and self-confidence, Perception of ones profession regarding other professions and Perception of cooperation in the work environment. Concerning qualitative data, all students reported the main factor for improvement was the opportunity for interprofessional practice.

Discussion and Conclusions: Results suggest significant students higher perception regarding collaborative interprofessional attitude after one-year exposure to interprofessional practice. A crucial finding is the fact that students identified the interprofessional year as the key factor for improvement. They were clear when stating that although they were part of a curriculum advocating interprofessional education, the key factor for higher confidence, better professional identification and greater disposition for teamwork was interprofessional practice consolidating the real sense of acting in collaboration with different professionals, to provide comprehensive care.

Take-home Messages: Collaborative interprofessional practice appears to provide students greater confidence, higher professional identification and willingness for collaborative teamwork. Therefore, future training programs should increase the practical training component by integrating students during a full year in interprofessional teams.
#EPOD-IPE: Interprofessional Education

**#EPOD-IPE** Empathy, resilience and readiness for collaborative activities in interprofessional education in the health field (9324)

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**ABSTRACT:**

**Background:** Interprofessional Educations (IPE) is considered when two or more students learn from, each and other to ensure collaboration in healthcare. In Brazil, the project PET-Saude created by the Brazilian federal government is an interprofessional program aimed to provide experiences and practices of service-learning-community to health students, health professionals, and patients. Understanding that collaborative practices in health can develop job satisfaction, humanization, and improve patient safety, this study aimed to evaluate the impact in resilience, empathy and, readiness to interprofessional education.

**Summary of Work:** Health professions students of Valença College were invited to answer a socio-demographic questionnaire as well as the following instruments: Readiness Interprofessional Learning Scale (RIPLS), RS 14- Resilience, and Davis Multidimensional Reactivity Scale (EMRI). The data were analyzed using descriptive statistics, the Mann-Whitney U test, and the correlation coefficient of Spearman.

**Summary of Results:** Students that participated in the PET-Saude project have greater availability for interprofessional education, especially in the subdomain professional identity (22 vs 25; p=0.002). There is a positive correlation between availability for interprofessional learning and resilience (0,387; p=0.001), however the same was not found with empathy. Our study showed a positive impact of readiness to interprofessional education and resilience in those health students that participate in an Interprofessional Education Project (0,387; p=0.001).

**Discussion and Conclusions:** Correlating availability for interprofessional education with resilience and empathy, exposes factors that should be considered by colleges, for example: increasing the participation of students, teachers and health professionals in extension projects and/or research projects of horizontal shape; rethink the pedagogical projects of the course providing not only hard skills, but people skills with the same importance; develop teacher training to increase interaction between courses; institutional support to overcome the physical and human barriers that an institution may experience when implementing the IPE.

**Take-home Messages:** There is a need to increase dialogue in educational institutions on the education interprofessional, seeking learning methods for their implementation and the confrontation of the barriers that can challenge interprofessional education in health students.
#EPOD-IPE: Interprofessional Education

#EPOD-IPE3 Can an Online Psychotherapy Resource Enhance Inter-professional Education and Learning Satisfaction? (8461)

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ABSTRACT:
Background: There are few online opportunities for mental health practitioners (and students) to learn from one another in the area of psychotherapy education. We developed and offered an online psychotherapy resource for psychotherapist learners of differing backgrounds. We sought to determine if this resource could: 1/ Increase learner satisfaction. 2/ Enhance readiness and willingness to engage in interprofessional learning.

Summary of Work: We offered an online psychotherapy resource to 520 learners. These learners completed the Readiness of Inter-professional Learning Scale prior to completing the resource and were supposed to complete it after they finished the resource. They also completed a Learner Satisfaction Questionnaire.

Summary of Results: 19 learners partook in the study. Results from the Readiness for Interprofessional Learning Scale (RIPLS), indicated that the vast majority of learners felt that learning with other students would make them better members of the team and that patients would benefit from this. The majority also felt that clinical problem solving and communication skills would benefit from inter-professional learning. The respondents also felt that the resource was organized, had a logical flow, and was easy to navigate. However, despite numerous attempts at making the resource more interactive, there was no discussion or communication between any participants on the resource. As such, participants used the resource as independent learners and there was no degree of interprofessional communication or learning.

Discussion and Conclusions: The main conclusion is that an online resource has to be interactive enough for learners to learn from one another. Our resource did not achieve any degree of communication between learners. As such, they could not learn from one another and we could not evaluate our second variable—which is whether the resource enhanced willingness to engage in interprofessional learning. That said, they appeared ready to learn from one another and were satisfied with the resource itself.

Take-home Messages: Online learning can be satisfying for individual learners. However, in our case, we did not offer an online resource which resulted in a successful degree of interactivity amongst participants. As such we were unable to determine whether learners were ready and willing to interact with other professions during an online resource.
#EPOD-IPE: Interprofessional Education

**EPOD-IPE4 Teaching Without Risking: Using High-fidelity Simulation To Teach Interprofessional Care for a COVID-19 Case in a Tertiary Hospital in Taiwan (8906)**

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**ABSTRACT:**

**Background:** Due to the Coronavirus disease 2019 (COVID-19) pandemic, remote or simulation education has been widely adopted. At the end of September 2020, we conducted a high-fidelity simulation interprofessional education (IPE) based on a COVID-19 case in the Tri-Service General Hospital (TSGH) in Taipei, Taiwan. This study aims to analyze this IPE and provide insight for future simulation IPE curriculum design for such infectious disease.

**Summary of Work:** The interprofessional team led by the Emergency Department presented an experience of caring for a COVID-19 case: from the emergency visit, radiology examination, specimen collection to the quarantine hospitalization. The class featured for a scenario-simulated film, role-playing with a pre-writing script and interprofessional table exercise. The participants had to complete the pre-post test of the Interdisciplinary Education Perception Scale (IEPS) and a 5-question quiz. SPSS 20 is used for demographics, pair t-test and Wilcoxon sign rank test analysis. Professions, levels of the training, gender, previous IPE and clinical working experience were stratified for the outcome. The significance of 5% (p < 0.05) is adopted in this study.

**Summary of Results:** Totally 122 participants completed the test. Based on the Kirkpatrick model, the level 1, 2a and 2b outcome of the IPE showed great average satisfaction (9.46/10). The overall mean difference of the IEPS and quiz were 2.33 and 0.779, which also showed significant changes (improvement rate 3.6% and 24.1%, both p<0.01). After stratifying the demographics, the Physician profession, postgraduate worker, the female, previous IPE experience 1-3 times and clinical working experience 1 years had better IEPS improvement.

**Discussion and Conclusions:** This case study shows the effectiveness of high-fidelity simulation to teach interprofessional care for a COVID-19 case. The quality response from the audience also affirms its value. We should further promote high-fidelity simulation IPE to teach healthcare students about such contagious diseases as COVID-19.

**Take-home Messages:** The high-fidelity simulation IPE of a COVID-19 case in TSGH had a statistically significant positive impact on the audience. We should promote simulation as an important IPE method during the pandemic because it is an ideal and effective method without exposing students to a risky environment.
#EPOD-IPE: Interprofessional Education

#EPOD-IPE5 Pre- and post-workshop comparison of validated scale scores for interprofessional learning among medical, dental, and nursing students (8291)

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ABSTRACT:
Background: Interprofessional education (IPE) is essential for preparing healthcare students to collaborate effectively in a multidisciplinary team. To develop IPE programs that allow students from multiple disciplines to reach a sufficient level of collaboration, it is necessary to compare the outcomes of IPE across disciplines. In this study, we aimed to explore differences in outcomes of IPE among medical, dental, and nursing students by adopting the validated Japanese version of Readiness for Interprofessional Learning Scale (RIPLS).

Summary of Work: The study participants included medical, dental, and nursing students who had attended the yearly IPE workshops over two days and had completed the validated Japanese version of RIPLS just before and right after the workshops in 2019 and 2020 (n = 378). Paired t-test was used to assess the changes in the RIPLS scores after IPE in each discipline of students. Welch’s t-test was used to assess the differences between disciplines in the mean pre-test scores, the mean post-test scores, and the changes in the scores.

Summary of Results: In all the disciplines, the total RIPLS scores significantly increased after IPE. There were no significant differences in the changes in the total RIPLS scores across disciplines. The total RIPLS pre-test score of the medical students was significantly higher than that of the dental students (mean difference = 4.27; 95% CI 2.07 to 6.47). The total RIPLS post-test score of the medical students was significantly higher than that of the dental students (mean difference = 2.74; 95% CI 0.61 to 4.87). There were no significant differences between the medical students and the nursing students in the pre-test scores and the post-test scores, respectively.

Discussion and Conclusions: The scores of the dental students were lower than those of the medical and nursing students, and did not catch up after IPE. Further research is needed to maximize the effectiveness of the IPE program for students from all disciplines.

Take-home Messages: The positive impacts of IPE on dental students were relatively small, thus justifying further research to investigate the reasons.
**ABSTRACT:**

**Background:** We have previously built an interprofessional virtual patient (VP) model for students from different study programmes. We tested it as a replacement for real home visits for medical students in primary healthcare. Due to Covid-19 the students could have neither home visits nor physical group meetings. The aim of the present study was to investigate how this VP model could facilitate interprofessional learning with only medical students when working via an online communication tool (zoom).

**Summary of Work:** Medical students in their fifth semester worked with the interprofessional VP. The patient case was a 73-year-old man with multiple diseases, who needed help in his home after a hip fracture. There were 49 students in total, 15 groups with 2-5 students, each of them in different places. They answered a questionnaire before and after working with the VP. Each group was also interviewed after the session.

**Summary of Results:** Students perceived that working together remotely, connected via the communication tool, worked out well. They felt that their knowledge about different professions competences and roles in home care increased after having worked with the VP. Most of them thought it worked well with one student controlling the VP, sharing screen and functioning as a secretary. The students perceived that working with the interprofessional VP was almost like having participated in real home visits with different professions. They appreciated the combination of short videos and texts that facilitated the understanding of the different professions roles and responsibilities.

**Discussion and Conclusions:** The interprofessional VP case may be a good learning activity for online learning for only one professions students.

**Take-home Messages:** Distance learning with a virtual patient case seems to be a promising contribution to modern learning methods and it seems to be effective also for interprofessional learning in one-professions groups.
EPOD-IPE: Interprofessional Education

EPOD-IPE7 Virtual Multidisciplinary Team Meetings: How best to educate tomorrow’s doctors in virtual team working? (8477)

AUTHOR(S):
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ABSTRACT:
Background: Many multi-disciplinary (MDT) team meetings moved online due to covid-19. This created a barrier to medical student attendance due to confidentiality concerns. However, as graduates, they will be expected to play a key role in these meetings. Role-play bridges the gap between university and the workplace (Joyner, 2006); hence, we created a virtual MDT day for clinical medical students studying Paediatrics at Newcastle Hospitals to develop team-working and communication skills.

Summary of Work: Eight members of the Paediatric MDT delivered virtual presentations about their role. Breakout rooms on virtual conferencing software then allowed medical students to role-play a Paediatric MDT meeting. Electronic questionnaires collected post-session feedback, utilising Likert scale questions and free-text responses. The second session was remodelled based on this feedback. Informal feedback was gathered from the session facilitators.

Summary of Results: Twenty-seven students completed post-session questionnaires and 81.6% of medical students agreed the MDT virtual presentations were useful. Thematic analysis of initial MDT Day free-text responses showed that the session could be improved by dividing the day into two separate sessions, smaller group sizes and providing more structure to the role-play cases. Consequently, a management framework tool (MFT) was developed. 80% of medical students in the second group agreed the session was useful.

Discussion and Conclusions: These sessions have been well received by medical students, who reported developing a greater understanding and awareness of different Paediatric-specific MDT roles. Development of a MFT and smaller group sizes improved student perceptions of session utility and facilitator-reported quality of discussion.

Take-home Messages: 1. Medical students appreciate the opportunity to learn about the roles of other MDT members. 2. Education around MDT working can successfully be delivered virtually. 3. MFTs can improve session discussion quality. References: 1. Joyner, B., Young, L. (2006) Teaching Medical Students Using Role Play: Twelve Tips for Successful Role Plays. Medical Teacher, 28:3, 225-229.
#EPOD-IPE: Interprofessional Education


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**ABSTRACT:**

**Background:** The severe Covid-19 epidemic in 2020 has caused the medical crisis worldwide, and even medical students have to graduate early to face the patients. Compared with other countries, the situation in Taiwan is relatively stable. However, the medical team generally lacks experience in intensive care of Covid-19 patients in Taiwan. We planned curricula for trainees in different disciplines in March 2020 to enhance critically ill patients care.

**Summary of Work:** Three attending emergency physicians with qualifications as lecturer or professor in the Department of Medicine designed the inter-professional simulation curricula. The realistic scenario was about the severely ill Covid-19 patient with respiratory failure requiring airway intubation. After class, one trainer collected the learners reflective writings through the online questionnaire. Three teachers coded and analyzed the participants statements together.

**Summary of Results:** Six emergency department residents, four emergency department nurses, and four respiratory therapists participated in 2 simulated inter-professional curricula. Fourteen trainees all finished the online questionnaire the day after the course. Course satisfaction is as high as 4.9. We summarized the following three perspectives through the qualitative analysis of the trainees reflective writing results: 1. Through the immersive situation, participants can transform medical knowledge into the ability of patient care. 2. Improve the skill and confidence of airway management for respiratory failure patients with Covid-19. 3. Inter-professional communication can improve teamwork and patient safety.

**Discussion and Conclusions:** The Covid-19 epidemic in Taiwan is relatively stable, but inter-professional courses are required to improve severe Covid-19 patients care quality. Through realistic situations, different disciplinary trainees work together. The trainees self-established a review plan through reflective writing, believing that this course can transform medical knowledge into patient care. Based on the experience after curricula, trainees made some suggestions on modifying the process to improve future medical care quality.

**Take-home Messages:** Through simulated team training, trainees can improve their ability and confidence in caring for Covid-19 patients to face possible future pandemics in Taiwan.
#EPOD-IPE: Interprofessional Education

#EPOD-IPE9 Establishing a Shared Mental Model during COVID-19 Using Simulation and Real-Time Interdisciplinary Knowledge Translation (8176)

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ABSTRACT:
Background: During the COVID-19 pandemic, there has been a gap between protocol development and dissemination to the healthcare provider (HCP) team. Simulation is a tool to address this gap via education, team-based training, and fostering a shared mental model (SMM). SMMs in the emergency department (ED) enable members of high performing teams to predict their teammates resource needs and next steps, especially in situations where communication is difficult. The resulting implicit coordination is an integral tool in the care of patients in the ED throughout the COVID-19 pandemic. The key innovation was the combination of in-situ simulation with parallel, real-time knowledge translation (KT) to an interdisciplinary team via infographics (IGs). The objective was to design IGs to facilitate the rapid establishment of an SMM amongst interdisciplinary resuscitation teams in the ED.

Summary of Work: Five simulation sessions were performed at an academic, tertiary care centre in Toronto, Ontario. In parallel with these sessions, two IGs were created, updated iteratively, and disseminated to the interdisciplinary ED team over 6 weeks from January to March 2020. IGs evolved according to real-time feedback from the simulation sessions, institutional COVID-19 guidelines, and the scientific understanding of COVID-19.

Summary of Results: Two IGs were iteratively developed and designed for use during resuscitations. These IGs aided in establishing an SMM by serving as a comprehensive point-of-care reference of key resuscitative principles, treatment considerations, and a systematic approach to collaborative teamwork. The two IGs also used specific design elements, including systematic organization, hierarchical consistency, and emphasis of information. The IGs expanded the reach of the COVID-19 in-situ simulation findings well beyond the original simulation participants through broad distribution.

Discussion and Conclusions: The combination of interdisciplinary in-situ simulation with parallel KT enabled the rapid establishment of an SMM within the institutions ED. Implementation of IGs subjectively augmented coordination within ED teams, and improved patient care. Although qualitative feedback has been positive, future research will involve objectively evaluating the IGs to inform future forms of KT.

Take-home Messages: Simulation education with parallel KT in the form of IGs can be a potential tool in EDs in order to facilitate the development of an SMM, and should be explored further.
EPOD-IPE: Interprofessional Education

EPOD-IPE10 Can We Teach Teamwork Online? Using Subgroup Meta-analysis to Compare the Effectiveness of Online and Onsite Interprofessional Education during the Pandemic (8635)

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ABSTRACT:
Background: To prevent disease propagation, online learning has become mainstream during the coronavirus disease 2019 (COVID-19) pandemic. We had redesigned the monthly Interprofessional Collaborative Practice Conference (ICPC) into the online version from March to June and resumed onsite ones during the rest of the year in 2020. This study aims to compare the effectiveness and differences between the onsite and the online ICPC among undergraduate healthcare students.

Summary of Work: To make it available remotely, we filmed the whole course, uploaded the videos and documents and asked the trainee to watch the materials in order; otherwise, the online ICPC had the same components as the onsite version: a brief case scenario film, an interprofessional table simulation or role-playing and a pre-post assessment with the Interdisciplinary Education Perception Scale (IEPS) and a 5-question quiz. We use Excel and R programming to analyze and generate the Forest plot with the pooled effect sizes. The Q test, I squared, and Tau square test were used for heterogeneity and subgroup analysis. The fixed-effects model and the significance of 5% were adopted in this study.

Summary of Results: 169 and 336 students had participated in the online and onsite ICPC, respectively. Both groups had shown significant changes in attitude and knowledge. For the subgroup analysis, the IEPS pooled value was higher in the online group (0.344 versus 0.233), but the variance between groups was not significant (p=0.118). The quiz scores of the onsite group, however, was significantly higher (0.63 versus 0.26, p<0.001). The I square test was significantly high in all subgroups except the IEPS of the online ICPC, implying other factors exist to cause the heterogeneity within each group.

Discussion and Conclusions: The online ICPCs were as effective as the onsite ones in attitude change yet less influential in knowledge acquisition. We should investigate the reason for such difference and adjust the course design to provide better online and onsite learning experiences.

Take-home Messages: - The online ICPCs had similar effectiveness as the onsite version but the latter had better knowledge changes. - Further study should be done to identify confounding factors of the online and onsite ICPC
#EPOD-IPE: Interprofessional Education

#EPOD-IPE11 Examining Undergraduate Medical and Nursing Student Outcomes with a virtual Interprofessional Education Pilot Study (9702)

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ABSTRACT:
Background: Training and educating students to work effectively as members of an interprofessional team to meet the complex needs of patient and population priorities is an expectation of health curricula. At the Northern Ontario School of Medicine (NOSM), Year 1 and Year 2 medical students are involved in community learning sessions (CLS). Community learning sessions are designed to expose medical students to a range of community and clinical experiences. Due to the pandemic, CLS was cancelled and a 12 hour virtual CLS module was developed to support student exposure to interprofessional learning through a collaborative partnership with our academic partners nursing program.

Summary of Work: A summary of the work will include descriptions of the virtual 12 hour IPE pilot and competency domains examined from the Canadian Interprofessional Health Collaborative (CIHC, 2010) competency framework.

Summary of Results: The Interprofessional Collaboration Competency Attainment (ICCAS) Survey was utilized to assess changes in attitudes and behaviours following the 12 hour CLS module. The ICCAS is based on the Canadian Interprofessional Health Collaborative (CIHC, 2010) competency framework, highlighting each of the six competency domains (i.e. Role Clarification). It is a validated Canadian tool, and consists of 20 items. By asking learners to assess their change in level of competency following completion of IPE, it is expected that they will have a better understanding of the nuances of interprofessional collaborative competencies and therefore will be better able to identify any weaknesses that they may have had prior to completing IPE.

Discussion and Conclusions: Interprofessional education involves students from diverse disciplines coming together to learn the variety of roles/scopes of practice, communication and teamwork skills that support collaborative learning. During the pandemic this type of learning required academic institutions to be collaborative and creative in the development and delivery of interprofessional learning. The discussion and conclusions will highlight the academic partnership and the results of medical and nursing students self-assessment of changes in attitudes and behaviours as a result of the IPE pilot project.

Take-home Messages: Academic partnerships are important in creating virtual interprofessional learning experiences that may support students increased awareness of the role of collaborative practice and team functioning in advancing patient/client/community centred care.
The complexity and diversity of barriers hindering introducing clinical reasoning into health professions curricula - results of interprofessional European DID-ACT project (8998)

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ABSTRACT:
Background: Clinical reasoning (CR) is an essential competency for health professionals as it assures patient-safety and leads to effective diagnosis and treatment. Unfortunately, the previous research conducted in the area of CR teaching implementation into medical curricula has illustrated a gap between the actual needs of health professions educators versus what is taught in practice. We explored the barriers hindering explicit clinical reasoning teaching perceived by European health professions educators.

Summary of Work: Health professions researchers and educators from Europe and the USA gathered in a collaborative process to strengthen CR education (DID-ACT consortium, https://did-act.eu). Together we conducted 29 interviews with people connected to health professions education to explore barriers hindering explicit CR teaching in their respective areas and performed a qualitative content analysis of gathered data. We then identified potential solutions during a design-thinking workshop.

Summary of Results: The barriers identified were grouped into 8 general themes: Time, Culture, Motivation, CR as a Concept, Teaching, Assessment, Infrastructure and Others. While defining each theme, we noticed several were interconnected around: lacking time for faculty development, low priorities of teaching, and disbelief in the effectiveness of explicit CR training.

Discussion and Conclusions: The barriers hindering introduction of explicit CR teaching into health professions curricula are complex and should be treated holistically; due to interconnections there is no onesize solution. Our research demonstrated that the solution is through several types of outreach and faculty training activities. Together, endorsed by authorities, we should build awareness about CR. Important is student and patient involvement, introduction of competitive and group training aspects as teacher contents and bootcamps. Some solutions, while critical, are difficult to implement; for example teaching the clinicians to self-reflect despite lacking time and/or holding cultural prejudices.

Take-home Messages: Although the barriers that hinder implementation of explicit CR teaching can be categorized into distinctive themes, we recognize that addressing them should be done holistically by orchestrating dissemination activities, involvement of various stakeholder groups and promotion of self-reflection.
#EPOD-IPE: Interprofessional Education

#EPOD-IPE13 Factors for interprofessional competency among healthcare professionals in Japan (7941)

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ABSTRACT:
Background: In 2016, we developed an Interprofessional competency framework in Japan. This study aimed to explore the factors associated with interprofessional competency among healthcare professionals in Japan.

Summary of Work: A cross-sectional study was conducted from June to October 2020, based on a self-administered web-based questionnaire. The objective variable was the total scores of the Japanese version of the Self-assessment Scale of Interprofessional Competency (JASSIC). JASSIC is a validated measurement tool developed in the interprofessional competency framework in Japan. To identify factors that are associated with interprofessional competency, participants were divided into high-competent and low-competent groups based on the central value of the total JASSIC score. The questionnaire covered JASSIC, basic demographic information, their experience of working in their institution and whether they have pre- and post-graduate IPEs, and their administrative experiences. It also included 20 items on cognition of the organizational climate including the Plan, Do, See factor for management; PDS factor, and factor for if the institution was a director-centered organization; Do factor. The factors associated with the high-competent group were determined using univariate analyses and logistic regression analysis.

Summary of Results: We analyzed data from 560 participants, comprising 292 women, 132 nurses, 127 doctors, 120 social workers, and 88 physical therapists. The average age of the participants was 41.1 years, with 9.1 years of experience working at their institution, and 281 participants had administrative experience. The central value of the total JASSIC score was 72/90 (range: 66-78). 223 participants had pre-graduate IPEs and 419 had post-graduate IPEs. The average scores of the PDS factor and the Do factors were 31.5/50 and 26.8/50, respectively. On logistic regression analysis, high-competent group was independently associated with pre-graduate IPEs (odds ratio;1.820, 95% confidence interval 1.210-2.737), their administrative experiences (odds ratio;1.760, 95% confidence interval 1.159-2.671), post-graduate IPEs (odds ratio;1.664, 95% confidence interval 1.043-2.655), PDS factor (odds ratio;1.135, 95% confidence interval 1.091-1.182), and age (odds ratio;1.035, 95% confidence interval 1.014-1.058).

Discussion and Conclusions: The result emphasizes the importance of pre-, post-graduate IPE, and administrative experiences for improving interprofessional competency in Japan.

Take-home Messages: This study revealed that the factors associated with interprofessional competency included pre-graduate IPEs, administrative experiences, post-graduate IPEs, PDS factor, and age.
ABSTRACT:
Background: Interprofessional collaboration in health professions education context is gaining importance, as it has promising outcomes in terms of effective and integrated services (Hammick, Olckers, & Campion-Smith, 2009). There is dearth of research about the processes teams must go through as they form and develop collaborative practice approaches. Socialization is among those processes, required to develop collaborative practice (Orchard, Curran, & Kabene, 2005) and its significance necessitates in-depth exploration.

Summary of Work: What are the lived experiences of professional nurses with reference to the interdisciplinary team regarding the socialization process in health professions education context at a large private School of Health Sciences in Lahore, Pakistan? Transcendental Phenomenology Two professional nurses were selected on the basis of criterion sampling. Both nurses work at a large private School of Health Science Lahore, Pakistan. The setting was a neutral place, as the participants were researchers colleagues. The data gathering tool was in-depth one-on-one interviews after permission from the gatekeepers and informed consent from the participants. Each interview lasted for half an hour. Interviews were audio-recorded and field notes were taken. Data were recorded in the form of transcripts, saved as digital files in researchers computer.

Summary of Results: Qualitative data were manually analyzed by identifying codes from significant statements. The codes were collapsed in the following themes 1. Mutual Trust & Respect 2. Supportive & Inclusive Environment 3. Breaking the Barriers through Competence 4. Teamwork 5. Learning Together The essence of the phenomenon of IPS was constructed and textual and structural descriptions were developed.

Discussion and Conclusions: The nurses explained their lived experiences which promote IPS within interdisciplinary health care teams while working in both educational and clinical contexts. To promote IPS it is essential for the interdisciplinary team to develop mutual trust, respect, and teamwork. The potential of learning together cannot be ignored in encouraging IPS. The significance of supportive and inclusive working environment, and the role of competence in breaking professional barriers, can not be underestimated.

Take-home Messages: These findings may be used to encourage joint projects involving a variety of professionals within the institution. For better transferability, it is recommended to enhance the scope of the current study to inform policy and practice.
ABSTRACT:
Background: Interprofessional collaboration (IPC) takes place when different health care professionals work together to achieve a high quality of care. Interprofessional Education (IPE) aims to prepare junior doctors for IPC. In order to optimize IPE, it is important to understand how junior doctors—new to working autonomously in a multi-professional team—experience IPC and what their needs are as learners.

Summary of Work: In this multicentre qualitative study, 13 junior doctors individually drew two rich pictures of IPC experiences, one exciting or rewarding and one frustrating or challenging. A rich picture is a visual representation of a particular situation, intended to capture the complex and non-verbal elements of an experience. The authors aesthetically analysed the pictures and used them to support semi-structured interviews. Both visual materials and interview transcripts were analysed iteratively, for which we adopted an inductive constructivist thematic analysis.

Summary of Results: The rich pictures depicted collaborations in different contexts, with the transition from medical student to doctor playing an important role in how IPC was experienced. We identified five themes with various factors influencing junior doctors’ experiences of IPC: 1) Growing into a doctor; (2) Power-relations; (3) Being together in harmony/avoiding conflicts; (4) Modulating emotions; and (5) Judging the collaboration by its perceived outcome. Junior doctors depicted strong emotions in the rich pictures, especially in challenging collaborations.

Discussion and Conclusions: For junior doctors, learning IPC is inseparably linked to learning how to be a doctor. Therefore, IPE should be placed in the context of this transitional phase. In order to better prepare junior doctors for IPC, supervising IPC should be made more explicit. Second, the IPE learning environment should stimulate reflection to help junior doctors deal with the emotionality of IPC and becoming a doctor. Multisource feedback (MSF) could prove a useful tool in empowering all involved health professionals as feedback givers, improving junior doctors understanding of their own roles, the roles of others, and allowing for regular reflection to create meaningful learning experiences.

Take-home Messages: IPC is very emotional for junior doctors, supervisors need to support emotional regulation and provide reflective spaces. Junior doctors need to be/feel competent could be harmful to (learning) IPC.
#EPOD-MGT: Management & Leadership

#EPOD-MGT1 Learning to Lead: A Systematic Review of Leadership Training in Undergraduate Medical Education (8203)

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ABSTRACT:
Background: There is growing recognition that doctors need to develop strong leadership and management skills to spearhead healthcare transformations. Although there are plentiful leadership opportunities during postgraduate training, many experts have highlighted the importance of laying foundations for these competencies during undergraduate medical education. Despite the recommendations, medical schools have been slow to implement formal and effective leadership training into their curricula.

Summary of Work: This work aimed to identify the prevalence and characteristics of undergraduate leadership training curricula and to synthesise studies that report on students experiences of leadership education in medical schools. The search terms were optimised using three databases (EMBASE, PsycINFO, and MEDLINE). The Critical Appraisal Skills Programme checklist for qualitative studies was used to assess the quality of included articles. Synthesis was performed using meta-ethnography.

Summary of Results: The final review included 12 articles. Findings were categorised into three different constructs: Student Engagement, Organisation and Planning, and Pedagogical Philosophy. The synthesis demonstrated that undergraduate medical students acknowledged the importance of acquiring leadership skills, but their participation and engagement depended significantly on the teaching approach. Many students preferred active learning methods, such as simulations and case studies, rather than didactic teaching styles. Top priorities identified by students include having high levels of peer-interaction in small group activities and receiving constructive feedback from motivated and engaging teachers. Nonetheless, the heterogenous leadership training programmes across institutions both nationally and internationally reflect the varied educational curricula and pedagogical philosophies.

Discussion and Conclusions: In context of the growing recognition of leadership education, medical educators and policymakers should outline appropriate leadership competencies and determine best teaching practices. This review concluded that communication, inter-professional learning and patient safety are valuable teaching priorities. Institutions ought to find ways in incorporating leadership training into other student experiences throughout a longitudinal curriculum. A common, evidence-based leadership curriculum may be set up, but each institution should adjust the teaching according to its educational, cultural and healthcare needs.

Take-home Messages: Healthcare leadership education should begin at the undergraduate level. Individual institutions should identify appropriate leadership content, competencies and pedagogy according to the students stage of training. This should be developed from national guidelines and grounded in a healthcare context.


**EPOD-MGT: Management & Leadership**

**EPOD-MGT2 Access to Management & Leadership Training during COVID (8450)**

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**ABSTRACT:**

**Background:** COVID-19 has brought new challenges to education and training, particularly for those close to their Certificate of Completion of Training (CCT) who have specifically-defined competencies that need to be acquired. One of the requirements for CCT, and an area of interest in the NHS Long Term Plan, is Leadership and Management (L&M). However, across the region many courses have been cancelled due to the pandemic.

**Summary of Work:** To ensure that trainees did not miss out on this opportunity we ran a two-day Senior L&M course virtually via Zoom. Topics taught included: NHS finance, writing business plans, risk & governance, NHS strategy, NHS structure and Insights Discovery programme. To retain interactivity we limited the number of trainees to 25, and educated speakers on basic Zoom functionality including breakout rooms, chat and annotations. Ground rules were set ensuring trainees kept their cameras on to encourage participation.

**Summary of Results:** A pre-course survey showed the following as reasons for attending: 80% stated a requirement for career progression, 60% stated a specific requirement for CCT and 80% stated a desire to increase knowledge. Statistical analysis of pre and post course data showed significant improvement in knowledge across all domains. Over 95% of attendees found the virtual format easy to use. Only 16% experienced problems with technology due to poor bandwidth in participants homes. Free text questions identified positive aspects of the virtual format as: improved access, more convenient, increased comfort, good timekeeping, while negative aspects included: loss of networking, less interaction with other participants and Zoom fatigue.

**Discussion and Conclusions:** Access and convenience were improved by reducing the need to travel, reaching shielding trainees and not necessarily requiring formal childcare arrangements. Additionally, we were able to invite a greater variety of high-quality speakers through remote presenting. While less interaction with other participants was noted, 80% felt they had a good opportunity to interact with speakers. In future we aim to provide more breaks to help minimise Zoom fatigue and provide space for participants to interact.

**Take-home Messages:** By delivering the course virtually we ensured our trainees had the opportunity to access high quality L&M training to support both their personal development and CCT requirements.
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ABSTRACT:
Background: Communication, leadership and teamwork are highlighted by Outcomes for Graduates as transferable skills expected by the GMC of all graduating doctors. Prospective medical students are required to demonstrate these throughout the application process. However, the COVID-19 pandemic has limited the opportunities for students to experience and cultivate these skills in the clinical environment.

Summary of Work: The COVID-19 Innovation Programme was a novel week-long teaching course delivered virtually, aiming to support students to explore and develop transferable skills in leadership, teamwork and communication. 176 students were divided into 31 groups, each facilitated by a medical student near-peer mentor, and were allocated a structured problem-based scenario discussing a clinical issue posed by the pandemic. Students were tasked to debate ethical scenarios, critically appraise articles and design research posters, which encouraged the development of the key transferable skills. The week culminated in a national conference, offering students an opportunity to present their work.

Summary of Results: Facilitators assessed students on the domains of communication, teamwork and leadership skills, using a previously validated questionnaire with a 5-point Likert Scale. A Wilcoxon Signed-Rank Test indicated that the median scores post-programme of leadership, teamwork and communication skills (44, 23 and 19 respectively) were statistically significantly higher than the median scores pre-programme (40, 21 and 17 respectively) Z=5.5, p<0.0001.

Discussion and Conclusions: Our programme demonstrates that virtual, small group collaboration is effective at developing leadership, teamwork and communication skills in prospective medical students. The Medical Schools Council advises that these attributes are identified in candidates at selection for medical school. By developing these skills earlier in prospective medical students, not only are they better prepared for the value-based recruitment process to medical school, but also for future clinical practice.

Take-home Messages: Arguably, it is our responsibility as healthcare professionals to best prepare the doctors of tomorrow. We must shift the current focus from teaching prospective medical students how to succeed at selection, towards a skills-based approach of developing the necessary attributes that will serve them in their future careers. Further research is required to evaluate the long-term implications of this approach and the impact on clinician competency.
**ABSTRACT:**

**Background:** The Covid-19 pandemic has resulted in unprecedented changes to the delivery of postgraduate education, mandating the swift transformation of training to the virtual learning environment. We examine the conversion of a well-established regional deanery-led Paediatric Transition to Leadership Course, aimed at senior house officers (SHO) approaching registrar level, into a national freely available online course.

**Summary of Work:** This three-day face-to-face course traditionally comprised lectures, small-group work and individual reflection, addressing leadership and management competencies. In Spring 2020 it was rapidly restructured: lecture recordings and handouts were produced for dissemination via a shared Trello board, alongside an online handbook summarising life as a new registrar and topical updates, providing flexible access. Several half-day Putting Leadership into Practice (PLiP) interactive Zoom workshops were also facilitated, and a half-day live webinar was held, tackling situational awareness, conflict resolution and accountability.

**Summary of Results:** Online material was accessed by 192 learners, of whom 68% had received no specific transition training, though 93% conceded this should be mandatory, 50 attended PLiP sessions and 35 joined the webinar. Of 75 post-course evaluations >98% found the course useful. Candidates also ranked perceived competence in various domains on a 4-point Likert scale: across 60 complete data sets, seven of eight leadership and management domains demonstrated statistically significant increases (p<0.05). Specific accolades included feeling more confident, learning from colleagues and alleviating common fears.

**Discussion and Conclusions:** The virtual environment engaged almost five times the audience of the previous year, and included 50% out-of-deanery candidates, keen to replicate the course locally. Nevertheless, 53% would still prefer a face-to-face event with a supportive peer-network, an element we must strive to maintain even in the virtual setting. Our newly curated virtual Transition to Leadership Course clearly provides SHOs with appreciable gains in core leadership and management attributes, as effectively as previous face-to-face courses, but with the ability to reach a much wider audience.

**Take-home Messages:** Future courses must employ a blended-learning programme, creating easily accessible user-friendly online resources, alongside opportunities for peer discussion and networking, to deliver the best of both pre- and post-Covid-19 education models.
ABSTRACT:

**Background:** The class president, elected by his or her peers, helps lead the Student Government Association (or Medical Student Government) as an inductee and is responsible for ensuring class leadership functionality and efficiency while serving as a liaison between students and the administration. As the highest-ranked M.D. class officer, the class president sets the agenda and establishes the order of business for all Executive Council (VP, secretary, treasurer) and class meetings. In response to COVID-19 medical school closures and pivot to remote learning, the class presidents adopted the role of pandemic President, necessitating a transformation in traditional duties, processes, and leadership.

**Summary of Work:** Four United States medical school pre-clerkship presidents were called upon to share their experiences in leadership during this pandemic and asked to discuss how communications changed amidst COVID.

**Summary of Results:** A significant transformation occurred with several pivotal changes from the traditional model of what medical student presidents usually facilitate in the pre-clerkship. The streamlining of information from the administration to students transcended previous response rates than Deans have become accustomed to in past years. Communication strategies considerably improved as student-leaders adapted to the virtual education landscape out of necessity. The pandemic Presidents utilized social media platforms to determine the class pulse, employing surveys to substantiate the class voice, which brought cohesiveness. Although social distancing kept first- and second-year medical students from developing as a team through skills-based exercises, the Presidents supported student wellness by implementing many novel initiatives that extended their constitutional roles to reduce student burnout.

**Discussion and Conclusions:** COVID-19s impact on medical student education has been at the forefront of discussions around the world. However, its impact on student leadership and its governmental processes has been underscored. The presidents role became crucial in the pandemic, which transformed class-leadership, thus providing insight for future academic leaders.

**Take-home Messages:** Significant areas of transformation occurred initially with elections but persisted as new communication mechanisms had to be adapted and prioritized a larger shift towards student wellness.
ABSTRACT:
Background: The United States (US) has a significant maldistribution of healthcare providers, which negatively impacts the health of rural Americans. The World Health Organization (WHO) and the American Association of Medical Colleges (AAMC) policy priorities stress the importance of increasing access to healthcare for those in rural/remote areas. Previous work to understand the healthcare provider workforce distribution in the United States has focused on provider personal attributes (e.g., location of upbringing) rather than job- and community-related attributes.

Summary of Work: Healthcare providers (physician, physician assistant (PA), and nurse practitioner (NP)) and second-year PA students in the US completed a questionnaire where they rated the importance of job-related (e.g., work environment), community-related (e.g., recreational opportunities), and personal attributes (e.g., spouse) when choosing a practice location. The 21-item questionnaire included demographics, 5-point Likert scale items (very important to very unimportant), and an open ended item that asked participants to indicate the most important attribute. This is a work in progress; preliminary data are presented here.

Summary of Results: To date, 176 providers (n=130) and students (n=46) have completed the questionnaire (response rate: 26%). The majority of the sample identified as female (63.6%, n=112) and white (85.25%, n=150). The item with the greatest importance in selecting a job for both providers (96.9% very/important) and students (95.7% very/important) was salary. For providers and students, job-related attributes were most important (n=112) while community-related attributes (n=27) were the least important. The most important attributes that preceptors and students both identified when choosing a practice location on the open-ended item was practice specialty (n=34), clinic environment (n=30) and proximity to family/friends (n=25).

Discussion and Conclusions: Specialty availability, clinic environment, and salary were identified as the most important factors providers and students make when selecting a job.

Take-home Messages: For administrators who wish to improve their alumni placement in rural areas, there is a need to better understand the relative importance of different personal, job-, and community-attributes that providers and students evaluate when making a job choice. This will inform policies and incentives to attract providers to work in underserved areas.
Implementing Electronic Medical Record (EMR) I-PASS based handover: A method to improve the handoff process in an ACGME-I residency program (7617)

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ABSTRACT:
Background: EMR has revolutionized the way medical care providers interact with the patients and their medical records. I-PASS arises as a useful tool that can be used to improve the accuracy of the handoff information with special focus on the anticipated problems planning for these patients. We aimed at transferring > 90% of the pediatric inpatients written handover from non-electronic method to an electronic one over 2 months period using I-PASS with a goal to achieve > 60%of the elements in the AAP guidance for written handover.

Summary of Work: A cross sectional intervention study among the pediatric training program at Sidra Medicine started in June 2019. It included multiple phases in which the records of were screened before and after using IPASS handover using the 15 elements of American academy of pediatric guidance for written handover.

Summary of Results: We were able to achieve 100% of the pediatric inpatients written handover from non-electronic method to an electronic one over 2 months period. The average completion of the 15 elements AAP guidance of handover in phase 1 was 56% which improved after piloting in 2 pediatric teams to 65%. In phase 2, new trainees joined the program, the average completion of the elements dropped down to 53%, which improved after refreshment course of hands-on training to 73% and 70% (figure-1). There were 4 elements that were deficient across the whole project: diet, recent vital sign, activity and code status with average of 20%, 10%, 3% and 3% respectively( figure 2).

Discussion and Conclusions: Our project shows that implanting EMR handover using IPASS achieved safely over 2 month-period with appropriate planning and follow up monitoring. It represents an excellent and safe tool to decrease human error in the hospital setting and ensure patients safety. Future plans includes more training for the juniors and the newly joined trainee using different methods like electronic learning modules.

Take-home Messages: Technology is used to improve the accuracy of the handoff information and I-PASS based EMR represent an useful tool for written handover
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ABSTRACT:
Background: Healthcare workers (HCW) are at increased risk of mental health issues when faced with the challenges associated with the disease outbreak and pandemic. The perceived risk levels related to an event are affected by the unfamiliarity and uncontrollability of the hazards involved and that these perceptions in turn affect HCWs likelihood for developing psychological distress. In this sense, potential psychological negative consequences are not only detrimental to HCWs well-being but also reduce their ability to effectively treat patients. This study aimed to assess the psychological impact of ongoing pandemic on HCWs residing in tertiary care hospitals of Pakistan.

Summary of Work: This correctional study was conducted from April-June 2020 with convenience sampling approach among HCWs of various private and public tertiary care hospitals of Pakistan. After approval from ethical review board, an online form was generated: consisting of demographic questions and Goldberg General Health Questionnaire-28. Data were analyzed using SPSS-vr-22. The association of dependent variable and gender was found with Mann-Whitney U test while multilevel variables were computed with Kruskal Wallis test. The significant level was considered at p = <0.05.

Summary of Results: Total 186(100%) HCWs with a mean age of 37.6±9.280 years among which 105(56.5%) males and 81(43.5%) females participated in the survey. Highest incidence was found for social dysfunction 184(97.8%) followed by somatization, 169(92.8%). While comparing total GHQ-28 scores with independent variables, more than half of the HCWs 96(51.6%) had scored greater than 22. The mean of GHQ-28 of the total sample was 24.00±12.4956 (22.194-25.88). Significance difference was found between age group and anxiety (p=0.018), speciality of HCWs with somatization and social dysfunction (p=0.041 and 0.037 respectively). All subscales and total GHQ scores were higher in male, medical officers and trainees. Those with less than 40 duty hours per week were more prone to psychological disorders

Discussion and Conclusions: Pandemic has a significant risk for mental health of HCWs. Majority of HCWs are socially dysfunctional followed by somatization. When a pandemic is at its peak, proper mental health support program, personal and family protection assurance is highly recommended.

Take-home Messages: Protecting the mental health of HCW will impart best care to patients.
#EPOD-MGT: Management & Leadership

#EPOD-MGT9 Responding to COVID-19 - rapid upskilling of the pharmacy workforce in Great Britain (9046)

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**ABSTRACT:**

**Background:** In mid-March 2020, the Royal Pharmaceutical Society responded to the rapid escalation of the COVID-19 pandemic by establishing an education programme dedicated to supporting pharmacy teams in Great Britain to provide safe and effective care to patients. Particular focus was placed on rapid upskilling of practitioners redeployed to critical care and care home settings.

**Summary of Work:** A digital education programme, instigated on 18th March 2020, comprised of live (then recorded) training webinars, podcasts, digital clinical resource hub, and interactive PDF training resources designed to upskill pharmacists deployed to critical care (including the London Nightingale field hospital) and the care homes setting. Programme content was developed through collaboration with leading clinical experts from across the profession, national organisations and commissioning bodies.

**Summary of Results:** Between March and July 2020, 28 live training webinars were developed and delivered, accessed by over 12,045 pharmacists covering topics including critical care, infection management, mental health conditions, thrombosis and anticoagulation, COVID-19 clinical trials, COVID-19 in children, remote consultations and contingency planning. 11 podcasts were recorded on topics including COVID-19 testing and treatment, vaccine development, controlled drugs and interviews with senior figures from pharmaceutical industry. A clinical training hub collating covid-related clinical resources was accessed over 67,100 times. The critical care digital training resource, launched in April, was accessed by 1623 pharmacists, and the care homes training resource launched in May, accessed by 1434 pharmacy professionals.

**Discussion and Conclusions:** Pharmacy professionals are responsible for ensuring the safe and effective use of medicines at all stages of the medicines life-cycle, including drug development, supply, prescribing, administration, monitoring and medicines advice. The pandemic resulted in unprecedented numbers of practitioners delivering services in new care settings, resulting in the need for rapid upskilling. The most significant area of training need was seen in critical care, with uptake of 3300 registrations across three live webinars, and viewing of the first critical care webinar recording 1953 times within one month.

**Take-home Messages:** A digital approach to education delivery supports rapid upskilling of large numbers of healthcare professionals in a short time frame. Results of research on impact of learning on practice will provide further insight into this approach.
ABSTRACT:

Background: The rate and peak numbers of hospital admissions for patients with SARS-CoV-2 (SARS-CoV-2) was successfully reduced following a UK wide lockdown from 23/1/2020. In Scotland, there was a peak of 185 hospital admissions/day. Many inpatients with COVID-19 were managed within The Respiratory Medicine Department (RMD) in the Royal Infirmary of Edinburgh during this period. This qualitative study aims to analyse the experiences of staff to allow increased preparedness for future events, including the currently witnessed second wave.

Summary of Work: Ten participants, working in the RMD between March and July 2020, were selected as representing the diverse range of staff employed. The lead researcher conducted semi-structured interviews, incorporating five main topics: personal experiences, positive outcomes, challenges, emotions and ideas for improvement. After verbatim transcription the interviews were assessed. Independent duplicate analysis ensured consistent theme identification for improvement in staff experience and wellbeing.

Summary of Results: Universally identified key themes included; wellbeing, working environment, organisation and logistics, patient management, support, communication and infection control. Overwhelming anxiety and uncertainty regarding staff welfare and increasing patient complexity, superimposed on winter pressure concerns, were evidenced. Patient frequency and intensity of clinical demand produced further strain. Care prioritisation compromised training opportunities, teaching and career progression. Periodic isolation of 60% of nurses stretched staffing levels, resulting in complex and unsatisfactory rota implementation. Lack of clarity in guidance for PPE in respiratory specific scenarios accentuated concerns of PPE supply and adequacy. Continuous exposure to multiple deaths and the repeated need for challenging family discussions delivered a further toll. Good practice was identified in regards to team working and interdepartmental support.

Discussion and Conclusions: The metric for improvement in healthcare needs to include staff welfare in order to ultimately enhance the care they can provide to patients. Staff surveys evaluating improvement within a department need to be underpinned by themes identified during qualitative research such as this. This study design proved invaluable in drawing out fundamental issues for strategising service improvement.

Take-home Messages: Second wave preparation includes provision of clear guidelines surrounding PPE, educational and emotional support groups for staff, involvement of staff in policy design and in the logistical planning of adequate and appropriate ward staffing.
ABSTRACT:
Background: All dental student curriculums have sections describing the delivery of teaching and assessment. A full understanding of human health and disease is essential for the safe delivery of dental care. With an ageing population, and increasing medical morbidity and retained natural dentition, the need for a sound education in human disease (HD) is increasing. The UK General Dental Council (GDC) publishes curriculums that guide dental school teaching. In 1997, for the first time, the GDC described the funding mechanism for dental schools to obtain and deliver HD teaching in conjunction with linked hospital medical, surgical and emergency departments. The aim of this study is to identify funding streams dedicated for HD teaching and follow their progress from 1997 to date, with particular focus on dental schools in England and Wales.

Summary of Work: We searched for published data from the GDC, from government reports, from UK National Health Service and university funding bodies, as well as literature searches of online databases and search engines. We used Freedom of Information requests to hospitals and universities asking for funding data.

Summary of Results: We found that following initial clarity from some UK dental schools following GDC inspections between 2003-2005, the HD funding streams have become increasingly difficult to identify, with sums in some schools nearing Â£1 million in 2004/5 now unaccountable in 2019/20.

Discussion and Conclusions: In 1997 the dental regulator for the UK decided that there should be sufficient emphasis on new graduates having a full understanding of their patients health and disease that, for the first and only time, they directed schools on how to fund and deliver a key curriculum theme. With an ageing population with increasing medical morbidity and also a greater proportion of patients retaining natural teeth into later life, the need for graduating dental students to have a sound understanding of human health and disease has never been greater. At the same time it seems the ring-fenced funding for HD teaching has become increasingly opaque and possibly has either been diverted to other areas, or has disappeared altogether.

Take-home Messages: Education delivery is dependent on funding. If funding is decreased or lost, key topics will suffer.
ABSTRACT:
Background: Complete discourse on medical disputes has remained unaddressed in Taiwan. Whenever a medical dispute occurs, hospitals always take the fire-fighting approach to deal with it, unable to develop a complete preventive management model. In other words, there is nothing but crisis handling of medical disputes, in lack of risk management.
Summary of Work: (1)To form a inter-professional research team (include medical attorney, judge, lawsuit expert general physician, intensive care physician, hospital law affairs and social worker) to study cases and medical lawsuit verdict for those risk factors. (2)In depth interview of research team worker, objective analyze those crucial lawsuit factors. (3)Three ways cross examination of initial risky medication checklist thru Delphi method.
Summary of Results: After analyzing the results, the risk scale has a high degree of consensus with regard to three questions, namely, inconsistent statements from the doctor or medical staff, patients or family members pay great attention to their own rights and interests, and patients have preconceived views, thus we can see that when there is a clear difference between the expectations of the physicians and the patients, there lies the most worrying risk factor for medical disputes and an opposing relationship between the doctors and the patients.
Discussion and Conclusions: A substantial gap of perceptions between physicians and patients can be a risk factor for the confrontation between the two parties, resulting in medical disputes. The making of a risk scale is by no means to put a stigma on the patients and their families. Instead, it is intended to set a more sensitive detection of intense relationship between the two parties so as to deal with the opposite stands as early as possible. Further development should have reasonable knowledge, skills and mindset for each risk factor implemented in the medical education, to reduce medical students trial and error in their clinical practice.
Take-home Messages: The implementation of medical education should be in line with the requirements of the situation, reason, and the law, in order to reduce the possibility of clinical trial-error type of learning for the medical students, and to avoid any disputes arising from an opposing doctor-patient relationship, while pursuing a win-win doctor-patient relationship.
ABSTRACT:

Background: Coronavirus Disease 2019 (COVID-19) has been the virus that many experts have warned us about for decades and has revealed multiple flaws in the U.S. healthcare system, particularly the scarcity of personalized protective equipment (PPE). The current shortage of PPE has become a primary issue for family medicine, internal medicine, pediatrics, and emergency medicine private practices. Since questionnaires are useful tools for surveying and assessing populations, collecting meaningful data, and providing proper context for planning, a questionnaire establishing a foundation for identifying HCP for which PPE would be most effective. The purpose of this study is to provide a contextual basis for appropriate survey research among a community of physicians in need of PPE. This circumstance was unique due to the lack of guidelines put in place for such a pandemic, the shortage of PPE and the lack of testing was not provided to assure if the proper quantity of PPE was supplied to the frontlines.

Summary of Work: A priority scale was constructed using, initially a ten question survey for physicians in our community to respond. The scale ranged from high, to intermediate, and lastly low priority. These questions and scales were derived from current COVID-19 data, recommendations, and historical perspectives of the previous public health crisis.

Summary of Results: A total 1,173 physicians were supplied PPE from April 2020 to September 2020. Family Medicine (24%), Pediatrics (13%), and Internal Medicine (11%) were the top specialties to receive supply. PPE was supplied to physicians who either worked in a hospital (40), clinic (1083), concierge medicine (12) or other (38) settings such as nursing homes.

Discussion and Conclusions: The questionnaire informed and educated not only medical counties, but also state agencies, and HCP, on the importance of establishing protocols for emergency distribution of PPE. It is advised to consult with statisticians, experts, and stakeholders to properly allocate and prioritize PPE by implementing ethical and effective guidelines on how to receive PPE for fair allocation of available PPE.

Take-home Messages: This questionnaire provided stakeholders, including physicians, state agencies, and medical counties, to have a strategic plan and protocol for any future distribution of low-availability, high-demand emergency medical equipment.
BACKGROUND: Countries from around the world have proven successful models of bilingual medical education, however there is no published research on Welsh-medium medical education. Two Welsh Government strategies have driven the development of Welsh language healthcare provision for those who need or choose to receive it: A million speakers, More than Words. In 2015 the first student cohort enrolled on the Cardiff University MBCh course, opting to study partly through the medium of Welsh supported by Y Coleg Cymraeg Cenedlaethol (CCC)(a Welsh federal university). 70 CCC scholars are registered for 2020-2021, together with an increase in Welsh-speakers and Welsh-domiciled students. Although feedback has been collected over the years, this is the first opportunity to research the Welsh-language provision of the entire MBCh degree. This study will focus on the experiences of Welsh-speaking medical students from 2015-2020, the barriers they have faced and how it prepares them to work as doctors in a bilingual country.

SUMMARY OF WORK: This study uses mixed methods. Surveys were distributed to all Welsh speaking medical students at Cardiff University. Focus groups will be conducted students from each year. The focus groups data will be audio recorded, transcribed and analysed using inductive thematic analysis. Ethics has been granted by Cardiff University School of Medicine Ethics and Research Committee.

SUMMARY OF RESULTS: 64 students responded to the survey. 46/64 were female. 34/64 said that everyone in their family spoke Welsh. 73.4% studied all their GCSEs in Welsh. 42.1% studied biology & chemistry A Level in Welsh. 53/64 of the respondents are CCC scholars. 44/64 said that there was enough support with Welsh personal tutors, case facilitators and lecturers being very supportive. Some felt that there could be more support for students less confident in speaking Welsh who wished to improve their skills throughout their medical studies. The data from focus groups is currently being collected and analysed.

DISCUSSION AND CONCLUSIONS: Most students are satisfied with current Welsh language provision and support. Its also important to support less confident Welsh speakers to improve their Welsh language skills.

TAKE-HOME MESSAGES: Medical education is vital in ensuring a bilingual future workforce for a country with two official languages.
The Impact of Accreditation on medical students’ learning outcomes: Evidence from China (9119)

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ABSTRACT:
Background: Accreditation is seen as an effective way to guarantee the quality of medical education. However, pervious research methods make it difficult to derive the causal effect between accreditation and the outcome variables, especially the medical students learning outcomes. The National Center for Health Professions Education Development in China conducted two national-level surveys in 2019 and 2020. This study utilized these data with the accreditation data from Working Committee for the Accreditation of Medical Education in China and used a causal-effects approach to assess the impact of accreditation on medical students learning outcomes.

Summary of Work: According to Accreditation Standards for Basic Medical in China (The 2016 Revision), we divided the learning outcomes of medical students into four domains and adopted the value-added scores of these four outcomes of each medical school as the dependent variables. Whether the institution accredited, the survey time and the interaction between them as the independent variables. We used the propensity score matching difference in difference (PSM-DID) method to evaluated whether the accreditation has improved learning outcomes.

Summary of Results: The results of the PSM-DID analysis showed that the effect size of accreditation was 0.24 in the Science and Scholarship domain, 0.39 and 0.07 in the clinical practice domain and professionalism domain, respectively. While in the Health and Society domain, the effect size of accreditation was -0.05. None of these results were statistically significant.

Discussion and Conclusions: There was a positive effect of accreditation on students Science and Scholarship, clinical competence and professionalism domain, but all were not statistically significant. Analysis of this result needs to be further studied in relation to the mechanisms of the influence. The use of student self-assessment results as the observed variable may affect the validity of the findings, so we will use administrative data, such as the National Medical Licensing Examination data to solve this problem. In addition, the different period of accreditation validity and the time after accreditation of the medical school may have different effects.

Take-home Messages: It is important to evaluate the validity of the accreditation. Using the causal effect model, this study evaluates the impact of accreditation on medical students learning outcomes.
#EPOD-MER: Using realist evaluation methodology to assess online learning modules for continuing professional development (8278)

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ABSTRACT:
Background: Continuing professional development is essential for all faculty, including instructors in health professional programs, to promote teaching excellence. Online learning can be a useful teaching modality to support the delivery of PD programs. The purpose of this poster is to present the realist evaluation method as an effective approach to online PD program evaluation. We will describe the realist evaluation methodology and provide a case example of our evaluation of online learning modules developed for novice clinical instructors.

Summary of Work: The realist evaluation approach highlights three main components of a program being evaluated: Contexts, mechanisms, and outcomes are interrelated through models known as context-mechanism-outcome pattern configurations (CMOCs) that demonstrate how programs activate particular mechanisms under certain conditions (contexts), to produce outcomes for participants. The realist evaluation model supports an iterative, mixed-methods approach to data collection to ensure that both program processes and impacts are studied.

Summary of Results: CASE EXAMPLE We developed an online learning program that provided on-boarding to novice clinical instructors through a Program for Excellence in Clinical Instruction (PECI). The PECI provided self-guided, online modules introducing novice instructors to the fundamentals of clinical teaching, and various evidence-based clinical teaching strategies. An initial program theory was generated. Contexts and Mechanisms considered to generate positive Outcomes were considered. Data analysis was iterative; interviews were recorded, transcribed and then were coded to begin qualitative analysis. Open-ended survey questions were also coded. Codes were then grouped into themes according to potential CMOCs. The final programme theory included newly added contexts, mechanisms, and outcomes that were identified through the iterative data collection and analysis process.

Discussion and Conclusions: Realist evaluation provided a nuanced understanding of whether online modules for onboarding novice instructors were effective, who they would work best for, and how they would produce positive outcomes. Understanding contexts and mechanisms of a program can reveal how it works, which can then inform development and optimization of future PD programs.

Take-home Messages: Realist evaluation is a useful methodology to assess online PD programs because it provides a broader understanding of what works for whom in what circumstances through the creation and refinement of a programme theorys contexts, mechanisms, and outcomes configurations.
ABSTRACT:

Background: COVID-19 has resulted in an infodemic of facts and misinformation. Misinformation has been an issue in past pandemics. However, COVID-19 has brought the challenge front and center for many healthcare practitioners, faculty, and health professions students. Effectively navigating this information landscape is essential for today's trainees. This project aims to assess the coverage of published literature on misinformation relating to COVID-19 across databases and its potential impact on information seeking.

Summary of Work: In June 2020 and January 2021, we selected four databases (PubMed, Scopus, CINAHL, Communication & Mass Media Complete) and searched them for literature related to misinformation and COVID-19. We searched using appropriate keywords and related concepts for both coronavirus and misinformation, using broad search filters. Results from each database were deduplicated and compared against one another to determine coverage overlap.

Summary of Results: In total, after deduplication, we retrieved 1882 citations across all four databases; 1441 were found in only a single database. Only four citations were found across all databases. PubMed and Scopus showed the largest overlap of citations, while Communication & Mass Media Complete had the lowest. Approximately 86% of citations found in Communication & Mass Media Complete were unique. Single database searching yielded only a proportion of total individual citations found. Notably, 51% of total citations were found in PubMed and 74% of total citations found in Scopus.

Discussion and Conclusions: Misinformation can have repercussions for providers and the wider public. Misidentification of the literature can have dire consequences for both research and patient care, particularly in times of high uncertainty. The differences in database coverage reinforce the need for information-seekers to have a variety of resources at their disposal and refrain from relying on a single information source to stay informed. Faculty and students engaging in evidence-based practice must develop a suite of information tools to minimize potential bias. This is especially the case for cross-disciplinary topics such as medical misinformation.

Take-home Messages: • Understanding limitations in coverage of resources is an important component for effective information-seeking • Faculty and students should develop a repertoire of cross-disciplinary tools to answer health questions
#EPOD-PROF: Professionalism

#EPOD-PROF1 The process of fostering dental students’ professionalism in Japan (8629)

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**ABSTRACT:**

**Background:** Professionalism is not absolute, as it changes depending on times, countries and cultures. However, for effective professionalism education, we need to clarify learners outcomes. Therefore, we studied whether the professionalism of Japanese dental students change with their year.

**Summary of Work:** Semi-structured interviews were conducted with ten 4th and 5th year students. The 4th year students learn mainly by lectures and practice, and learn professionalism for 16 times. The 5th year students experience clinical clerkship. A thematic analysis approach was employed to extract the professionalism model in students from the interview data.

**Summary of Results:** Professionalism models for each year were obtained. The components of the models did not differ greatly, such as respect for patients and colleagues, improvement of skills, and communication skills. However, for what the students thought a dentist needed the most, it seems that higher skill was the top priority for the 4th year students and the attitude for patients was the top priority for the 5th year students.

**Discussion and Conclusions:** The 4th year students emphasized that it was high skills that save the patient. On the other hand, the 5th year students believed that skills were necessary, but the right attitude was necessary to get patients to come to clinics. Educational practices focusing on having a certain degree of skills at the time of graduation have been conducted in Japan from long ago. Even now, there are aspects that emphasize skills during lectures, which is something that may have an effect. However, through seeing their actual interaction with patients, it seemed that the students way of thinking changed greatly during their clinical clerkship. From this, we think that it is necessary to provide education from an earlier year without specializing in skills. In addition, considering the influence of education systems, we believe that these results can be adapted to other health professions.

**Take-home Messages:** Students who have not had the experience of clinical clerkship are more likely to focus on skills.
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ABSTRACT:
Background: Scholarship on teaching professionalism is limited in Optometry. There is no existing research focussing on the key conceptual content for an optometric curriculum. This project aims to provide inter-disciplinary learning and engagement for students in Optometry, Arts Management/Curatorship and Animation. Focused on the physical environment of the Grainger Museum, students experienced object-based learning opportunities in group contexts, designed to promote personal and professional learning and reflection in the areas of ethical dilemmas, communication and collaboration across different disciplines.

Summary of Work: Optometry students experienced activities that focused on ethical dilemmas, including dealing with present or future moral distress in health professional contexts. Arts Management/Curatorship students provided insights and ways of connecting to the selected objects, and Animation students assisted in the video production.

Summary of Results: Together, 84% of the students (n=70, 100% response rate) reported that this task increased their understanding and awareness in professionalism and heath ethics. 86% believed that their communication and interpersonal skills will improve after this activity. 89% found group work more enjoyable compared to previous experiences.

Discussion and Conclusions: The project has enhanced students awareness in professionalism and ethical dilemmas. All students have an increased understanding and awareness of professionalism, teamwork, communication and collaboration across different professions and perspectives. This project has provided specific supported learning opportunities for students across disciplines to engage in unique ways. It has encouraged them to consider and appreciate the perspectives and skills of students from other disciplines, and how to communicate and work effectively in team-based settings. In this case, getting students to explore the resources outside of their standard teaching contexts, and bringing new learnings and ideas back to the classroom to teach their peers made the topic more engaging and interesting.

Take-home Messages: The use of object-based learning in museum environments can provide students the opportunity to learn generic skills such as team work and communication and reflect on their development in safe settings.
#EPOD-PROF: Professionalism

#EPOD-PROF3 Explorative analysis of professionalism lapses for undergraduate medical students (8342)

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ABSTRACT:

Background: Medical School concern forms as a means of professionalism lapse identification is an internationally recognised approach by institutions and medical regulators. Written records of undergraduate professionalism lapses have shown associations with further medical school and postgraduate professionalism lapses. Despite the widespread research of medical professionalism there are few contemporary analyses of actual professionalism lapses at medical school.

Summary of Work: 247 University of Nottingham medical students professionalism records were reviewed over the course of their 5 year medical degree (one entire entry cohort). Records were reviewed against the General Medical Councils Good Medical Practice document as the professionalism standard. The four domains within this document were used to categorise lapses and to protect the identity of students as outlined in the studys approved ethics submission.

Summary of Results: 37 forms with lapses were identified for 24 students (9.72% of cohort). 14 were for females and 10 for males, this difference was not statistically significant (p =0.767). Most lapses were categorised as breaches of Knowledge, skills and performance (49 %,), followed by Communication, partnership and teamwork (43%) and Maintaining trust (8%), there were no forms identified breaching Safety and Quality. Nine students (3.64% of cohort) had multiple forms with professionalism lapses.

Discussion and Conclusions: In keeping with the literature this study demonstrated the majority of students had no professionalism lapses identified and the domain mapping was consistent with previous studies. In contrast there was no significant gender differences. Identification of students with professionalism lapses is only as strong as the reporting mechanisms in the institution and variance in the literature may not be due to differences in student behaviour but in the recognition and recording. There is currently no set gold standard in how lapses should be identified and recorded. Future research is needed to explore the effectiveness in differing professionalism reporting mechanisms.

Take-home Messages: 1) Undergraduate professionalism curricula should focus on the importance of professional communication. 2) The authors advocate a national/international approach to set a standard for Recognition, Recording and Remediation (we term the 3 Rs) for professionalism lapses as this consistency would allow greater exploration into school or region specific areas to guide professionalism curriculum development.
#EPOD-PROF: Professionalism

#EPOD-PROF4 And then there were SoMe - Exploring The Social Media Professional Identity of Medical Professionals (9765)

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ABSTRACT:
Background: Social media is unescapable and encompassing in the modern world. This is now a key player in Professional identity formation as medical professionals are exposed to the world via social media. A world with prospective bosses, patients, students and colleagues. So it is imperative to explore this new concept of Social Media Professional Identity.

Summary of Work: This was a mixed methods study carried out from December 2019 to December 2021. The first phase comprised creating an open-ended questionnaire on the topic after the literature review. We distributed this questionnaire to health care professionals worldwide using convenience sampling by using Listservs on twitter and the Authors own networks. 110 questionnaires were returned comprising representation from 9 countries These were thematically analysed using Atlas.ti software. The second phase comprised in-depth interviews of volunteering participants for more detailed analysis. An interpretivist lens was used for these interviews and they were also thematically analysed.

Summary of Results: Positive themes were regarding development of professional identity via social media included mentorship, communities of practice, networking, hierarchical flattening and diversity. Negative themes included misinformation, anonymous harassment, blurring of private and public persona. Themes and subthemes identified from the interviews echoed the above and also showed the influence of politics and culture on social media practices across the world and how that factored in professional identity formation.

Discussion and Conclusions: In conclusion professional identity development can be furthered or impeded via social media. However, this is all contextual and subject to social media cultural norms of different parts of the world. How they use social media, the prevailing etiquette and the hidden curriculum is actually what leads to development of Professional identity.

Take-home Messages: Strategies to formalise social media etiquette in medical education must be formulated so that medical professionals may use this platform for development and growth of their professional identity and discourage negative discourse.
#EPOD-PROF: Professionalism

#EPOD-PROF5  Is cheating a fraud? What medical students think about it (9460)

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ABSTRACT:
Background: Cheat is fraud. The practice of cheat in assessments during medical school, not only in Brazil but in several countries is a common practice among students. Do they know that this is something unethical?

Summary of Work: The aim of this work was to investigate the habit of cheat and the idea of the medical students fraud concept. To evaluate this, they answered an instrument divided into three stages. In the first stage, questions were asked about the habit of cheat and the justifications for this act. In the second stage, the same questions and justifications were presented, but the word cheat was replaced by the word fraud. Finally, in the third stage, the respondents compare the two previous stages.

Summary of Results: 335 students answered the survey. 66.6% admitted to having cheated in some assessment activity and 78.1% did not admit to having cheated such activities. Regarding the consideration of cheat as an ethical fault, 89.7% responded that they do not consider cheat as an ethical practice and 70.4% do not consider cheat as a type of fraud in the evaluation process. There was no difference between men and women.

Discussion and Conclusions: Perceiving cheat as fraud is not something that happens during the six years of the course. Students who perceive cheat as fraud are those who study more than eight hours a week. The more the student studies, the more he perceives cheat as a fraud.

Take-home Messages: It is important to stimulate reflective processes in students about their own training, encouraging greater moral competence among students.
#EPOD-PROF: Professionalism

#EPOD-PROF6 Perspectives on the use of Cinemeducation for teaching medical professionalism (8521)

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ABSTRACT:
Background: The teaching of medical professionalism is difficult to describe in concepts for medical students to recognize the importance but it plays an important role in transforming to be good doctors during the training process. Using Cinemeducation (Cinema and education) to teach medical students about the medical profession is an ingenious tactic for medical students to enjoy watching movies, and at the same time, they analyze and think to transform the way they become better doctors in the future.

Summary of Work: The teaching of medical professionalism is difficult to describe in concepts for medical students to recognize the importance but it plays an important role in transforming to be good doctors during the training process. Using Cinemeducation (Cinema and education) to teach medical students about the medical profession is an ingenious tactic for medical students to enjoy watching movies, and at the same time, they analyze and think to transform the way they become better doctors in the future.

Summary of Results: Among twenty-one volunteers, most of them were unfamiliar to Cinemeducation. The qualitative study showed Cinemeducation can provide 3 aspects: medical ethics, professionalism, lifestyles of medical practice accounted for 100%, 71.4%, 66.7% respectively. Medical students showed their empathy to the illness of the patients who suffered and the physician must inform the painful truth about the disease. The result also showed that 61.2% perceived this movie is applicable to generate a mindset of professionalism and over 94.5% have a positive experience and helping them to change the patients perception of humanness.

Discussion and Conclusions: Cinemeducation can help medical students to understand aspects of medical professionalism easily. This method may help a medical teacher to guide and discuss the difficult event that the student may encounter in medical practice. They appreciated the benefits and values of Cinemeducation through reflection, that leads to analysis and synthesis into the Medical professional.

Take-home Messages: The use of Cinemeducation is very useful in medical learning to enhance medical professionalism.
#EPOD-SJDT: Student & Junior Doctor as Teacher

#EPOD-SJDT: Identity formation, mentorship, and paradigm shift of learners to educators: Building a foundation for future medical educators through a Students-As-Teachers curriculum (7536)

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ABSTRACT:
Background: With increasing expectations and interest for medical students to teach, there is an associated need to focus on medical education skill development. Mounting evidence supports various benefits of Students-As-Teachers (SAT) curricula. However, limited SAT opportunities are available across medical schools in Canada. We developed a four-week SAT selective for fourth-year medical students at the University of Toronto to enhance their medical education knowledge and teaching skills. This study evaluated the SAT program and its impact on students development as educators, their experience as both learners and educators, and their future involvement with medical education.

Summary of Work: Students participated in highly interactive small group teaching sessions along with opportunities to teach in non-clinical and clinical environments. A theory-based evaluation approach was utilized to evaluate the SAT program. Evaluation data consisted of pre and post-selective surveys and reflective assignments describing their selective experience and future career aspirations.

Summary of Results: Post-SAT selective, students self-reported greater knowledge and confidence in teaching methods, provision of feedback, medical education scholarship, and interest in further medical education training. Student reflections highlighted three key themes. Identity formation as educators and the importance of mentorship in medical education aligned with the initial program theory of our SAT elective, while an unexpected outcome included a shifting perception on teaching and feedback from the lens of a learner to that of an educator.

Discussion and Conclusions: This study's findings demonstrate the ability of a SAT curriculum to build capacity for future medical educators. Further studies might utilize realist evaluation to determine what contextual and mechanistic factors influence such outcomes.

Take-home Messages: 1. Student-As-Teacher (SAT) programs promote student identity formation as educators, and enhance their understanding of the role of mentorship for career development. 2. Combining interactive small group learning alongside opportunities for application and practice of skills in non-clinical and clinical environments is an effective curricular model for a SAT program. 3. SAT programs enhance knowledge and confidence for teaching, the ability to provide effective feedback and enhance understanding around the impact of language used for feedback as well as the concept of psychological safety.
ABSTRACT:

Background: Peer teaching in medical education has been recognised by the UK General Medical Council as an integral means of acquiring key teaching skills and student development. A rotation based course allows the same material to be delivered multiple times consecutively to small groups, providing an informal and interactive platform. Learning in smaller groups may lead to more engagement and hence better outcomes.

Summary of Work: 42 MBBS second year students signed up to a four-week molecular oncology course, with three topics taught per week. Each topic was delivered in a 30 minute rotation. 16 medical students completed online questionnaires upon completion. The tutee questionnaire consisted of five-point Likert and open answer questions and enquired about course delivery, logistics, advantages and overall evaluation. The tutor questionnaire further assessed the perceived benefits of content delivery and personal development.

Summary of Results: Tutees agreed (17%) or strongly agreed (75%) that 3 smaller sessions were beneficial as opposed to one, and 92% strongly preferred rotation based tutorials to lectures. All students reported that the sessions encouraged active participation and 92% felt more comfortable asking questions, citing sessions as more personal...more comfortable and more informal and interactive. Tutors reported feeling more confident delivering rotation based tutorials and benefitted in repeating the session three times. Skills gained included conveying condensed information effectively and engaging students. Improvements suggested included ensuring parallel sessions ran to time.

Discussion and Conclusions: Peer tutoring is an important supplement to centralised teaching, however, pre-clinical students generally deliver and receive lecture-style tutorials due to its familiarity and ease of organisation. Participation may be lower in this setting due to high numbers, resulting in reduced retention. Small group rotations allow for increased confidence and immediate feedback. Whilst improving engagement and outcomes, this teaching mode may be easily replicated and expanded. Barriers included organisation of participants into groups, variable turnout and providing classrooms. Consequently, such formats may be more relevant in the COVID era through the use of breakout rooms.

Take-home Messages: Small-group rotation based teaching was beneficial to tutees and tutors, providing an interactive environment that fosters confidence. Barriers encountered were logistical. An online course will continue with a larger cohort.
EPOD-SJDT: Student & Junior Doctor as Teacher

EPOD-SJDT3 An exploration of the perceived value of pre-clinical peer teaching - experiences of students and near-peer teachers (7660)

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ABSTRACT:
Background: Near-peer teaching has been a significant part of Medical school for many years. At Barts and The London, the Medical Education Support Society (MESS), a pre-clinical teaching society is the largest student lead society within the university. Motivations for participation within the society, both as a teacher and student were explored in our study.

Summary of Work: Likert style questionnaire were released to participants within the society to students and near-peer teachers. Free text questions were also provided. Thematic analysis was undertaken on free text answers. Results from the questionnaire guided interviews with two groups of volunteers, near-peer teachers and students. Transcripts of the group interview were recorded, and thematic analysis was undertaken on both groups. Common themes were then identified between the two groups.

Summary of Results: A total of 64 students and 8 teachers completed the digital questionnaire. Responses from the digital questionnaire with the most extreme Likert scale were used to guide analysis of the focus groups. Several noteworthy themes emerged from the focus group thematic analysis data collection. Three common main themes were identified through the focus groups: comfort and empathy, role models and professional development, and community.

Discussion and Conclusions: Congruence between near-peer teacher and student was shown to lead to understanding between both groups. Students and peer-teachers believed it was not the content alone that made them feel re-assured for examinations but the act of having another student explain content in a way they found easy to understand. Further motives for being a near-peer teacher were improving their own factual knowledge of certain taught topics and developing interprofessional skills. A key motivational factor was the importance of giving back to the university community. The knowledge and information provided by these sessions, and the positive light MESS holds within the school is highlighted in both focus groups.

Take-home Messages: The application of these themes should be considered in student led teaching societies. Applying these factors toward environment set within the faculty itself may allow for more engagement in medical school. Furthermore, students may even become better doctors by being involved in student led teaching early on in their careers.
ABSTRACT:
Background: Peer assisted learning (PAL) has been proposed as a method of overcoming cognitive dissonance and helping students learn from each other. There are some concerns about the perceptions of students towards PAL, with some perceiving this as being less valuable than teaching by faculty. Micro-learning (learning in small portions of knowledge and time) allows students to chunk small pieces of information, techniques or concepts and assimilate this learning before moving on to fresh knowledge, skills or attitudes. The one minute tutorial (OMT) concept is a form of micro-learning. The aim of this study was to investigate the educational value to medical students of PAL using a One Minute Tutorial (OMT) setting within an Obstetrics and Gynaecology rotation.

Summary of Work: Qualitative research study was performed in a tertiary level maternity hospital attached to a large Dublin medical school. The anonymous clinical programme feedback forms of 208 medical students following a six-week rotation in Obstetrics and Gynaecology were analysed. Thematic analysis was performed until saturation of data. The primary outcome measure was the perceived educational value of the educational intervention.

Summary of Results: Regarding PAL, many students enjoyed the novelty of peer teaching, though some believed the learning benefit was mostly for the presenter. Students reported concerns regarding the validity of information unless confirmed by a faculty member; facilitation by faculty was favourably received. Students chose the topics for discussion; this was useful in both highlighting underemphasised topics and as a tool for revision. The sessions clarified points students were previously unsure of. The sessions afforded an opportunity to develop presentation and public speaking skills. Students reacted to the rapid, bitesize nature of the presentations. A recommendation for a document to compile notes of presentations was identified.

Discussion and Conclusions: PAL was valued as a learning tool in consolidating knowledge and improving presentation skills. In general, students reported a positive experience of PAL, but potential areas of improvement were highlighted.

Take-home Messages: Overall, medical students supported peer assisted learning through a micro-learning format of a One Minute Tutorial. Unexpected benefits - public speaking and presentation skills - were highlighted.
#EPOD-SJDT: Student & Junior Doctor as Teacher

#EPOD-SJDT5 Humanizing CPR Skills Training Through Sharing Peer Experience Among Medical Undergraduates (8432)

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ABSTRACT:
Background: The existing literature focuses on the knowledge and skills components of CPR training, and the attitudinal component is rarely addressed. Therefore, there is a need to explore how peer interaction, learning atmosphere, and communication influence learning effectiveness. Therefore, this project's objective was to evaluate how student sharing their experience would influence students learning & their readiness to perform CPR.

Summary of Work: The present study involved 250 newly joined undergraduate medical students (126 males and 124 females). We then divided them into four small groups A1, A2, B1, & B2. Students at first answered a pre-test and a questionnaire on readiness to perform CPR (RQ-CPR). Students then participated in an instructor-led hands-on skills training. The students of A2 and B1 batches interacted with their senior, who shared their life experiences of performing CPR. Students of A1 and B2 batches underwent only the skills training without any such peer interaction. All the four groups faced skills evaluation, gave the post-test, and completed the RQ-CPR at the end of the training session.

Summary of Results: The students of intervention groups (12.53 ±2.21) scored significantly higher than the non-intervention groups (11.80 ±2.28), as analyzed by the Mann-Whitney U test (p<0.05). The overall scores for RQ-CPR increased after the session. However, the scores of intervention and non-intervention groups did not vary significantly as analyzed by the Mann-Whitney U test. Both groups performed equally well in skills evaluation with a mean score of 35.47 (out of 40) for the intervention group and 35.26 for the non-intervention group.

Discussion and Conclusions: Peer sharing their life experience during CPR training sessions had a significant positive impact on learning, reflected through the higher scores in the intervention group. Both the groups performed equally well in skills assessment and reflected a significant increase in CPR readiness. Therefore, sharing peer experience would be an effective strategy that can be considered in routine CPR training.

Take-home Messages: • Peer sharing their life experience during CPR training sessions had a significant positive impact on learning • Students found it inspiring and motivational to interact with peers and discussing their real-life experiences
#EPOD-SJDT: Student & Junior Doctor as Teacher

#EPOD-SJDT6 Peer-to-Peer Online Education in the COVID Era (9573)

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ABSTRACT:

Background: Peer led teaching (PLT) is the process of senior students (tutors) supporting junior students (tutees) to learn a topic. Numerous benefits to both tutors and tutees have led to the growing popularity and importance of PLT methods in medical education. The COVID-19 pandemic has resulted in the radical transition from in-person to virtual teaching at medical schools around the world. PLT initiatives have never been more vital for supporting medical students.

Summary of Work: The Newcastle Medical Education Society provides PLT covering all elements of the medical degree programme. Four targeted virtual revision lectures for 2nd year students were delivered by senior medical students with the aim of covering high-yield and challenging content as examination revision. Post-lecture feedback surveys were distributed to attendees. Quantitative data (including pre- and post-lecture confidence in core content and the difficulty of the content) collected with five-point scales and free text responses (discussing positive and negative elements of the lectures) were collected. Quantitative data was analysed with descriptive and univariate techniques (including Wilcoxon signed rank and Kruskal-Wallis tests). Free text was analysed with thematic content analysis.

Summary of Results: 328 responses were gathered from 152 unique tutees. Tutees rated their pre- and post-lecture confidence from 1 (not great) to 5 (very confident). Mean pre- and post-lecture confidence was 2.71/5 and 3.83/5 respectively showing an improvement of 22.4% over each lecture (p<0.001). Tutees who attended more sessions rated the difficulty as harder than those students who attended fewer sessions (p=0.013). Mean quality of teaching was rated 4.45/5. Qualitative analysis echoed quantitative results and tutees felt the difficulty of the sessions was ideal. Tutees said the quality of teaching was on par with or above that which they’ve received formally, and that they benefited from the first-hand experience of the tutors.

Discussion and Conclusions: Lectures were well received, appeared to yield significant benefit, and tutees welcomed more challenging content. The results demonstrate that supplementation of formal teaching with PLT initiatives is effective and vital for maintaining students academic confidence through the COVID-19 pandemic.

Take-home Messages: This case study shows how effective and impactful PLT can be delivered safely. PLT initiatives improve student confidence of core knowledge.
#EPOD-SJDT: Student & Junior Doctor as Teacher

#EPOD-SJDT7 Peer teaching during Covid (9708)

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ABSTRACT:
Background: In 2020, medical education worldwide was disrupted due to Covid 19. This led to restriction of students from clinical placement. In Cardiff University the fourth year medical students rotate between 3 clinical placements - Women Child & Family Health, Chronic Disease and Psychiatry/Neurology/Ophthalmology. It was during the 3rd block that Covid Pandemic disrupted the Cardiff students placements. Following these clinical placements the Student Selective Component, which would involve research and audit projects, would normally be completed. This needed to be adjusted to accommodate the restrictions placed on the country. It was during this time the students were challenged to produce an elearning module to be utilised by their peers to support learning.

Summary of Work: The 4th year students were divided into 29 groups based on their clinical placement in Block 1 September 2020. The students worked together through different communication platforms - eg Teams, zoom, messenger etc. to develop an e learning project based on one or more learning outcomes from that placement. The students used the intended learning outcomes to develop their teaching alongside their experiences in clinical areas. This experiential learning was evident throughout the modules produced. Reflecting on clinical practice enhanced their own learning and this was evident in the teaching provided. These 29 modules were distributed to different teams to peer review. Finally, all modules were made accessible to all students to support revision from any clinical teaching that was restricted due to Covid.

Summary of Results: This project allowed each student to be part of a team that developed, peer reviewed and then benefitted from 29 e learning modules. The students developed skills in distant collaborative working, e learning development, peer reviewing. They received over 100 peer reviews and clinical specialists reviews of the learning material produced.

Discussion and Conclusions: 29 e learning modules were developed of a high enough calibre that a library of these learning modules has collated and disseminated into the existing year 4s learning and in readiness for the future students.

Take-home Messages: The students skills in producing e learning for their peers enhanced their own learning as well as providing learning for their peers.
#EPOD-SJDT: Student & Junior Doctor as Teacher

#EPOD-SJDT8 Medical Students as Simulation Educators: Program design and initial implementation (9519)

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ABSTRACT:

Background: As long as the field of medicine has existed teaching has been one of many Physician responsibilities. Medical knowledge and experience are passed down to each generation to groom empowered and skilled successors. More recent decades have realized the importance of educating patients in addition to student doctors. The progressive model of health care invites the patient to be an equal participant in their care, teaching the providers as well as learning from them. As the information exchange among health care providers and patients increases health care cannot continue to rely on the empiric, self-discovered forms of knowledge exchange.

Summary of Work: The University of South Dakota Sanford School of Medicine (USD SSOM) has developed and implemented the Medical Students As Simulation Educators (MSASE) program for medical students. MSASE was designed to provide didactic education on learning theories followed by facilitator-guided utilization of teaching methods during simulation-based experiences. Since December 2019, the program has enrolled 14 student-educators who completed all didactic lessons in addition to leading lowerclassmen during medical simulations. Student-educators, as well as the lowerclassmen student learners, were surveyed after each simulation to assess the experience. Physician facilitators also provided feedback to each student-educator and were present to provide support to all students throughout the simulation. Several changes have occurred since the creation of MSASE due to the emergence of COVID-19. Because simulation education is founded on the appreciation and utilization of technology, many of the required modifications of education delivery necessitated by COVID-19 were an opportunity rather than a complication for MSASE. During this time students gained an additional opportunity to create faculty-approved simulation scenarios subsequently delivered to their peers under facilitator guidance.

Summary of Results: Current analysis of pre and post-activity scores and calculated knowledge gains have shown that student-led simulations and debriefings resulted in the same and, in some instances, increased scores as compared to faculty alone.

Discussion and Conclusions: MSASE continues to enroll students and collect promising data supporting the efficacy of student-to-student education.

Take-home Messages: MSASE was designed to address the need for as well as provide early opportunities for medical students to glean teaching skills.
ABSTRACT:

Background: Medical students are the future teachers of medical universities. Although most members of medical faculty teach medical students, they often do so without formal didactic training. To prepare for a professional teachers role, didactic training in the medical curriculum is necessary. In this scoping review we searched for Medical Students as Teachers (MED-SATS) programs worldwide with focus on outcomes in variation of content and implementation into the medical curriculum.

Summary of Work: Out of 1686 articles screened, 25 articles were included representing 29 MED-SATS programs. The 25 articles included came from 10 countries, including the USA (8/25), Germany (4/25), Australia (3/25), UK (2/25), Canada (2/25), India (1/25), Ireland (1/25), Israel (1/25), The Netherlands (1/25), and Sweden (1/25).

Summary of Results: The MED-SATS programs varied in length and content, with the main topics being educational theory, didactic skills, and content specific skills such as teaching anatomy classes or tutoring peer students. Of the 29 MED-SATS programs found, 10 were elective courses, and 14 were extracurricular courses. Two MED-SATS programs were implemented in the core curriculum: a required MED-SAT spread over the 4-year curriculum, and a 6-week Supervised Training in Attitude, Research and Teaching (START-block) course in which medical students had one week of basic teacher training in their sixth year. The three remainder MED-SATS programs were an intervention or pilot study with different goals.

Discussion and Conclusions: With this scoping review, we found that there is a wide variety in MED-SATS programs and way of implementation in the medical curriculum worldwide. The new Dutch framework plan of learning outcomes for graduated medical doctors is referring to possession of teaching skills. This scoping review will be helpful in implementing didactic training programs into the Dutch medical curriculum thus preparing medical students for their professional role as a teacher.

Take-home Messages: The offer of MED-SATS programs at medical universities worldwide is limited and varies in type of content and implementation into the curriculum.
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ABSTRACT:  
Background: The General Medical Council expects graduates to offer assistance at medical emergencies in hospital and the community. However, evidence suggests medical students and newly qualified doctors feel unequipped and underprepared when faced with pre-hospital trauma. Subsequently, we devised an undergraduate pre-hospital scheme that aims to bridge the gap in student knowledge and increase student confidence when faced with emergency scenarios.  
Summary of Work: The pilot scheme was conducted throughout the 2019/2020 academic year. It was advertised to medical students in their clinical years and students were invited to attend a fortnightly lecture series. A two-stage application process was used to select 26 students for the post-lecture workshops; these were simulation based and peer-led. Nine students subsequently progressing to observerships with the Ambulance Service. This is the first formalised programme that the authors are aware of offering observerships with West Midlands Ambulance Service. After each training session, participants were invited to provide feedback using a five-point Likert scale.  
Summary of Results: Feedback was overwhelmingly positive; most students found the lectures and workshops useful (87.7% and 94.5% respectively). 93.2% of agreed that medical students should be taught the skills demonstrated in the workshops, yet 8.2% of students believed they received adequate teaching of these skills. Nearly all students agreed that workshop coordinators were knowledgeable, professional, and answered questions well (100.0%, 100.0% and 97.3% respectively), and 94.5% found the workshops more useful than the lectures.  
Discussion and Conclusions: In keeping with previous findings, our data confirms that pre-hospital trauma teaching to medical students remains unaddressed in the undergraduate curriculum and suggests the need for further development. The overwhelmingly positive feedback from our student and junior doctor-led programme suggests that pre-hospital teaching can be delivered effectively using a near-peer learning approach.  
Take-home Messages: 1. Pre-hospital trauma teaching to medical students remains unaddressed in the undergraduate curriculum. 2. There is scope for continuation of a formalised pre-hospital trauma teaching programme for undergraduate medical students in the West Midlands. 3. The near-peer approach is effective to deliver this programme, and may improve the sustainability of the programme for years to come.
ABSTRACT:
Background: Peer and near-peer mentoring plays an important role in medical education by increasing student motivation, supervising clinical practice, enhancing learning, and providing positive role models and pastoral support.

Summary of Work: The West Yorkshire Mentorship Scheme (WYMS) was created in 2006 with the aim of providing a framework for clinical supervision, teaching and support by foundation year (FY) doctors for final year medical students. We present results from the most recent student and mentor surveys looking at the organisation of the program and participant engagement over one academic year. We also outline the development of the scheme into an efficient program linking trained FY mentors with final year medical students.

Summary of Results: 40/164 participants completed post implementation surveys. 28 were from mentors and 12 from mentees. 82.5% of responders found the scheme helpful. 92.5% found it easy to contact their mentor/mentee. 97.5% felt they were put in contact with their mentor/mentee early enough in the placement. 30% met with their mentor/mentee monthly, 25% fortnightly, 25% weekly, 2.5% three or more times/week, and 17.5% never. 97.5% stated they would engage with the scheme next year as a mentor.

Discussion and Conclusions: Our survey results highlight the continued success of the scheme. We feel development of the scheme since inception has helped with its success. This includes introduction of lead mentors to coordinate organisation at a local level in each of the seven hospitals affiliated with the University. Moreover other contributions include, creation of a training kit for mentors, awarding of certificates for participation, integrating into the medical curriculum, and moving to a default opt-in for mentors encouraging greater mentor recruitment. Foundations set by these developments and technological advancements in remote communication have also allowed the program to continue in the COVID 19 era.

Take-home Messages: West Yorkshire Mentorship Program is long established, well received and of value to final year medical students and FY mentors. Mentor training, efficient scheme management, active integration into curricula and ensuring effective recruitment is essential for establishing an effective mentorship program.
#EPOD-SJDT: ePOD - Student & Junior Doctor as Teacher

#EPOD-SJDT12 Mock Per Week: A regional near-peer data interpretation course for medical students (8136)

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ABSTRACT:
Background: Near-peer teaching provides students with direct access to tutors who have recently experienced the same examinations. This allows teaching to be highly targeted and directly relevant to the students stage of training. One issue with this method of teaching is that students experience is tutor dependent, making the quality of teaching in-equitable across a region.

Summary of Work: We developed an intensive weekly revision course for University of Bristol final year medical students in preparation for the Bristol Clinical Data interpretation Exam. The programme was successfully piloted in 2019 at Musgrove Park hospital before expanding to 9 different hospitals, in 2020. The programme provided structure to often sporadic junior doctor teaching and ensured a similar teaching experiences for students across the deanery. Sessions were delivered by foundation doctors as weekly 35 question mock exams on predetermined topics in line with the universitys learning objectives. Feedback questionnaires were collected throughout the course.

Summary of Results: The course involved 46 different trainers and 243 students across 9 centers. Students ranked their confidence out of 10, before and after the course across various topics. The post-course confidence survey showed improvements in ECG and X-ray interpretation (+28% and +24% respectively), identification of dermatological conditions (+32%) and an overall 30% improvement in confidence sitting finals exams. 100% of students (n=162) would recommend the course to the year below.

Discussion and Conclusions: The near-peer mock per week format provides students with direct access to appropriately experienced tutors, equitable teaching across a region and topics directly related to University learning objectives. With our course boosting the confidence of students in medical data interpretation and providing valuable teaching experience for junior doctors.

Take-home Messages: - Near peer teaching combines the experience of junior doctors with the accessibility of recently having been through a similar experience. - Near to peer teaching is often sporadic and varies in quality and content. By providing a weekly mock exam and opportunity for discussion, you can ensure similar learning objectives are met by all students across the region.
ABSTRACT:

Background: Near-peer assisted learning (NPAL) and small group teaching have been recognised as important approaches in medical education. Numerous researches have discussed the benefits of these teaching techniques; however, student perceptions of these methods are limited. Our project is aimed at preparing final year medical students for their Objective Structured Clinical Examination (OSCE) and establishing their perception on small group teaching by foundation doctors.

Summary of Work: A team of second year foundation doctors organised a series of interactive tutorials that ran for three months. These tutorials were designed to supplement the medical curriculum of the University of Aberdeen. Case-based teaching sessions ran weekly and covered a wide range of acute medical and surgical topics. An anonymous questionnaire comprised of five Likert-scale and free-text questions was distributed at the end of every session. Students were asked to comment on the effectiveness of tutors, teaching style and suitability of teaching materials.

Summary of Results: 128 students attended 11 tutorials and provided questionnaire responses. 22 second year foundation doctors delivered these teaching sessions. Overall, students were very satisfied with the teaching programme. 100% of students found the tutorials helpful. Free-text answers highlighted that the foundation doctors possessed good knowledge of the subject and provided valuable input, which better equipped them for OSCE. All students also felt that the tutorials were pitched at a suitable level.

Discussion and Conclusions: The foundation doctors involved in teaching were within their first two years of training, hence, familiar with the level of knowledge required by a medical student taking the OSCE. This enabled them to deliver relevant teaching at an appropriate level. Research has demonstrated improved performance in OSCE of students being taught by peers. This could be attributed to the fact that peers communicate in a language and manner that they are likely to comprehend better and relate to; hence retaining information more readily. In addition, foundation doctors commented that their teaching skills, confidence and knowledge improved as a result of participating in the programme.

Take-home Messages: Final year medical students recognise the invaluable and practical role of NPAL and small group teaching in their undergraduate education. These approaches should be encouraged and employed more frequently.
ABSTRACT:
Background: Competence in ambulatory topics is essential in internal medicine. Near-peer teaching improves learner satisfaction and knowledge acquisition, though its impact on outpatient medicine curricula has not been well elucidated.

Summary of Work: We aimed to determine whether the use of interactive, near-peer teaching, shifting content delivery to the learner, will result in improved satisfaction, knowledge acquisition, and comfort. We present preliminary data on the implementation of such a model. Groups of residents were assigned high-yield topics to be presented in an interactive manner by means of a clinical case, content, and literature review. Attendees completed pre and post knowledge questions and surveys assessing comfort with diagnosis and treatment on a Likert scale. A paired t-test was used for mean comparison and chi-square analyses for comparison of the preliminary categorical variables.

Summary of Results: We analyzed 105 pre and 95 post responses for 1 topic presented. There was a significant difference in pre and post-test mean scores, out of 5 questions (pre-test 2.77, SD 0.94; post-test 3.51, SD 0.88, p<0.001). A total of 9.2% of residents felt very comfortable with treatment pre-session, compared to 35.8% in the post group; χ² 20.95, p < 0.001. Further, 7.4% felt uncomfortable with treatment while none did post-session; χ² 7.32, p=0.007; 14.8% felt very comfortable with diagnosis versus 33.7% in the post group χ² 9.97, p=0.002. Additionally, 4.6% felt uncomfortable with diagnosis, while none did on the post-survey, χ² 4.51, p=0.034. Professionalism, teamwork, relevance, and delivery were perceived to be excellent by 79.1%, 76.9%, 75.8%, and 69.2%. Respectively, 74.7% and 67% perceived excellent employment of evidence-based medicine and engaging strategies.

Discussion and Conclusions: The use of a near-peer teaching model is supported by our preliminary analyses demonstrating improvement in testing and comfort with topic diagnosis and treatment.

Take-home Messages: Shifting development and delivery to the learner, via a near-peer model, has shown to improve knowledge acquisition and satisfaction with the quality of education. Similar models can easily be implemented across curricula in undergraduate and graduate medical education.
#EPOD-SJDT: Student & Junior Doctor as Teacher

#EPOD-SJDT15 Effect Of Near-Peer Virtual ECG Didactics On Internal Medicine Resident Comfort Level In Interpreting ECGs (9037)

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ABSTRACT:
Background: Residents enter their training with varying levels of comfort in interpreting ECGs. Direct teaching of ECG interpretation has been shown to improve resident ability to correctly identify ECG abnormalities as opposed to self-directed learning. Near-peer teaching improves learner satisfaction, knowledge acquisition and may be used in the development of fellows as educators. Additionally, effective virtual learning sessions have become essential in the setting of the ongoing COVID-19 pandemic.

Summary of Work: In a prospective cohort study, we aimed to determine the outcomes of virtual, dedicated, longitudinal ECG didactics led by cardiology fellows with attending physician oversight on resident comfort in reading ECGs. All internal medicine residents at University at Buffalo were offered to participate in ECG didactics and invited to complete pre- and post-session surveys. Responses were anonymous and voluntary, collected using online survey. Using a Likert scale, residents were asked to self-rate their comfort level identifying ECGs before and after receiving didactics. Data was collected over a four month period with didactics at regular, monthly intervals. Comfort level was assessed on thirteen unique ECG rhythms in addition to overall resident perceived comfort with ECG interpretations.

Summary of Results: After four months, there was a significant 15.79% increase (p=0.02) in resident-reported comfort level in interpreting ECGs. Increase in comfort-level was greatest for ability to detect ischemic changes (+12.66%, p=0.04), followed by 1st degree AV block (+12.80%, p=0.07), 2nd degree AV block Mobitz Type I (+11.78%, p=0.1), atrial flutter (+10.28%, p=0.06) and ventricular fibrillation (+10.08%, p=0.1).

Discussion and Conclusions: Near-peer virtual ECG interpretation training increases overall resident-reported comfort level in interpreting ECGs while allowing fellows to assume the primary role of educator. We anticipate a further increase in resident confidence upon completion of the 12-month curriculum. Further investigation is being conducted to determine effectiveness of ECG didactics in objectively changing resident abilities to interpret ECGs.

Take-home Messages: Near-peer teaching improves resident comfort level in interpreting ECGs and remains a valuable educational initiative.
#EPOD-SJDT: ePOD - Student & Junior Doctor as Teacher

#EPOD-SJDT16 Mentoring training development for junior doctors as part of a peer mentorship programme: An experience in a UK teaching hospital (9568)

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ABSTRACT:
Background: The COVID-19 pandemic has proven a challenging time for UK trainee doctors. As trainees are redeployed to work in emergency services, medical wards and intensive care units with enhanced rotas, personal and professional development of trainees has fallen lower down on training programme priority lists. The importance of formal mentoring for trainee wellbeing has been highlighted in the NHS Improvement Midlands Working Environment and Wellbeing Guide. Whilst informal mentoring relationships may develop, doctors rarely receive formal training in mentoring to guide them in these relationships.

Summary of Work: We established a formal mentoring scheme in a training deanery in the UK called Trainees Supporting Trainees. This matched foundation year doctors with mentors in medicine and surgery and internal medicine trainee doctors with medical registrars. The aims were to improve junior doctor motivation and morale, establish formal relationships between junior doctors at different levels of training, provide career development and networking opportunities for trainees and provide coaching and mentoring training for mentors.

Summary of Results: 33 pairs of mentors and mentees were created based on mutual career interests. No mentors reported to have received formal mentoring training previously. We worked with the organisational development team in our NHS trust to develop a formal mentoring contract for the pairs to use and mentoring training sessions for mentors in the form of 20 minute lunchtime sessions, covering topics such as the importance of contracting and setting boundaries and questioning styles. Initial feedback from these sessions was positive, and formal evaluation of the scheme will be completed over the next 6 months.

Discussion and Conclusions: Mentoring continues to be an important way for trainee doctors to feel valued, boost morale and find career opportunities. Formal mentoring training is uncommon, however is crucial to support mentoring pairs through their relationship and helps to prevent dropout from the scheme as ways of overcoming barriers are discussed. For doctors, we have found that 20 minute lunchtime training sessions are received and attended well as they easily fit into busy schedules.

Take-home Messages: We present the how a formal peer mentorship scheme can be enhanced by the development of a mentoring training programme and the lessons learnt.
ABSTRACT:
Background: Restrictions due to the Covid-19 pandemic have had a significant impact on delivery of required post-graduate anaesthetic airway education in the UK. In response to this we utilised the Bath Tea Trolley model to provide practical, hands-on training in a multi-disciplinary manner to anaesthetic teams in adherence to current Covid-19 regulations.

Summary of Work: We surveyed post-graduate anaesthetic trainees in South Yorkshire using a mixture of multiple-choice and free-text answers, to ascertain their access to airway training, barriers to accessing airway training and their current confidence in performing certain advanced airway skills. We then delivered practical sessions focussed on emergency Front of Neck Access (eFONA). These mobile 15-minute sessions were delivered to anaesthetic teams in small groups (less than 6 people) during a working operating list. This allowed the whole anaesthetic team to train together in a safe socially distanced way with minimal disruption to service provision during the Covid-19 pandemic. Participants were surveyed afterwards to assess the impact of the session.

Summary of Results: Only 45% of surveyed anaesthetic trainees had received any airway training in the preceding year. The impact of Covid-19 pandemic was reported as a barrier for 58% of trainees. Other barriers to accessing airway training included lack of learning opportunities (54%). Sixty-nine percent of trainees reported they were not confident to perform eFONA. We trained 100 people from the multi-disciplinary team in the eFONA procedure across four half-days. After attending the short focused session 100% of the trainees surveyed reported feeling very or extremely confident at performing eFONA.

Discussion and Conclusions: The global Covid-19 has had a significant impact on post-graduate medical education. In South Yorkshire we have utilised the Bath Tea Trolley concept to deliver high impact practical airway skills training, while adhering to Covid-19 safety regulations. This training was easy to establish, well received and led to improved confidence in performing emergency front of neck access.

Take-home Messages: It is possible to deliver hands-on practical airway training to post-graduate anaesthetic trainees during the Covid-19 pandemic using the Airway Tea Trolley format.
#EPOD-PG2 Developing and evaluating a COVID-secure part-task pleural procedures teaching programme (8324)

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**ABSTRACT:**

**Background:** UK trainee curriculums advocate practising procedures on simulated models in order to develop skills in a safe and controlled environment. Despite this, a survey of 39 pre-specialty trainees demonstrated that only 10% had previous simulated pleural procedures training. A pleural procedure teaching programme was trialled successfully in February 2020 - however, given the COVID-19 pandemic, this session required adjustments. We therefore evaluated whether a COVID-secure teaching programme could improve trainee self-rated confidence and objective knowledge of pleural procedures. We also evaluated attitudes towards such training during the pandemic.

**Summary of Work:** 2 half-day teaching sessions were organised in December 2020 for 9 junior doctors in total, in accordance with hospital COVID-secure policy. The programme consisted of interactive lectures on pleural disease management based on British Thoracic Society guidelines, followed by a demonstration of chest drain insertion and individual procedure practice supervised by senior respiratory registrars. Participants completed pre- and post-session questionnaires that included: - Knowledge-based multiple-choice questions (MCQs) - A likert scale to measure self-rated confidence in undertaking and documenting pleural procedures, as well as managing their complications - Questions to evaluate whether attendees considered simulation sessions useful during the COVID-19 pandemic. Free text comments were also analysed. A repeat questionnaire including knowledge-based MCQs was completed one month after the session.

**Summary of Results:** All participants felt that the session was appropriately COVID-secure; 89% felt such face-to-face part-task simulation remains essential for training during the pandemic. Free text comments were universally positive, with attendees describing the opportunity to practice chest drain-insertion as vital to training progression. The sessions led to improvements in self-rated confidence in pleural drain insertion, documentation and management. Average MCQ score rose from 68% pre-session to 84% post-session, and this score remained high at 87% one month later.

**Discussion and Conclusions:** Focused part-task simulation training can improve trainee knowledge and confidence in pleural procedures. It can be carried out following COVID-secure policies in order to ensure that trainees continue to gain adequate experience in complex medical procedures during the pandemic.

**Take-home Messages:** The COVID-19 crisis does not preclude part-task simulation training, and such courses ensure junior doctors gain appropriate procedure experience and confidence during the pandemic.
ABSTRACT:

Background: The lumbar puncture is one of the important skills of clinical training for post-graduate year residents. Usually, residents learn these procedural skills through the use lumbar puncture simulator. That can improve residents competency and reduce patient risk. However, PGY residents still lack confidence in performing the procedure and frequently perform below expectations. Hence, proper training and enhance their learning motivation are crucial. Use simulated patients to create a clinical scenario in the training course. It can enhance learners learning attitude and motivation. And also help learners integrate knowledge and skills into clinical practice.

Summary of Work: In this study, the experimental group adopted the situated learning, in a well-designed clinical situation, residents dialogue with a simulated patient. They must find a clinical problem and try to explain the condition to the patient. As well as perform a lumbar puncture to obtain CSF. On the other hand, the control group adopted the conventional approach. Residents perform lumbar puncture practices after the lectures. Both groups use a lumbar puncture simulator to practice, and all the learners finish the knowledge test, lumbar puncture skill test. And complete the questionnaires: learning attitude, motivation, and satisfaction.

Summary of Results: A total of 72 PGY residents were recruited in the present study. The experimental group (N=34) adopted the situated learning, while the control group (N=38) adopted the conventional learning. The results showed that the experimental group significantly improved learning achievement, skill scores, learning attitude, and motivation. Moreover, the satisfaction of the learning approach of the experimental group was significantly higher than the control group.

Discussion and Conclusions: In this study, we successfully used situated learning in the lumbar puncture training course for PGY residents. The findings could be a good reference for researchers and teachers in medical education.

Take-home Messages: Situational learning provides learners with a safe learning environment. It helps learners integrate the knowledge they have learned with real situations. This not only promotes the effectiveness of learning but also be very helpful to apply knowledge to clinical practice.
ABSTRACT:
Background: The clinical hallmark of Parkinson's disease (PD) belongs to motor symptoms. The third part of Unified Parkinson Disease Rating Scale (UPDRS) has commonly used for evaluating the motor symptoms of PD such as tremor, slowness, rigidity and gait. For the medical student and post-graduation doctors, it is challenging to be familiar with all of them through lecture-based pedagogy. Virtual reality (VR) is the emerging novel technology applied on medical education. This study investigates post-graduate-year (PGY) residents perception on the VVR-based UPDRS part-III instruction.

Summary of Work: The UPDRS-III assessment was conducted by a movement disorder specialist on a female PD patient. The VR-based video was recorded by Gopro Fusion in the length of 10 minutes. The PGY residents watch the VR video with the same wearable devices. The instructor and PD patient located in their central visual field, and the instructions were displayed in their left and right visual field. After finishing the tutorial, the trainee was asked to complete a 13-item questionnaire, including their understanding of this subject matter, and their VR-based learning experiences. The 7 point Likert scale was used to rate participants responses (from 1= Very dissatisfied to 7= Very satisfied).

Summary of Results: In total, 58 PGY residents participated this study. In general, most trainees are positive toward this learning method, with the responses ranging from 5.59 to 5.97. Nine out of total 58 trainee reported some discomfort during the tutorial, such as dizziness and dazzling feeling. There were notable differences in the feedback between trainees with and without the discomfort, especially the aspects of willing to receive more VR-based learning, and recommend others for VR-based learning.

Discussion and Conclusions: VR-based learning is a novel tool for the medical education, especially for the neurological examination which requires a detailed and comprehensive observation. However, possible intolerance to VR may affect the further willing of receiving VR-based course. It is necessary to minimize those undesirable effect for producing the future VR video.

Take-home Messages: VR-based learning can be used as self-study aid for the neurological examination which requires a detailed and comprehensive observation.
#EPOD-PG: Postgraduate Training

#EPOD-PG5 Tips for Implementing a Research Program for Ophthalmology Residents in Latin America (8876)

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ABSTRACT:
Background: In a survey of 138 residency programs in Latin America, programs reported that residents participate with much or some frequency in research studies; however, in a significant number of programs (22%), residents participate infrequently. This contributes to the low numbers of publications in the region: in a retrospective work that evaluated the scientific production of Latin America between 2006 and 2015, Carrillo Galván et al. found a total of 1,510 articles published for a total of 20 countries compared to an annual average of 2,253 in the United States (Brazil, leading the region, averaged 85.4 publications per year).

Summary of Work: We present our experience in the incorporation, implementation and development of a research area in our resident training program, and provide recommendations for those willing to develop a research program for residents. The program was developed along three years, coinciding with the total duration of the residency program. On their first year, residents attended didactic lectures on research methodology; they formulated the research question, conducted the literature search, chose their tutor and participated actively of research grand rounds and journal clubs. On their second year, residents wrote down the research protocol and got it approved by the institutional ethics committee. On their third year, residents carried along the protocol, wrote the manuscript and presented it orally to peers and experts.

Summary of Results: In the 6 years since we started with the research program the Department increased the number of evaluated protocols from three to 68; 22 research papers were presented in congresses and meetings, and 10 were published in peer-reviewed journals.

Discussion and Conclusions: Some tips to keep in mind: 1) consider protected time for residents to work on their research projects; 2) the program leadership should be committed to the endeavor; 3) tutoring by methodology experts is ideal; 4) participation of interested faculty is desirable; 5) residents need formal instructions on every step of the process; and, 5) residents need to receive feedback on the methodology and disciplinar aspects of their projects.

Take-home Messages: Team work and commitment of program leadership, faculty and methodology experts proved to be crucial for the implementation of a research program for residents.
ABSTRACT:
Background: The 2020-2021 residency application cycle will be dramatically different, as the COVID-19 pandemic directly resulted in changes to the interview process. The American Association of Medical Colleges recommended suspending in-person visiting rotations and interviews. Visiting rotations serve as opportunities for students to showcase their abilities, network, and get to know residency programs. We aim to describe how orthopaedic surgery residency programs are adapting to the COVID-19 pandemic through social media outreach, virtual sub-internships, and open houses.

Summary of Work: The Electronic Residency Application Service was searched for Orthopaedic Surgery residency programs, and Twitter, Instagram, and Facebook were assessed for departmental and residency program accounts. Social media accounts were reviewed for posts about virtual sub-internships and open house events. Program websites and The Visiting Student Application Service were reviewed for virtual opportunities. The American Academy of Orthopaedic Surgeons website was reviewed for virtual opportunities.

Summary of Results: In total, 94 (49.5%) were present on Twitter, Instagram, or Facebook and a total of 157 accounts were identified. Facebook was the least utilized social media platform. Departmental Twitter accounts were more utilized than Instagram (22.6% vs 8.9%), while residency programs favored Instagram over Twitter (28.4% vs 8.9%). Four virtual sub-internships were listed on VSAS and none were identified through AAOS.

Discussion and Conclusions: The COVID-19 pandemic has prevented traditional in-person evaluation. Orthopaedic surgery residency programs responded by increasing social media outreach, particularly through Instagram. Virtual sub-internships are not a major method for outreach. Some programs offered virtual open-houses.

Take-home Messages: We recommend applicants utilize social media for the 2021 and 2022 match.
#EPOD-PG: Postgraduate Training

#EPOD-PG7 Building capacities of medical students towards Meaningful Engagement in Accreditation and Quality Assurance (9452)

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ABSTRACT:
Background: Accreditation, as a formal quality assurance tool, is directly improving medical education by holding medical schools accountable towards standards. The International Federation of Medical Students Associations, representing more than 1.3 million medical students worldwide, selected Health Workforce Regulation and Accreditation as its Global Priority for 2020/2021, an area of focus to address and develop resources for meaningful student engagement in the accreditation process.

Summary of Work: The Standing Committee on Medical Education (SCOME) created a Small Working Group, which main focus is to develop a set of resources to capacitate medical students on meaningful participation in the accreditation process and to define models of meaningful students engagement in it. At the same time, the SCOME International Team works on development of the annual Accreditation and Quality Assurance Week campaign. Both projects are done with the collaboration and support from the World Federation for Medical Education (WFME).

Summary of Results: A set of key competencies will be developed and included in the toolkit and further used to develop a workshop. The campaigns impact will be assessed through Online Meetings and a Social Metrics Map with our members, after its promotion in April. On another note, the toolkit will be promoted via webinars, and its impact will be assessed through Online Meetings and assessment form. All results will be completed in July and presented at AMEE2021.

Discussion and Conclusions: There is no universal model of meaningful students engagement in accreditation since there are a lot of variables. From regulation, administration, institutional support and flexibility of medical education systems, medical students need to continuously advocate for meaningful engagement in the process of formal accreditation and to be considered as an active stakeholder in this process at all levels.

Take-home Messages: The current status quo of student engagement in accreditation is still insufficient, either because of weak policies to engage students in the process or from a lack of interest from the student body. Raising knowledge, skills and attitudes through capacity building is one of the ways to improve it, and subsequently a way to improve the quality of medical education worldwide.
ABSTRACT:

Background: A recent national survey shows only 45% of paediatric consultants participate in research (RCPCH, 2015). With this in mind, we designed a survey for paediatric trainees working in a Neonatal Unit, to assess what their experience and perceived barriers were to research. Our survey demonstrated that 62% of respondents (n=13) did not feel confident that they had the research skills expected for their stage of training. However, 77% were interested in gaining further research experience. Our survey highlighted several barriers to participation, including time constraints and a lack of apparent opportunities, consistent with qualitative research findings (Mustafa, 2018). This highlighted a need for initiatives to support trainees in pursuing research opportunities, so that we develop a workforce with robust research skills.

Summary of Work:

Aim: To implement effective and reproducible strategies for improving access to research. Methods: Multiple events were held over a 6-month period including weekly Journal Clubs, a Research Opportunities Event exploring options for developing research skills and an Interactive Research Workshop for practical training on trial recruitment and consent. A research newsletter was developed to communicate opportunities and engage staff with studies running within the department. Trainees completed a survey before and after events to evaluate their efficacy.

Summary of Results:
100% of respondents (n=12) attended Journal Club, 67% attended the Research Opportunities Event and 75% attended the Interactive Workshop. Feedback was very positive. 100% of trainees who attended Journal Club felt their knowledge of research methods had improved. 100% of trainees who attended the Research Opportunities Event had a better understanding of the research curriculum. 100% of trainees who attended the Interactive Workshop felt more confident obtaining consent for clinical trials. 100% of trainees felt confident or somewhat confident they had the research skills expected for their stage of training, in contrast to 38% prior to attendance.

Discussion and Conclusions: Our events were well received and improved confidence amongst trainees. The sessions were easy to implement and could run on a routine basis to enhance participation in research, which is essential for learning and innovation.

Take-home Messages: Research-themed teaching and interactive workshops prove an effective strategy for improving trainee confidence, skills and knowledge of research activities.
#EPOD-PG: Postgraduate Training

#EPOD-PG9 The impact of a palliative care educational program on attitudes toward care among postgraduate residents (9299)

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ABSTRACT:
Background: The Department of Health (DOH) in Taiwan officially announced the Post Graduate Year (PGY) Program in 2003. The program has modified from three months to two years of training. In combination with the PGY training for two years after graduation in 2019, the overall medical education has more comprehensive planning and connection from integrated medical education to school and to clinical. However, there is a lack of palliative care courses in undergraduate education, and the attitudes toward palliative care among PGY doctors might not be so apparent in Taiwan.

Summary of Work: Taipei city hospital is well-known for its dedication to hospital-based and home-based palliative care. Department of education in Taipei city hospital holds lectures and group discussion classes for PGY doctors to teach them to be familiar with the concepts of palliative care from different aspects. We use the clinical scenario and videos to facilitate palliative care simulated learning activities for PGY doctors. We asked all PGY doctors to finish the pre- and post-test to show their attitudes toward palliative care.

Summary of Results: We included 153 PGY doctors (male/female: 82(53.59%)/71(46.41%)) from March to October 2018 in our hospital. Fifty female PGY doctors (70.42%) and sixty male PGY doctors (73.17%) have heard the information or read books about palliative care (p=0.1554). Only 29.28% female and 23.17% male PGY doctors have participated in the palliative care before. After the training program, most of the PGY doctors agree that palliative care does not only mean passive and conservative treatment and hope that they should have learned the palliative care in senior high school rather than after becoming a college student. Besides, almost all of the PGY doctors have a positive attitude toward palliative care and confidence to tell the bad news and provide adequate health care for patients with terminal diseases.

Discussion and Conclusions: In addition to routine training (medical record writing, infection prevention and control training course, etc.) for PGY residences, Taipei city hospital provides palliative care courses as well. After the training program, PGY doctors all have the concepts that to cure sometimes to relieve often to comfort always.

Take-home Messages: The impact of palliative care educational programs has positive attitudes toward care among postgraduate residents.
#EPOD-PG: Postgraduate Training

#EPOD-PG10 Application of transnasal endoscopic technique in the teaching of rhinology (9671)

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ABSTRACT:
Background: Transnasal endoscopic technique is an essential skill in the modern rhinologic surgery. However, the otorhinolaryngologic residents could not get the chance to touch this field until they faced the real patients, which leading to reduced levels of confidence amongst trainees. A preliminary study found that more than 70% of otorhinolaryngologic trainees felt they lacked exposure here and wanted to improve this skill. The aim of this educational project was to explore the application of transnasal endoscopic technique in clinical probation teaching of rhinology.

Summary of Work: 20 first-year residents from the department of otorhinolaryngology of the first affiliated hospital of Sun Yat-Sen University were selected. Three types of setting were designed to master the essential skill in transnasal endoscopic surgery, like drilling the shell of raw eggs et al. Meanwhile, confidence levels were assessed in 4 domains using a 5-point Likerts scale both pre and post intervention. Qualitative data on the impact of the intervention was also collected.

Summary of Results: This small-scale study demonstrates an essential role of transnasal endoscopic training course before the residents involving rotating schedule. The students reported great satisfaction in teaching and learning. There was a 100% increase in confidence levels with regards to setting up the equipment.

Discussion and Conclusions: This was a valuable novel training opportunity and confidence levels increased across all domains following our educational program. Trainees valued the experience and left very positive qualitative feedback.

Take-home Messages: Junior doctors are more likely to benefit from the use of game-like technological aids in their surgical procedural skills training. In this kind of the program all the material for the courses are easy to set up especially in the developing countries.
A study on the students’ perspective of Post Graduate Education in a Surgical subject (ENT) in India (9183)

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ABSTRACT:
Background: Residency training is emotionally, physically and intellectually challenging. An ideal post-graduation programme consists of a learning and working environment that entails superior quality in safety, care and professionalism; appropriate exposure to variable cases, patients, investigations and procedures; trained faculty to teach, evaluate and mentor; equipment and facilities to provide standardized healthcare. There is discontent on the surgical training amongst residents in India for a plethora of reasons. This study aims at obtaining the trainees perception of Post Graduate training in a surgical subject (ENT) in India, in respect to: Teaching learning and Assessment

Summary of Work: A cross sectional study was conducted by mailing, as well as sharing in various social media platforms, a pre-validated questionnaire amongst the residents of ENT and Head Neck Surgery in the country.

Summary of Results: The total number of ENT postgraduates in the country at the point of study was 991. 29.1% of them responded to the questionnaire. Most of the respondents (70.9%) did not like the curriculum as they felt that it was not structured properly, inadequate infrastructure, the surgical training was not guided, inadequate opportunity for cadaver dissection in the institute. 86% of the respondents were confident of managing an emergency in periphery however only 36% felt confident to manage a surgical emergency.

Discussion and Conclusions: Assessment drives the teaching learning in a curriculum, so it is imperative that even if the curricular modifications are done if the assessment method is not changed, not much will change on ground. A surgical residency programme should stress on self-assessment, as it is a key feature of adult learning. The trainees should be able to chart their own progression - achievement and learning. The trainee should be able to self-assess whether he/she has learnt/confident of the learning outcomes: the clinical and surgical skills, communication skills and other soft skills. Feedback should form a pillar of the training where residents can give feedback, unbiased and unthreatened and a system should exist to address those.

Take-home Messages: Postgraduate education in a Surgical subject should be competency based. He/she should be given the liberty to chart his/her own growth and learning of the necessary surgical skills.
#EPOD-PG: Postgraduate Training

#EPOD-PG12 Online Modular Surgery Rotation for Postgraduate Internship at UERMMMC During the COVID-19 Pandemic (8256)

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ABSTRACT:
Background: Medical Education had been forced to expeditiously shift towards distance learning processes due to the COVID-19 pandemic. Fortunately, the technological tools to do so are already available, adaptable and affordable, with practically all-digital-native students.
Summary of Work: We designed a structured modular online surgery rotation using Canvas learning management system for the first month of the postgraduate internship to the Department of Surgery. The combined synchronous and asynchronous rotation addressed surgery-related skills, knowledge, research orientation, and attitude required for medical interns and incorporated quantitative and qualitative assessments.
Summary of Results: A total of 90 postgraduate interns have successfully completed the surgery rotation and an online informal student evaluation received favorable results and generally positive comments. We have successfully applied the online first month surgery rotation for postgraduate interns. Following the completion of the rotation, students demonstrated proficiency in recognizing surgical instruments, performing surgical knot-tying, abdominal examination and bandaging. They were likewise able to perform critical journal appraisal and apply the concepts and principles of surgery in the evaluation and planning of management of common surgical cases.
Discussion and Conclusions: The modular design utilized adult learning theory in order to overcome the limitations of the remote platform. Student-centered tasks, problem-solving and presentations were favored, including skills review and return demonstration, and interactive on-the-spot case analysis and discussions. These encouraged students to study beforehand and provided immediate individualized feedback followed by expert refinement. Students were established independent learners and easily adapted to the online platform. The approach was appreciated based on student feedback. Majority of students felt the rotation was effectively executed: modules were organized with good time management and conduct of sessions were effective with relevant and high quality content.
Take-home Messages: The high satisfaction ratings and excellent performance of the students illustrates the success in meeting the objectives of the rotation. An online learning platform, even for a heavily skills-based rotation such as the surgery rotation for postgraduate interns, can be effectively done.
#EPOD-PG: Postgraduate Training

#EPOD-PG13 Barriers to Virtual Learning among the Residents and Fellows in an ACGME-I Pediatric training Program in the State of Qatar (8428)

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ABSTRACT:
Background: The COVID-19 Pandemic had a tremendous effect on our daily life in all aspects including the education system. The outbreak lead to shut down in most of the educational institutions. Once it was realized that the pandemic will last long, the virtual learning has emerged as a substitute for off-line/face to face learning. Our Pediatric Program shifted to virtual learning within few weeks of shoot down. Thus, we decided to study the barriers of this learning modality among the pediatric residents. Our aim was to identify the barriers and challenges of virtual learning faced by pediatric trainees as part of the pediatric education during pandemic of COVID-19 disease.

Summary of Work: An online survey was created and shared with all pediatric residents during 11-12/2020, Qatar. The survey evaluates the trainees previous experience in virtual learning before COVID-19 pandemic, their IT (information technology) skills, and the difficulties they faced during this form of activity.

Summary of Results: Total of 82 responses were collected, 59 residents and 23 fellows. 25(31%) indicated that they have previous experience with virtual learning, while 57(69%) does not. 51(62%) of them had well IT and 28(34%) had fair IT skills and only 3 (3%) had poor IT skills. In regard to the difficulties faced with virtual learning, 57(70%) believe that virtual learning environments distractions is a major impediment to this modality of learning. 18 (24%) think time constraint with virtual learning as major obstacles. 18 (24%) indicate absence of training program/intuitional implementation strategy and support. 12 (6%) had lack of IT skills and support. 5 (3%) cost and internet accessibility was the least obstacle to virtual learning.

Discussion and Conclusions: Our study showed that virtual learning might be an alternative modality of education especially during pandemic. However, arising barriers need to be addressed by the program leaders in order to improve it.

Take-home Messages: There are multiple barriers to virtual learning that can works as obstacles to this promising modality of teaching.
#EPOD-PG: Postgraduate Training

#EPOD-PG14 So you want to be a plastic surgeon? Developing an induction bootcamp during the COVID-19 pandemic (9267)

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ABSTRACT:
Background: Plastic surgery does not form a substantial part of the undergraduate curriculum and as such, junior doctors may have little/no experience prior to commencing a core surgical or junior clinical fellow position. The objective of this work was to design, implement and evaluate a full-day interactive bootcamp for new starting junior doctors, to be delivered alongside trust-wide and local inductions. An adequate induction is paramount during the era of COVID-19, having to adapt to changing protocols, staff shortages, and the lack of the safe provision of traditional bedside teaching.

Summary of Work: Following a formal learning needs assessment, a programme for the bootcamp was designed considering the identified learning needs of the target audience, as well as the platforms best suited to deliver a reproducible induction programme that would be safe for teachers and learners. This included the provision of an online portal of learning material, a virtual learning needs meeting and a socially distanced practical bootcamp. The bootcamp was delivered over a full day by the senior clinical team and surveys used to objectively assess effectiveness.

Summary of Results: The majority (80%) of attendees had 1-6 months prior experience and were planning to pursue a career in plastic surgery. Learners confidence to manage a plastic surgery on call increased from 2.9/5 to 4.3/5 following the bootcamp. The overall usefulness of the day was rated as 8.2/10.

Discussion and Conclusions: Feedback from the bootcamp has shown it to be a valuable addition to the local induction process, enhancing learners confidence in the key skills required to manage a plastic surgery on-call shift. The initiative has been fully supported by the department and will continue to be delivered for each new starting cohort. This work demonstrates the feasibility and effectiveness of a multimodal induction process, that is of particular benefit in the COVID-19 era with traditional bedside teaching and courses being more difficult to access.

Take-home Messages: Overall, this work demonstrates the importance of adequate clinical induction in the provision and maintenance of a knowledgeable and safe junior surgical team working in a specialised clinical field during challenging times.
#EPOD-PG: Postgraduate Training

#EPOD-PG15 An activity theory analysis of residents’ behavior of following up patient outcomes after handoffs (9089)

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ABSTRACT:
Background: Knowing the patients disease progressions or outcomes is pivotal for medical trainees to improve their clinical reasoning skills and ability to develop treatment plans. And it helps the trainees to self-evaluate and improves themselves to perform better for similar situations. This study used the cultural-historical activity theory as a framework to explore the behaviors and influencing factors of the trainees who tracked their patients outcomes after handoffs.

Summary of Work: The research subjects were residents who were trained in a tertiary teaching hospital in Taipei City, Taiwan. Sixteen PGY1 to PGY4 residents participated in the semi-structured in-depth interviews about their experiences of tracking former patients after their handoffs. Using activity theory as a theoretical framework, we conducted a constant comparative thematic analysis of the interview transcripts to identify important themes.

Summary of Results: Two activities were identified: self-directed learning and training requirements. The trainees memorized the patients medical record numbers and tracking their outcomes majorly using electronic medical record systems. There were several obstacles commonly occurring during the process of tracking former patients: busy clinical works, distant relationships with patients. And some residents expected an information system that helps them keep the information of patients they are interested in and reminds them when patients are discharged or return to the hospital.

Discussion and Conclusions: All of the residents had experiences of tracking former patients. This study explored residents motivations and behaviors of tracking patients outcomes after handoffs. Through the lens of culture-historical activity theory, the researchers identified some common disturbances and needs of residents while trying to track the patients they were interested in or assigned.

Take-home Messages: The residents described two different patient-tracking activity systems driven by internal and external motivations. The common disturbances included busy clinical works, distant doctor-patient relationships.
#EPOD-PG: Postgraduate Training

**#EPOD-PG16 Preceptor Training on Writing Readable and Accurate Incident Reports (8004)**

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**ABSTRACT:**

**Background:** Understanding accurate facts based on incident reports is important for investigations. As the description of incident report is mainly open-ended; facts are lacking, and subjectivity is mixed. Additionally, Japanese language tends to omit the subject and obscure the subject-predicate relationship. Therefore, collecting facts accurately is challenging. Educational methods for incident reports have not been established. Attending doctors, who are residents preceptors, also do not know how to write incident reports. In this study, preceptor training on writing readable and accurate incident reports was conducted, and the results were analyzed.

**Summary of Work:** In the 60-minute training session, trainees first watched a video on prescribing errors. Next, trainees spent 10 minutes writing the incident report without any tips. The instructor then provided tips, including using When, Where, Who, What, Why, How, itemizing sentences based on time of events, and keeping sentences short. Trainees spent another 10 minutes improving their incident report using these tips. Feedback was obtained using a questionnaire based on the ARCS model. To compare the incident reports with and without tips, text analysis was conducted using NVivo (QSR).

**Summary of Results:** Analysis of incident reports of 15 trainees showed that the average number of occurrences of incident-related subject terms increased up to 2.6 times, and the number of letters also increased by 1.2 times in incident reports with tips than without. Additionally, the short and chronological descriptions facilitated following the flow of behavior of each person involved. All trainees rated the questions positively.

**Discussion and Conclusions:** Trainees received guidance on incident report for the first time; this novelty attracted ATTENTION. Since creating incident reports is compulsory for attending doctors, the RELEVANCE of the training was underlined. Since attending doctors already had experience in creating incident reports, they boosted trainees CONFIDENCE by providing tips. Trainees commented that they would like to teach incident reports to their residents; the training may have motivated them to learn (SATISFACTION).

**Take-home Messages:** Preceptor training on writing readable and accurate incident reports has enabled attending doctors to create high-quality incident reports. This training includes each element of the ARCS, which may motivate preceptors to teach incident reports to their residents.
#EPDO-PG: Postgraduate Training

#EPDO-PG17 Helping our learners to Game-on: Our experience with challenges in using gamification to teach junior doctors (8788)

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ABSTRACT:
Background: Gamified mobile application has been found to increase student engagement, retention and academic achievement. Our department of General Medicine has been using a mobile application Quitch to engage our Post-Graduate Year One (PGY1) doctors, and teach patient safety modules since 2018. We have obtained good feedback from those who have utilized the application for learning. 72% of them found it helpful at work, and 91% found it effective to learn about patient safety. However, we observed that the non-participation and attrition rate per batch of new doctors has been around 35-40%.

Summary of Work: We aim to study how the use of a gamified mobile application can enhance the learning of these junior doctors and engage them continuously to reduce attrition and non-participation rates. Our department implemented new strategies such as regular announcements, briefings, and new modules to engage participants, as well as incentives like cash vouchers. New content was created and introduced periodically to sustain interest. We conducted a questionnaire to ask our learners how they perceive the usefulness of the mobile application for their learning, and their views regarding motivating factors for utilization of the mobile application.

Summary of Results: 74% of the participants perceived that the Quitch application was a more effective educational tool compared to conventional lectures. 76% of them stated that seeing new and interesting content was the motivating factor for participation, while 67% stated that tangible rewards was the motivating factor. However, moving up the ranks in the leadership board (36%) and attainment of badges (41%) are less motivating for them.

Discussion and Conclusions: Our learners are working professionals who differ from students that have different reported motivations in using a gamified application for learning. For our junior doctors, having new and interesting content and tangible rewards were more motivating factors for them.

Take-home Messages: For post graduate learners, having new and interesting updated content, is the most important factor to keep them engaged and motivated.
#EPOD-PG: Postgraduate Training

#EPOD-PG18 Implementation of West Yorkshire Foundation Interim Year (WYFIY)
Doctor online teaching programme during the COVID-19 pandemic (8483)

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ABSTRACT:
**Background:** The COVID-19 pandemic caused significant disruption to UK medical schools with final year students registered early as interim foundation year (FiY) doctors. This occurred alongside cancelled placements, teaching and exams leading to missed learning opportunities. The project aim was to bridge this educational gap by creating an online formal teaching programme tailored to their needs.

**Summary of Work:** The WYFIY programme consisted of eleven lectures provided over Zoom online conferencing. The topics chosen were relevant to those of a newly qualified doctor including; transition from 5th year to FY1, responding to abnormal blood test results, care of the dying patient, the patient with chest pain and, pharmacy and prescribing. Lectures were provided by a combination of internal/core medical trainees and specialty registrars. Talks were advertised to final year medical students at Leeds Medical School. Topics were taught using a case-based approach with Kahoot! online quizzes to encourage interactivity. Sessions lasted approximately 45 minutes to one hour, finishing with attendees completing an anonymous survey. These surveys enabled a dynamic improvement process as well as monitoring the national reach of the programme.

**Summary of Results:** 73% of participants were working as FiY doctors within West Yorkshire with 27% working as far as London, Liverpool, Manchester and Scotland. Attendees consistently reported; improved confidence in their role as a FiY Doctor (96%) and information being clear and easy to understand (97%). Attendees rated the clarity and quality of explanation of concepts of all speakers with an average rating of 4.85 out of 5. When asked about the effectiveness of using quizzes an average of 98.4% either agreed or strongly agreed that they consolidated learning.

**Discussion and Conclusions:** The WYFIY programme teaching approach was both a clear and effective method which demonstrated improved confidence for newly qualified doctors starting work throughout the country.

**Take-home Messages:** An online targeted teaching programme can provide a method of effective medical education for newly qualified doctors. This template provides an opportunity for an annual programme with national potential.
ABSTRACT:
Background: Since the beginning of the COVID-19 pandemic, educational activities were halted due to the increased risk of exposure and transmission of disease. With time, and since the situation became stable, it was decided to resume educational activities in our residency and fellowship programs. This was done through virtual learning modalities, namely Microsoft teams and other programs, which has become a cornerstone in our educational journey. Our aim is to study the perception of pediatric residents and fellows with regards to virtual learning methods during the COVID-19 pandemic. To find what is considered an advantage or disadvantage for the use of such learning modalities.

Summary of Work:
A cross sectional study using online survey conduction between 11-12 /2020. It was shared with 82 participants, including pediatric residents and fellows, in an ACGME-I accredited center. The survey evaluates trainees previous experience with virtual learning, their input with regards to the advantages and disadvantages of using virtual learning. In addition to barriers to learning.

Summary of Results:
Participants with male: female ratio 0.8:1, resident level 1 (22%), resident level 2 (23%), resident level 3 (14%), resident level 4 (12%), Fellow (28%). When participants were asked about the advantages of virtual learning modalities; they stated the following: 82% easy access to online materials, 67% added flexibility and self -pace learning, 55% better time management, 48% comfortable environment for teaching and learning, 44% broader global networking, 33% gaining new technical skills and 26.8% improve virtual communication and collaboration. Of the disadvantages trainee stated as follow: 78% reduced interaction with the presenters, 48% selected social isolation, 37% had lack of self-motivation/self-learning skills, and 16% selected require advance information technology skills. The final question regarding the preference of learning modality, 48% prefers blend of both, 29% preferred internet-based learning modality and remaining 23% preferred face-to-face learning experience.

Discussion and Conclusions: Pediatric trainees believe that virtual learning modalities are beneficial in training especially during pandemics and prefer to use it; however, due to the few disadvantages, its preferred to be used in conjunction with typical face-to-face didactics whenever its applicable.

Take-home Messages: Virtual leaning represent a promising modality of teaching during pandemics.
ABSTRACT:
Background: Medical guidelines to assess fitness-to-fly for commercial airline passengers exist, but clinicians outside of the field of aerospace medicine may not know where to find this information quickly. Further, a general understanding of flight physiology is essential for assessment. Over 300,000 medical apps exist - many of which are educational apps to aid medical practise. Aerospace medicine is lacking in this digital revolution. An app serving as a central hub of searchable guidelines and physiology fundamentals as well as links to authorities and literature would allow clinicians to access knowledge quickly and easily.

Summary of Work: An app, AeroMedGuide, was designed using the problem-audience-implementation-analysis framework. Version 1.0 was created using GoodBarber software. A google form collated feedback from 6 clinicians using the following questions: • Would you use an app at work (hospital/GP practice/community)? • Is this app relevant/useful in your professional role? • Having tested the AeroMedGuide v1.0 app, is it easy to use? • Having tested the AeroMedGuide v1.0 app, please give feedback. Which features work well? Any improvements? • Which functions would you like the MVP v1.1 to have? Some of these are in v1.0 and some are not.

Summary of Results: AeroMedGuide v1.0 has the following functions; welcome page with disclaimer and instructions, menu, useful links (aviation medicine websites: CAA, IATA, AsMA), search function, summaries of guidelines by condition, and an educational blog on physiology during flight; all with reference lists and last checked date stamps. Survey responses included 100% on using an app at work, 83.3% useful in their professional role, 100% easy to use. Some suggested improvements included more colour, and more articles (only one physiology summary was written for v1.0).

Discussion and Conclusions: AeroMedGuide could serve as a useful and popular platform to amalgamate current, sourced medical guidelines for assessing fitness-to-fly in commercial airline passengers. There was an overwhelmingly positive response to v1.0. Following MHRA guidelines AeroMedGuide would be classed as professional medical education and not a medical device.

Take-home Messages: An app acting as a hub of guidelines on assessing fitness-to-fly in airline passengers is needed. AeroMedGuide v1.0 has been developed to fill this gap in the postgraduate educational market.
# EPOD-PG: Postgraduate Training

# EPOD-PG21 Standardizing Junior Doctor Teaching by Using Virtual Patients (8264)

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**ABSTRACT:**

**Background:** Following completion of their medical training, junior doctors undertake a rotation in general internal medicine before proceeding to specialist training. During this period it is preferable that these doctors are exposed to patients with many different clinical presentations. However, due to the random nature of hospital work, there are large variations in the types of patients junior doctors treat. In order to ensure that all doctors are exposed to a minimum amount of clinical conditions we have created a virtual environment where doctors can treat virtual patients. These virtual experiences will ensure that doctors have obtained sufficient knowledge of general internal medicine before proceeding further with their medical training.

**Summary of Work:** At Stavanger University Hospital in Norway each semester 16 doctors commence their internal medicine rotation. The doctors who started in September 2020 were randomly allocated to a Virtual Reality group (VR group) and a Standard Teaching group (ST group). During their 4-month rotation, the VR group followed the standard postgraduate teaching program along with virtual reality teaching sessions. The pilot project focused on covering three endocrinological cases covered by the Norwegian national junior doctor-training syllabus: adrenal failure, thyroid storm and acute hypothyroidism. The other group followed the standard postgraduate teaching program. The junior doctors in both groups were tested for their knowledge of the presentation, diagnosis and management of these conditions prior to their general internal medicine rotation and at the end of this rotation.

**Summary of Results:** All the doctors in the VR group gave positive feedback on the learning experience; they reported that the training was relevant, that they were able to learn from the experience and that they found the equipment easy to use.

**Discussion and Conclusions:** Sufficient exposure of junior doctors to a wide range of clinical conditions is difficult to achieve in the hospital environment. To address this issue we have standardized part of the training by using virtual reality. We have demonstrated that virtual reality teaching can be a successful addition to post-graduate medical training.

**Take-home Messages:** We have demonstrated that virtual reality can be a valuable addition to post-graduate training.
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ABSTRACT:
Background: Currently, medical residents, who belong to the so-called generation Z entered hospitals for specialist training. This cohort is true digital natives. They learn from both the real medical systems and online information shared by peers from various hospitals. As residents must comply with tacit regulations and norms in the rigid medical hierarchical structure, the way of speaking and communicating on social media is more personalized. The previous publications were usually based on interviews. However, the flourishing posts and responses on social media are critical non-intrusive data that might reflect different perspectives.

Summary of Work: We conducted a content analysis of the posts and responses on the most popular Facebook fan page among Taiwan residents. We collected the contents on @twResidencyMeme (https://www.facebook.com/twResidencyMeme) from September 2019 to August 2020. We excluded announcements of board regulations and activities, and a total of 261 posts of page-owner and related responses were collected. After several rounds of coding a small number of transcripts by three researchers, we established the coding system.

Summary of Results: The 261 coded posts were distributed across 17 content categories. The frequent content categories identified in the data were low personal accomplishment (21%), followed by tension doctor-patient relationship (15%), negative example, i.e., poor attitudes and unethical behavior showed by senior doctors (12%), and unsatisfactory equipment and work environment (7%). It is noteworthy that some of the information is potentially more easily found on social media than in face-to-face interviews. The negative organizational culture (8%) and two-faced supervisors (5%) have many responses. However, residents do not talk about that to medical teachers. The categories frequencies were even as high as the well-known stressor, such as work hour restrictions (5%) and lack of self-confidence (5%).

Discussion and Conclusions: Regarding professional identity formation is a process of socialization. Social media is a virtual community with vast numbers of users. Social media communication is overwhelming. Medical educators may make the best of these materials by enrolling representative posts as examples in the residents training curriculum to facilitate the identification and making reasonable decisions in the face of dilemmas.

Take-home Messages: The hot topics on social media can be representative of emerging dilemmas for residents.
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ABSTRACT:
Background: The Recommended Summary Plan for Emergency Care and Treatment (ReSPECT) was created to facilitate discussions around end of life care (EOL) and escalation, with a focus on patient preferences. Studies have shown that doctors and medical students often feel underprepared or uncomfortable having these discussions. Our aim was to create a session for foundation year 1 and 2 doctors, involving a simulated patient conversation, to improve awareness of the ReSPECT form and its utilisation in escalation discussions.

Summary of Work: A bespoke teaching session was created for junior doctors. Participants are asked to discuss a case and determine an escalation plan, with support from a facilitator. They are invited to undertake a simulated scenario, with an actor playing a patient relative. The participant is expected to discuss escalation and complete a ReSPECT form. The scenario is followed by a facilitated debrief, with discussion and feedback to enhance learning. Given the Covid-19 pandemic, potential barriers of personal protective equipment (PPE) are explored. Participants have an opportunity to discuss any real cases in which they have been involved, should they wish.

Summary of Results: Before and after questionnaires are completed, based on confidence in four domains. Following the session, participants reported improved confidence in making escalation decisions (100% agreed or strongly agreed vs 12% prior to session), facilitating ReSPECT discussions (100% vs 18%) and discussing treatment plans, for example, escalation to intensive care (100% vs 24%). 76% noted PPE as a significant barrier prior to the session, with 35% afterwards. Data collection is ongoing.

Discussion and Conclusions: Results show junior doctors felt their confidence leading escalation discussions improved following the session. It is hoped that this can bridge the gap between graduation and increased responsibility following the foundation programme. Work is being undertaken to expand this session to other professionals, with specific scenarios for varying levels of training and specialty. This session will be integrated into a frailty training day.

Take-home Messages: A simple, supportive session for junior doctors can improve confidence in escalation and EOL discussion, and increase awareness of ReSPECT. It is hoped that this leads to improved communication with patients in clinical practice, which could be studied future.
#EPOD-PG: Postgraduate Training

#EPOD-PG24 Ward Call Buddying for Interns (7492)

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ABSTRACT:
Background: Buddying new employees with experienced colleagues of a similar level is a common orientation technique within medicine despite little evidence to support its use. We aimed to examine the utility of buddying for interns commencing ward call, define the structure and contents of buddied orientation, and identify features associated with positive buddying outcomes.

Summary of Work: Cross-sectional survey of interns who completed a buddied ward call orientation shift at the Princess Alexandra Hospital in 2018.

Summary of Results: From 64 contactable interns 44 completed the survey. Interns rated buddying outcomes positively, 81% stated buddying helped orientate them to ward call and 91% agreed their buddy was supportive. Interns who stated buddying improved their readiness to perform ward call independently reported their buddies being physically present for a much higher percentage of their shift (47% compared to 10%, p <0.001) and spent less time alone (15% compared to 60%, p <0.001) compared to those who did not feel ready for independence. The most common discussion topics were housekeeping (using a pager 93%, location of handover 90%) and triaging (80%), clinical matters were the least discussed. The friendly, supportive and helpful nature of buddies was the most represented theme amongst the comments.

Discussion and Conclusions: Buddying is a useful orientation practice for interns on ward call. Buddying outcomes are improved when buddies spend more time physically present with interns. Discussion topics between buddies and interns focussed on logistics such as using a pager rather than clinical management.

Take-home Messages: IMPLICATIONS FOR PRACTICE: These findings have been translated into a formal education program for ward call buddies at the Princess Alexandra Hospital, consisting of a one hour workshop supplemented by a written guideline. Repeat surveying is occurring to determine if the education program further improved intern ward call orientation outcomes.
#EPOD-PG: Postgraduate Training

#EPOD-PG25 Understanding the Dynamic Between Senior Residents and Fellows on Pediatric Hospital Medicine (PHM) Teams: A Qualitative Study (8713)

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ABSTRACT:

Background: With ACGME accreditation in place for PHM fellowships, fellows are playing a larger role in resident education. However, the impact of PHM fellows on pediatric residency training is not well described. While a study at our institution demonstrated that residents are unlikely to perceive a PHM fellows presence as positive, the individual and systemic factors driving these perceptions have not been explored.

Summary of Work: We aimed to identify the factors that contribute to the dynamic between senior residents and fellows working together on PHM teams. In this qualitative study, a conceptual framework for the senior resident-fellow dynamic was created as a synthesis of multiple educational theories to help guide the development of the interview questions. We conducted semi-structured interviews with 15 senior residents and 8 PHM fellows between April and September 2020. Purposive sampling was used to include senior residents who worked with PHM fellows for at least three day shifts. Using verbatim transcripts uploaded into Dedoose software, two authors coded all responses and identified themes using a thematic analysis approach. These themes were compared with current understanding of learning and autonomy defined in the literature.

Summary of Results: From preliminary analysis, six thematic areas emerged as primary factors that impact the senior resident-fellow dynamic: hierarchy, role clarity, teaching, learning climate, decision-making, and attending involvement.

Discussion and Conclusions: Both senior residents and PHM fellows described an optimal dynamic in which interns seek help from the senior resident who can then access the fellows guidance when needed. Role clarity promoted a positive dynamic, whereas role uncertainty, especially with increased attending involvement, led to conflict between senior residents and fellows. This study demonstrated that a structured hierarchy surrounding supervision, clinical decision-making, and teaching promoted level-appropriate autonomy for both senior residents and fellows.

Take-home Messages: These findings were consistent with the proposed conceptual framework because both groups placed significant emphasis on their own autonomy. Based on these findings, further work could be done to study implementation of an intervention, such as fellow and senior resident education, to target these factors.
#EPOD-PGEY: Postgraduate Training - Early years

#EPOD-PGEY1 Foundation Doctors’ written reflections - a risky business? (7853)

**AUTHOR(S):**
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**ABSTRACT:**

**Background:** Reflecting is described as an analytical thought process to gain insight to improve, professional practice. Written reflective accounts are widely used in order to support the growth of reflective skills. Foundation Doctors must provide evidence of reflective thinking in order to progress through their training through written accounts uploaded onto an e-portfolio. The Foundation Programme is the only point in medical training where an entire generation of doctors share a common curriculum. Despite this, there is little in the literature examining the experience of Foundation Doctors writing reflections. This research aimed to understand the process by which Foundation Doctors select cases for, and write, formal reflective accounts for their e-portfolios.

**Summary of Work:** A post-positivist sequential mixed methods study was undertaken. An online questionnaire was advertised via social media. Those who completed the questionnaire were invited to participate in semi-structured interviews. The questionnaire results informed the interview guide design. Interviews were transcribed and underwent thematic analysis. Ethical approval was granted by Newcastle University Ethics Committee.

**Summary of Results:** Fifty-eight doctors completed the survey, and eight participated in subsequent interviews. Four themes were identified: distinction between reflective thinking and written reflection, selection and editing process, error, and lack of senior engagement. There was a clear sense of conflict between a desire to learn from mistakes or process emotions, and fear of how this would be used in assessment or legal settings. This resulted in edited and censored written reflections.

**Discussion and Conclusions:** This research aligns with a growing body of evidence raising concerns with the current use of written reflections. Editing of written reflections has been described amongst medical students and GPs. Using written reflection is summative assessment can be counterproductive to genuine reflection, and may not accurately represent reflective thinking. Doctors at the start of their professional career are already disenfranchised and cynical about written reflections, which is unlikely to improve unless their concerns are addressed and they system changes.

**Take-home Messages:** Foundation doctors see a distinction between reflective thinking and writing. Foundation doctors consciously edit written reflections to avoid putting themselves at risk when discussing errors. Summative assessment of written reflections is counterproductive to reflective thinking.
ABSTRACT:

**Background:** Good quality lecture-based teaching sits alongside clinical experience as one of the pillars of the foundation training program. There have been reports at the Queen Elizabeth Hospital Kings Lynn of lecture slots going unfilled, irrelevant topics, lectures pitched at a level too advanced or too basics for the needs of foundation doctors.

**Summary of Work:** The Peer-to-Peer Program consisted of Foundation Doctors delivering a 30-minute lecture on a curriculum topic of their choosing. The speakers were self-elected. The presentations were sent to a middle grade doctor prior presentation, who would then attend the session. Surveys were collected from Foundation Doctors; the first to summarise their lecture-based teaching and a second to evaluate lectures given in the Peer-to-Peer scheme. Several domains were examined, requiring a response of Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree.

**Summary of Results:**

The domains questioned were: Presenter Focussed: (Relevance, Level, How well informed the speakers are and Enthusiasm) Prepared Presentations: (Introduction, Aims, Material Organisation and AV handouts) Presentation Delivery (Pace, Length and Audience participation). Strong agreement increased across all these fields, with the exception of Presenters Well Informed which were equal. Overall, the Peer-to-Peer sessions were felt to be higher quality. 91% of respondents said that they thought the Peer-to-Peer scheme should form part or the majority of the Foundation Teaching Program. This was corroborated with qualitative feedback.

**Discussion and Conclusions:** The surveys show that the Peer-to-Peer Scheme is as well, if not more positively received than traditional teaching methods. The Peer-to-Peer scheme also offers Foundation Doctors to improve their portfolios, build future applications and contribute positively to their teaching experience. This burden of content creation shifts away from more senior physicians, but having someone in the room maintains the assurance of quality required from a teaching program.

**Take-home Messages:** The Peer-to-Peer scheme has showed excellent results in a short period of time. It has been well received by those delivery the sessions and by those being taught. It has potential to improve the trainee experience in more aspects than traditional teaching methods.
Background: In May 2020, during the COVID-19 pandemic, medical students across the UK who had completed final year exams were offered the opportunity to commence their clinical career early. These trainees became known as interim Foundation Doctors (FiY1s). Due to the pandemic, there was no educational strategy in place for their initial training period, whilst weekly core teaching for Foundation Year 1 trainees (F1s) was put on hold.

Summary of Work: 25 FiY1 roles were introduced at Musgrove Park, a District General Hospital in the Severn deanery. Over a nine-week period, short weekly teaching sessions were developed and delivered by F1s to provide the FiY1s with the tools to be more prepared and confident in clinical practice. The group completed a pre- and post-course survey, evaluating the impact of the teaching on their preparedness and confidence in clinical practice. These focussed on three main areas: clinical duties, assessing and managing patients and prescribing.

Summary of Results: The pre-course survey highlighted that FiY1s felt unprepared, with only 30% of trainees stating they were confident in performing clinical duties and 38% confident in prescribing on the ward. The post-course survey indicated that confidence in clinical duties dramatically increased to 86% of trainees, whilst 76% felt confident to prescribe. Feedback expressed that the FiY1 cohort felt the teaching was well-delivered, relevant to their level and even provided an additional element of pastoral support. A feedback survey distributed to the F1 trainees identified that this course improved their confidence in developing and delivering teaching to a large group.

Discussion and Conclusions: The COVID-19 pandemic has had a significant negative impact on the educational opportunities of junior doctors. In developing this programme, we identified a means to provide educational, clinical and pastoral support to the incoming trainee doctors through near-peer mentorship. FiY1 feedback highlighted that the teaching programme resulted in an increased perceived preparedness and confidence in clinical practice. Additionally, F1s felt that this course provided them with an opportunity to improve their confidence in teaching.

Take-home Messages: • Near-peer teaching and mentorship enabled mutual educational development • A structured teaching course with near-peers provided both clinical and pastoral support.
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ABSTRACT:
Background: UK Medical schools thoroughly prepare doctors to recognise the critically unwell patient through a combination of simulation, mock OSCE style sessions and case histories with a well-known specific framework - namely DR ABCDE. However how to handover patients - particularly from one team to the next, or to the doctor on the next shift- is formally taught very little in both undergraduate and postgraduate education. This skill is mostly learnt through observing seniors and through experience. Yet handing over patients is an essential skill which improves efficiency of clinical teams and promotes continuity of care and patient safety. We set out to assess preparedness of new doctors to perform a handover.

Summary of Work: We surveyed the first-year foundation doctors in 2019 and 2020 to explore their preparedness in recognising the critically ill patient and handing over patients during the initial few weeks of working. 891 respondents 2020; 1302 in 2019.

Summary of Results: 78% (2019) 80% (2020) feel adequately prepared in recognising the critically ill patient. Only 60% (2019), 64% (2020) reported they felt confident handing over patients. Themes that emerged from free text comments included - deficiency of knowledge in structuring a handover, appropriate patients or jobs to handover, the clinical or practical details needed for a relevant and concise handover, and expectations of a handover.

Discussion and Conclusions: Handing over is often taught through informal tips sessions from doctors during the final phases of medical school and when starting work. Anecdotally, it has been noted that the handover of patients from new F1s is not very thorough or well structured. Handover in critical scenarios using SBAR e.g. escalating to the medical registrar is taught well, but more focus on the handovers at the end of a shift or to another team is needed. We propose further discussion and research is undertaken exploring how to best prepare final year medical students and new doctors to execute a good handover, including devising a formal structure such as the SBAR technique, that can be taught at undergraduate or postgraduate level to standardise.

Take-home Messages: 40% of Foundation Doctors do not feel confident performing a handover Improved teaching is required
ABSTRACT:

Background: Taiwan introduced Asia’s first Patient Self-Determination Act (PSDA) in January 2019, granting patients increased autonomy regarding cardiopulmonary resuscitation and life-sustaining therapy. Young residents may have limited understanding of this legislation and its ethical basis. A class with educational goals of enhancing bioethical and professionalism education was implemented.

Summary of Work: First-year foundation program postgraduate residents attended a one-hour interactive class during their three-month internal medicine rotation. They were surveyed on previous undergraduate training and familiarity with clinical applications of the PSDA, responding to a five-point Likert scale. Residents were then presented with clinical scenarios and queried on therapeutic interventions. A lecture reviewing the ethical and legal aspects of PSDA was given, and the response to the same clinical scenarios was obtained again.

Summary of Results: 34 residents attended four separate classes. In regards to PSDA, more than half (55.9%) responded they had adequate undergraduate training, but a smaller proportion (38.1%) were familiar with clinical applications. In the clinical scenarios, residents were less inclined to perform cardiopulmonary resuscitation and more inclined to provide hospice/palliative care following the lecture, (0.4~34.6% increase). The majority (94.2%) found that the class helped increase familiarity with PSDA, and requested further training.

Discussion and Conclusions: Medical ethics education is an essential part of competency-based medical education and professionalism subcompetencies (i.e., ACGMEs internal medicine professionalism subcompetency 4: Exhibits integrity and ethical behavior in professional conduct). Whilst advocating for patient autonomy is essential, there is need to balance with other ethical principles, which needs practice and experience. Although medical students have received undergraduate bioethics training, training may vary and were provided at a stage with limited clinical experience. Also, ethical and legal issues regarding end-of-life care and life-sustaining therapy often cause primary care takers much anxiety and education and open discussion should be encouraged. Utilizing a class with interactive clinical scenarios and introduction of the PSDA helped young residents to familiarize with its ethical and legal basis, and shifted their inclinations towards provision of care.

Take-home Messages: Medical ethics education should be provided to young residents as part of professionalism training and can increase their understanding of complex ethical and legal issues.
The views of Foundation Year 2 Doctors of a programme of weekly, peer-led teaching sessions (7982)

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ABSTRACT:
Background: The Postgraduate Medical Education Department at Chelsea and Westminster Hospital provides 2 hours of weekly, mandatory teaching sessions to its Foundation Year 2 (FY2) doctors. These sessions are split, with the first hour delivered by faculty, and the second hour by the FY2 doctors themselves. The benefits of peer teaching in undergraduate medical education have well described, however there is less evidence for its use in postgraduate education.

Summary of Work: Anonymised questionnaires were distributed to the FY2 doctors, asking about their views of the teaching programme. The data from the free-text responses underwent emergent coding and thematic analysis. In total, 13 questionnaires were completed. All 13 respondents completed part A of the questionnaire (receiving teaching), and 5 respondents completed part B (delivering teaching).

Summary of Results: The majority (10/13) of FY2 doctors indicated they would prefer a combination of both peer-led and faculty teaching. Analysis of free-text responses identified several themes related to the content, quality and experience of delivering teaching to peers. The content of peer-led teaching sessions was felt to be distinguished by the uniqueness and variety of subjects covered. Faculty and peer-led teaching were perceived to fulfil different requirements. Faculty teachers were felt to be experienced and able to address clinical needs, whilst peers brought new perspectives to teaching sessions. Since the teaching slots were pre-allocated, this sometimes led to scheduling issues, with participants having to swap sessions to fit in with their clinical work. In addition, several participants commented on the time pressures involved in preparing the teaching when they were already busy.

Discussion and Conclusions: The study was limited by a relatively small sample size. However, there is a consensus amongst the respondents to keep the current arrangement of teaching from both faculty and peers, recognising the value provided by each. The pressures of finding enough time within busy work schedules to prepare the teaching must also be recognised, particularly at times of increased clinical workloads such as the COVID-19 pandemic.

Take-home Messages: Peer-led teaching is well received by Foundation Year 2 doctors, and can be used in addition to conventional faculty-led teaching. Flexibility with timings is essential to fit around doctors work schedules.
#EPOD-PGEY7 Developing an effective induction for new Foundation Doctors: A near-peer teaching programme during the COVID-19 pandemic (8566)

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ABSTRACT:
Background: The induction of new Foundation Year 1 (FY1) doctors is a yearly event in hospitals across the United Kingdom (UK) and combining the need for both rigorous organisational induction with valuable experiential learning to reduce anxiety is challenging. The benefits of near-peer teaching in medical education are increasingly being recognised. Using clinicians as near-peer educators can increase engagement, ensure learning goals are relatable to learners and provide positive educational experience to those teaching.

Summary of Work: We developed a near-peer induction programme for new FY1 doctors at an acute NHS trust. We led a team of foundation doctors to safely deliver small-group, simulation and electronic prescribing sessions during the COVID-19 pandemic. Learning outcomes were based on feedback and quality improvement from previous inductions. In-depth feedback was collected from all involved, and delayed feedback from participants was also collected at a 6-month interval.

Summary of Results: Feedback taken from those undergoing induction (n=23) was highly positive and 100% felt it was relevant. All elements were felt to be reassuring to the majority of learners, however 21.7% found elements of the induction to be overwhelming. Themes from the 6-month delayed feedback remained positive but revealed a need for a greater focus on out-of-hours service provision and written resources to support this. Feedback from those facilitating (n=18) was generally positive. 83.3% felt prepared to deliver the induction, 94.4% enjoyed the experience and 100% felt it was valuable.

Discussion and Conclusions: There is an ongoing need for effective induction for newly qualified FY1 doctors that reflects the day-to-day practice of junior doctors. Utilisation of near-peer teachers to deliver the induction appeared to be a valuable learning experience for all involved. It was reported to be engaging and helped reduce anxiety, achieving the outcomes developed from previous iterations. Future iterations require an increased focus on the out-of-hours requirements of the job, and provision of supporting multimedia resources.

Take-home Messages: Near-peer induction of new FY1 doctors can be successful and has a positive impact on both facilitators and learners. It can help reduce anxiety however there remains a risk of overloading learners with information in this context, and those planning similar inductions must consider this.
#EPOD-PGEY: Postgraduate Training - Early years

#EPOD-PGEY8 Severn Foundation Fellowship Programme: Inspiring Excellence in Junior Doctors (8966)

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ABSTRACT:
Background: The Foundation Fellowship Programme was created by Severn Deanery under the direction of Dr van Hamel to enhance the potential for foundation doctors to develop excellence. Five key roles were identified - Education, Leadership, Sustainability, Quality Improvement and Simulation. Foundation Doctors are invited to apply and Fellows selected through a competitive process. The Foundation Fellowship Programme aims to support trainees with a particular passion, to further pursue endeavours within that field.

Summary of Work: Current Foundation Year 2 Foundation Fellows: The Education Fellow set up an Insulin Training Programme to support junior prescribers due to high rates of insulin prescription errors and prescribing anxiety. They also implemented a Befriending Scheme pairing medical students with elderly patients and created an Interim Foundation Doctors teaching programme to support medical students employed as trainees during the Covid-19 pandemic. The Leadership Fellow created a Leadership Training Programme involving interviews with hospital leaders, as well as forming a Junior Doctors Leadership Group providing unique opportunities for juniors to explore leadership roles. The Sustainability Fellow has been involved in building allotments at a hospital and GP practice for patient and staff use. They have been heavily involved in teaching the principles of Sustainability in Quality Improvement Projects across the region. The QI Fellow has set up a database of all QI projects in the region to link trainees to projects and supervisors, as well as involvement in QI teaching. The Simulation Fellow has been involved in setting up a regional Simulation Programme working closely with local education fellows.

Summary of Results: The trainees receive additional study grants to attend conferences and courses within their field. They are provided with evidence of their role to enable flexibility within their job to pursue projects and attend courses. They attend Foundation School meetings, providing valuable feedback from a trainee perspective whilst sharing ideas between Trusts.

Discussion and Conclusions: This novel scheme has proved extremely effective. The posts are highly competitive and Fellows have proved dedicated to their fields, contributing greatly to the Foundation School through their projects.

Take-home Messages: The Foundation Fellowship scheme is a unique opportunity for both trainees and Foundation Schools to promote excellence.
#EPOD-PGEY: Postgraduate Training - Early years

##EPOD-PGEY9 Improving Confidence in Out of Hours Psychiatry for Junior Doctors Using a Virtual On-Call Training Model (8902)

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**ABSTRACT:**

**Background:** Out-of-hours (OOH) shifts are associated with increased clinical responsibility, reduced senior availability, and increased workload compared to regular shifts. Virtual on-call programmes in medical and surgical specialties have improved confidence amongst participants, but few psychiatry-specific programmes exist. This project aimed to improve confidence of postgraduate trainees in OOH roles by applying a novel training methodology to psychiatry training.

**Summary of Work:** A psychiatry virtual on-call (pVOC) programme was devised comprising an introductory lecture followed by a 2-hour practical session simulating the psychiatry on-call environment for 29 junior doctors in Oxford Health NHSFT. Plan-Do-Study-Act methodology was used to identify areas where trainees lacked confidence and to implement content for future sessions. Trainees were administered questionnaires evaluating confidence in 10 domains at baseline and at key time points during the programme, rated on a Likert scale ranging from 0-10.

**Summary of Results:** A pilot questionnaire was administered to outgoing trainees prior to implementation of the programme, and to the incoming trainee cohort before and after the introductory lecture and practical session. Sessions were rapidly adapted in format due to COVID-19. Seven outgoing trainees completed the pilot questionnaire. Confidence was low across all domains, with lowest confidence in detention under the mental health act, Section 136 suites and cross-site cover domains. Respondents reported that pVOC would have been useful for their training (median score 9). For the incoming trainees, 13 and 14 trainees completed the pre- and post-introductory lecture questionnaires, respectively. Increases in confidence were observed in three domains: seclusion reviews, psychiatric prescribing and detention under the mental health act. Respondents reported that the pVOC session would be beneficial for their learning (median score 7). Practical VOC sessions are currently underway, using a digitised format due to the COVID-19 pandemic.

**Discussion and Conclusions:** The introductory on-call lecture improved confidence in several psychiatry-specific domains. Trainees report that a practical session would be beneficial for their learning. Further data from a digital pVOC session will provide further insight to benefits of simulated on-call in psychiatry.

**Take-home Messages:** Virtual on-call methodology may be applied to psychiatry to improve the confidence of trainees with out-of-hours responsibilities.
ABSTRACT:
Background: Transitions of care are important for providing high-quality care and can prevent hospital readmissions. Care transitions as a core element of patient care and a critically essential component of health professional education. In Taiwan, the Department of Health decided to sponsor a national project named The Postgraduate General Medicine Training Program (PGY) in 2003 because of an over-emphasis on specialty training and they want to focus on Holistic Health Care, which includes hospital discharge care. However, not many medicine PGY residency programs have formal discharge planning curricula.
Summary of Work: This study explores the curriculum design and instructional practice of a hospital discharge course offered at a medical center in northern Taiwan. It presents an action research study within the qualitative research. We also utilized activity theory as the theoretical framework to analyze the influences of factors for the Medical centers PGY in participating in hospital discharge planning. Using a constructivist grounded theory approach, semi-structured interviews with 27 internal medicine PGYs at a single tertiary care academic medical center was done. Following open coding, the authors used activity theory (AT) to explore interactions among the social, cultural, and material influences related to hospital discharge planning.
Summary of Results: The authors identified three themes related to hospital discharge: (i) Lack of role clarity, (ii) Burnout with residency training, and (iii) The policy and team census. Analysis of participants perception as an activity system highlighted key tensions in the system and PGYs work adaptations.
Discussion and Conclusions: This study not only develops a sustainable and effective Transitions of Care Curriculum but also aims to know the potential effects to affect post-graduate residents to participate the hospital discharge planning. Further research is needed to explore their value and applicability to transitional care education. Further research is needed to explore their value and applicability to transitional care education.
Take-home Messages: 1.Care transitions as a core element of patient care. 2.Currently, not many medicine PGY residency programs have formal discharge planning curricula. 3. We identified three themes related to hospital discharge: (i) Lack of role clarity, (ii) Burnout with residency training, and (iii) The policy and team census.
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ABSTRACT:
Background: Balint groups are a form of reflective practice groups looking at the doctor-patient relationship. For core psychiatric trainees Balint groups are a mandatory part of their training. They are particularly helpful when dealing with difficult patient interactions. Dissatisfaction amongst trainees is currently very high with 80% of trainees reporting excessive amount of stress and burnout in their job.

Summary of Work: We piloted a series of Balint groups amongst foundation trainee doctors based within an acute trust based in London. The Balint group was facilitated by a higher and core trainee in Psychiatry. Both trainees received supervision from a Consultant Psychotherapist. Foundation trainees were given questionnaires to complete at the beginning and end of the session of the Balint sessions.

Summary of Results: A total of twelve pre and post questionnaire were received. Of the pre questionnaires, 58% had heard of Balint groups prior to taking part. 100% of trainees felt reflection was an integral part of their training. However, 75% felt that there was not enough protected time for reflection within their training. 80% of trainees reported feeling burnout in their job and 45% reported that they would be taking a career break following completion of their foundation training. Balint groups were positively received amongst trainees. 100% of the foundation doctors found them extremely helpful and stated that they would recommend it to other trainees and wanted it to became an integral part of their foundation teaching.

Discussion and Conclusions: We were able to deliver a Balint Group as part of a weekly teaching session for foundation doctors. The vast majority of doctors felt they did not have enough protected time for reflective practice and all doctors who attended said they enjoyed the Balint Group and would attend future sessions.

Take-home Messages: With increasing reports of burnout amongst and dissatisfaction amongst junior doctors, Balint groups provide a unique way to support junior doctors within the early stages of their medical career. A pilot Balint group demonstrated that non psychiatric trainees are able to make use of Balint groups in an effective way. We recommend that Balint groups become core part of foundation training as a way of supporting trainees.
#EPOD-PGEY: Postgraduate Training - Early years

#EPOD-PGEY12 Medical training alongside Covid-19: A qualitative analysis of the junior doctor experience (8970)

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ABSTRACT:
Background: Covid-19 has had a seismic impact on medical training, in ways that are continually being realised. In response to the call to establish a new normal, we performed a detailed evaluation and thematic analysis of recent trainee experiences, which identifies the priorities for developing an innovative training framework that is adaptable during the peaks, the troughs, and through the post-pandemic era.

Summary of Work: A 14-item survey was sent to junior doctors at a large teaching hospital. Data was analysed using a grounded theory framework and cycles of open and axial coding allowed for the identification of emergent themes. Explanatory models were developed using inductive analysis to postulate thematic relationships.

Summary of Results: 137 junior doctors responded to the survey. Respondents across all grades reported benefits to themselves, clinical teams and the profession. A notable benefit to junior trainees was the greater consultant support, fostering a more supportive work environment. Respondents also identified several challenges to working practice, including the availability of suitable PPE, burnout and the general pressures on physical and mental wellbeing.

Discussion and Conclusions: Trainees perceived value was inferred typically from how busy they were, possibly as postgraduate training is largely competence-based. Educational bodies should attempt to highlight the equal value of non-technical skills, such as mentorship and problem-solving for a rounded curriculum. Trainees highlighted the inequity of opportunities due to sometimes inappropriate redeployment, suggesting that educational bodies should strive to develop personalised training programmes. Covid-19 has shown that a sense of personal physical and psychological safety to be of paramount importance to trainees.

Take-home Messages: 1) Educational bodies should attempt to highlight the equal value of non-technical skills, such as mentorship and problem-solving for a rounded curriculum. 2) Trainees highlighted the inequity of opportunities due to sometimes inappropriate redeployment, suggesting that educational bodies should strive to develop personalised training programmes. 3) The confidence and faith placed in trainers, programme leads, and training bodies, by trainees are of paramount importance, and efforts should be made to foster a dialogue of openness, understanding, and flexibility.
Responding to the demands of Covid 19 through novel digital medical education of junior doctors: An ePod approach (7988)

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ABSTRACT:
Background: The recent SARS COVID 19 pandemic affected junior doctors learning as a combination of unpredictable workload redeployment and infection containment practices disrupted regular teaching sessions.

Summary of Work: We introduced a pilot scheme on a proof of concept trial. We used a Plan Do Survey Act (PDSA) approach. A rapid review of current practice and impact of Covid 19 measure on the current delivery system preceded implementation. The intervention was assessed through feedback using analysis of feedback by participants / users. Feedback was assessed to continue the next PDSA cycle. Clear measures of outcome were identified and included consistent delivery, improved accessibility and a clear audit trail to show effective transformation. The flexible digital platforms enabled educators to embed synchronous teaching sessions. Recorded sessions were available for those who could not attend due to exigencies of clinical duties or need for shielding.

Summary of Results: The pilot was well received with the majority preferring the flexibility of having the options of face to ace or non face-to-face virtual learning. The changes made allowed synchronous teaching without the need physical presence with a remote educator delivering teaching to multiple locations. The flexibility for asynchronous learning by learners who could not be present was an added advantage. The facility allowing learners access to material at any convenient time was seen as a major advantage. The mandatory requirement for feedback before a certificate was issued facilitated administrative tracking and provided an alternative to attendance registers. The educational delivery audit trail ability to track exactly what sessions were delivered and learner satisfaction with the programme was also an administrative bonus.

Discussion and Conclusions: We believe that the changes imposed during this pandemic have helped overcome limitations. The transformed teaching practice could be used a replacement for Trust teaching while physical distancing is in action. It could also be used as an adjunct to teaching in the future - to allow the utilisation of strengths of multiple modalities of teaching and remove the barriers to access and organise education.

Take-home Messages: (1) The impact of Covid affected delivery of junior doctor teaching. (2) Use of technology enabled uninterrupted delivery of teaching
ABSTRACT:
Background: Evaluation of student experience and engagement is an essential aspect of the learning environment. The School of Health Sciences, University of Liverpool delivers six pre-registration undergraduate programmes, it delivers one pre-registration Post-graduate Diploma in Radiotherapy (PGDip Radiotherapy). Post-graduate students offer a different profile to undergraduate students due to previous academic and life experiences; there is limited research of expectations, experiences, and engagement of post-graduate students. Using a constructivist theoretical perspective, the assumptions underpinning this research are that knowledge is gained from interactions with other individuals and the environment.

Summary of Work: The aim of this exploratory qualitative study was to investigate the clinical expectations, experiences, and engagement of post-graduate radiotherapy students at the University of Liverpool. Pictorial data was used to compare and contrast the prospective and retrospective academic and clinical expectations of post-graduate students at the University of Liverpool through illustration produced by this student group. Pictorial data was collected which was then analysed in order to identify their expectations of a postgraduate, vocational Programme. Prospective data was collected at the beginning of year one and then retrospective data was later collected at the beginning of year two.

Summary of Results: Key themes were identified from both the prospective and retrospective data which gave a clear insight into the expectations, experiences, and engagement of the cohort of postgraduate students. The results have corroborated the themes identified from earlier data analysis. The results provide a surprising and valuable in-depth insight into student expectations, experiences, and engagement.

Discussion and Conclusions: From this project this cohort demonstrated a range of support needs that had not previously been recognised. There are expectations, experiences and engagement although showing some similarities with other student group do diverge into areas unique specific postgraduate students. Life experiences appear to play a significant part in their engagement with the programme and their support requirements.

Take-home Messages: Educators need to be mindful of the expectations of post graduate students in comparison to undergraduate students based on their previous academic and life experiences. Their needs are different and require support strategies that have not been considered in the past.
The efficacy of the combination of the motivated strategies for learning questionnaire (MSLQ) and Objective Structured Clinical Examinations (OSCE) for formative feedback

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ABSTRACT:
Background: We explored the efficacy of the motivated strategies for learning questionnaire (MSLQ) and Objective Structured Clinical Examinations (OSCE), where trainee doctors were exposed to each station before and after periodic training.

Summary of Work: 19 trainee doctors participated in OSCEs on nine stations (CPR, trauma, imaging diagnosis, Focused Assessment Sonograph for Trauma (FAST), Tracheal intubation, Hemodynamic testing, pain management, Acute coronary syndrome (ACS) management and doctor-patient communication). In trauma station, the Motivated Strategies for Learning Questionnaire (MSLQ) was used to measure students reflection on their learning based on the theoretical framework of self-regulated learning (SRL) before training. MSLQ which was followed with a reference contained five subscales: internal goal orientation, self-efficacy, critical thinking, metacognitive/self-regulation, help seeking and peer learning. And each station was assessed by three medical faculties. Trainee performance scores were compared before and after training. Furtherly, the correlation between MSLQ scores and performance scores were investigated.

Summary of Results: There was significant difference in their OSCE score between before and after training in the trauma station, where p value was less than 0.001. There were significant associations between MSLQ scores and performance scores increase (Pearson r=0.617, p = 0.008).

Discussion and Conclusions: Reflection on learning was very useful for trainee doctors in their complex academic and clinical environments. There was strong association between the MSLQ scores and his/her performance on progress. The trainee doctors with well self-efficacy and self-regulation got a higher boost.

Take-home Messages: The MSLQ provides a means of monitoring individual doctors reflections on their learning. The combination with MSLQ and OSCE can guide trainer to analyze the efficacy of training.
#EPOD-PGEY: Postgraduate Training - Early years

#EPOD-PGEY16 Staying Connected: A Novel Remote Work Network for Clinically Vulnerable Trainees in South East Scotland (8033)

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ABSTRACT:
Background: Following the UK initiation of shielding for clinically vulnerable groups, we realised that trainee doctors required to work from home might benefit from being linked together.

Summary of Work: We formed a network for trainees who were working from home due to either their own clinical vulnerability, pregnancy, or vulnerability of a family member. We had around forty members, with half accessing meetings regularly. We met weekly using online platforms, and also had an active whatsapp group. We were able to collate and disseminate information around remote working opportunities, and aspects such as ARCP, enabling members to keep up-to-date with recommendations. We also engaged with multiple research and medical education projects, which benefitted local teams and provided members with additional meaningful activities.

Summary of Results: We invited members to complete an anonymous survey when shielding was paused in August 2020. 75% felt the remote network positively impacted their period of remote working. 83% felt it had provided additional pastoral support. 50% felt it helped to prepare them for ARCP, a positive figure as not all members were in training programmes. We also asked for single word descriptions of remote working. These were heavily weighted towards negative emotions such as guilt, isolation, and frustration, which we feel highlights the challenging experiences of this group.

Discussion and Conclusions: Connecting remote working trainees has multiple benefits, both by facilitating peer support for a group away from their usual teams, but also by sharing resources and opportunities. It is increasingly recognised that shielding can be a difficult experience and for healthcare workers, one accompanied by feelings of guilt and frustration at being unable to work as planned. We would encourage other regions to consider forming similar networks whilst a proportion of trainees continue to work remotely. Members informally commented that meeting other trainees whose health impacts working life was useful, and not previously easily accessible. We wonder if similar networks in non-pandemic times might positively impact experiences of trainees with complex health issues.

Take-home Messages: Remote working can be challenging for healthcare workers. Providing a network to link trainees together is beneficial not only in optimising opportunities but also in providing additional peer support.
#EPOD-PGS: Postgraduate Training - Stress & wellbeing

#EPOD-PGS1: Mentoring And Pastoral Service (MAPS): Supporting Trainees’ wellbeing during COVID-19 (9191)

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**ABSTRACT:**

**Background:** In August 2020 a BMA survey found that 34% of doctors described themselves as more stressed due to work during the pandemic and 57% denied having access to wellbeing support (BMA, 2020). George Eliot Hospital NHS Trust Mentoring And Pastoral Service (MAPS) was developed by the Postgraduate Medical Education Team to provide support to trainees.

**Summary of Work:** MAPS offers monthly 1:1 near-peer mentoring meetings with a clinical education fellow. Each meeting is standardised through the use of a structured pro-forma which incorporates questions about good and bad experiences at work, patient experiences, workload and support networks. MAPS was offered to 21 FY1 trainees and 12 FY2 trainees per rotation with face-to-face or via Microsoft teams with ad-hoc availability if required.

**Summary of Results:** I can say without hesitation that the MAPS meetings have made me a better doctor and a more supportive colleague. FY1 Doctor, GEH, November 2020 Qualitative data was collected using a Likert Scale and free text to establish the most and least useful things about meetings. Feedback was entirely positive and included comments about improving management of workload, feeling cared for holistically and reassurance about being open and honest doctors.

**Discussion and Conclusions:** MAPS meetings have encouraged an open environment for reflection, this is expected of trainees as part of their training and provides an excellent grounding for reflective practice throughout their career. It has allowed trainees to discuss management of workload, identify areas for improvement, discuss team-work and career plans. The service has helped to identify trainees at risk of burnout and provided an aid to building rapport between trainees and the postgraduate team. To develop this service further we propose broadening the service to all trainees and scoping its use with allied healthcare professionals.

**Take-home Messages:** We have helped junior doctors to not only share their problems but also to improve patient care through reflective practice. Being open and honest about troubles and successes will help these doctors develop into well-rounded, supportive colleagues and clinicians. Reference: BMA, 2020. BMA COVID-19 Tracker Survey, s.l.: BMA.
#EPOD-PGS: Postgraduate Training - Stress & wellbeing

#EPOD-PGS2 The relationship between Perceived Organisational Support, Bullying and Adverse Event Involvement in a sample of Trainee Doctors (8152)

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ABSTRACT:
Background: The Medical Council of Ireland is the regulatory body for doctors. We have a statutory role in monitoring, capturing and improving trainees educational experiences and outcomes. While Irish trainee specialists and interns generally present with good wellbeing, some trainees who have experienced an adverse event or bullying are more likely to present with negative health outcomes.

Summary of Work: All active doctors on the Medical Councils Intern and Trainee Specialist Divisions were contacted by email. Participants were asked to indicate whether they had been bullied or involved in an adverse event in the previous 12 months and complete the Perceived Organisational Support (POS) Scale 5. An adverse event was defined as an injury caused by medical management which prolonged the hospitalisation or produced a disability at the time of discharge and bullying was defined as persistent, offensive, abusive, intimidating, malicious or insulting behaviour, abuse of power or unfair penal sanctions, which makes the recipient feel upset, threatened, humiliated or vulnerable, which undermines their self-confidence and which may cause them to suffer stress.

Summary of Results: Through multiple regression analysis, the predictive power of bullying and adverse event involvement on Perceived Organisational Support was examined. The overall model was significant ($F (14, 701) = 12.66, p < .00, R^2 = .2, Adj R^2 = .19$), accounting for 19% of variance. Being bullied ($\beta = .09, p < .05$) and adverse event involvement ($\beta = .1, p < .01$) were significant predictors of lower Perceived Organisational Support in Trainee Doctors.

Discussion and Conclusions: Experiences of bullying and adverse event involvement was predictive of Lower Perceived Organisational Support in Trainee Doctors.

Take-home Messages: • Reporting, managing and supporting processes for those experiencing, or who have experienced, bullying and adverse events both require attention. • Improving support structures for trainees may have far-reaching impact and reflect the Medical Councils dual remit of supporting doctors in their pursuit of best practice, while also protecting the public.
ABSTRACT:

Background: While theoretical models of medical trainee wellbeing have been the focus of much research, less is known about stakeholders perspectives of what burnout involves. The present study sought to explore the nature and causes of burnout, as perceived by Australian General Practice Registrars.

Summary of Work: Semi-structured interviews and focus groups were held with 47 registrars, supervisors, medical educators and program training advisors. Questions considered their understanding of burnout in GP registrars, causal factors and possible intervention strategies. Interviews and focus groups were audio recorded, transcribed and thematically analysed.

Summary of Results: Descriptions of burnout fell under seven domains, primarily related to disengagement and impaired performance. Stakeholders noted that detection of burnout can be masked by non-specific symptoms such as flat affect and relational withdrawal. Key causes included resource deficiencies (e.g. low confidence, unsupportive practice culture), a high load of professional and personal demands, and aspects related to the medical culture itself (e.g. perfectionism, self-sacrifice). Subgroups of trainees experienced extra stressors (e.g. exams, the adjustment from the hospital setting to general practice). Recommended strategies considered individual resources (e.g. setting boundaries), the practice environment (e.g. registrar-supervisor relationship), training organisation requirements (e.g. empowering trainees), and changes to the broader medical system and culture (e.g. challenging stigma).

Discussion and Conclusions: Our findings help to contextualise existing models of wellbeing and burnout. Whilst these findings have specific application to Australian GP registrar training, they may be informative for international and other specialty settings.

Take-home Messages: The experience of GP registrar wellbeing and burnout is highly complex, and individualised. In addition to the need for registrar self-care, practices and training organisations also need to implement strategies to support registrars wellbeing.
ABSTRACT:

**Background:** Post-graduation year 1 and year 2 is a new curriculum in our country. Tutors do not always do well in identifying and helping struggling students during assessment. Therefore, the consequence may be an ultimately central factor for patient safety. We aimed to follow up their facing difficulties and solving abilities in their different workplace after graduation with intervention.

**Summary of Work:** We undertook a qualitative and a questionnaire exploration of the issues for the postgraduate students in workplace. Data were analyzed thematically. Sixty student were invited. An e-book, with PAAR (probe, analyse, action, and resolve) from the method of TOTR, could be checked easily from smartphones, was set. A group with e-book intervention and a control group without e-book were studied. Scan of Postgraduate educational environment domains and Professionalism identity questionnaire were used.

**Summary of Results:** There was no significant difference between the 2 groups in ethical issues. There was no significant difference in Professionalism identity scale and team scale. There were no difference between the 2 groups clinical work including physical and psychology problems. Control group had higher influenced learning in family senioritys sickness than e-book group (4.3 vs. 3.8, P<0.05). The stereotype teaching style influenced students attending the meetings. Medical environment atmosphere (teachers and coworkers attitude, environment atmosphere, teachers support and respect) influenced more in the control groups learning (P<0.05). E-book group had higher difficult effective communication in cognitive flexibility scale, but control group had higher avoiding abnormal situation, no making decision and no performance decision (P<0.05) than e-book group.

**Discussion and Conclusions:** Post-graduation year 1 and year 2 residents was more concerned in the learning environment and the cognitive ability when facing difficulty in their different workplace. The seniority sickness and teaching style influenced postgraduate residents learning and performance.

**Take-home Messages:** An e-book, with PAAR (probe, analyse, action, and resolve) from the method of TOTR, could be checked easily from smartphones, is a good method for our students to check and solve their difficulty in the workplace after graduation. The effect of helping the students decreased as time goes by. A new method to support them for solving their difficulty in workplace is needed.
ABSTRACT:
Background: The Covid-19 pandemic threw a spotlight on staff well-being and the effects of moral injury on healthcare professionals. Shielding, social distancing and redeployment led to many medical trainees being increasingly isolated at a time of heightened anxiety and adversity. Even in the pre-Covid-19 era, peer support is known to be a powerful way to protect wellbeing for doctors.

Summary of Work: Trainees4trainees are free support groups set up by trainees across specialties as a Health Education England- Thames Valley (HEE-TV) well-being project, led by the Trainee Improvement Fellow. The groups are run on Zoom, facilitated by two trainees with special training in peer support: one a psychiatry trainee and one from another speciality. The psychiatry trainees have specialist training in group work and help to train the other facilitators. All facilitators have regular supervision from a consultant psychiatrist in medical psychotherapy. Trainees are supported to discuss challenging experiences and think about their emotional responses in a supportive and validating group.

Summary of Results: Feedback suggests the groups are a powerful support to individuals who otherwise have no avenue to think about the psychological impact of their experiences. The groups have decreased feelings of isolation and bolstered resilience.

Discussion and Conclusions: We have faced challenges in the practicalities of establishing and maintaining groups. We are working with Training Programme Directors to move towards running the groups in protected time within working hours. A particular strength of the groups is the collaboration across specialties, which includes both peer-to-peer facilitator training as well as peer-to-peer support.

Take-home Messages: If there is anything positive to come from this pandemic, perhaps it will be the heightened realisation of the importance of peer support. We advocate groups providing peer support and a space for reflection as a key part of future medical and surgical Training Programmes.
ABSTRACT:
Background: A healthy and secure learning environment is essential for optimal medical training. Harassment has a negative effect on residents’ health and on their ability to function. No previous study has documented the prevalence of sexual violence (SV) and gender discrimination (GD) among residents in Mexico.

Summary of Work: Objective. To determine the prevalence of sexual harassment and gender discrimination during medical specialization, as well as to characterize the factors associated with it in both men and women. Methods. A multi-institutional, cross-sectional and comparative study was conducted in medical residents who were willing and able to participate from September 2018 to March 2019. Demographic- Academic variables and self-reports of gender-based discrimination and sexual harassment were examined. Comparative analyses and multiple linear regression models were performed.

Summary of Results: A total of 5041 medical residents (from 60 different specialization courses) were evaluated. 51% (n=2578) were female with an average age of 30.62 years (S.D.=2.94); the majority were enrolled in the first and second year of the specialty (n=1689, 33.5% and n=2610, 51.8%, respectively), in a public institution (n=4650, 92.2%). At least one of type of SV and GD was reported by 83.6% of the sample. Bivariate analysis revealed an association between SV and GD with female sex (p=0.03 and p=0.002, respectively), not having a partner (p=0.04), being coursing the second year of training (p=0.009 and p=0.001, respectively) and being coursing a surgical specialty (p=0.001 and p=0.001, respectively). In the final multivariate model, the variables were strongly associated with SV and GD: second year training (OR2.78; p=0.01 and OR3.11; p=0.04, respectively), and surgical specialty (OR5.69; p=0.03 and OR4.23; p=0.01, respectively).

Discussion and Conclusions: SV and GD of Mexican residents is common with more than three-quarters reporting having had such an experience. Identification of the risk factors is a necessary first step in clarifying this issue and could be used when planning strategies for prevention.

Take-home Messages: Redressing sexual inequalities in medicine will require more than increasing the numbers of women in male-dominated specialties; the changing roles of the sexes in society, learning styles, hospital-based training and the professional identities of women in a largely masculine medical hierarchy are all deeply relevant.
RESIDENT STRESS AND ITS ASSOCIATION WITH PROGRAM LEADERSHIP RESPONSE DURING THE COVID-19 PANDEMIC

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ABSTRACT:
Background: Resident stress is likely exacerbated by the COVID-19 pandemic. Clinicians face unique challenges due to exposure risk, work demands, and psychological distress. Previously, housestaff reported difficulty balancing duty to care with personal safety. In times of crisis, effective communication from leadership can mitigate stress. The burden of resident stress, contributing factors, and association with program leadership response during such crises have not yet been explored.

Summary of Work: We conducted a cross-sectional survey of pediatric, medicine-pediatric (MP), and internal medicine (IM) residents in a single institution. Survey items included demographics, the Perceived Stress Scale (PSS), and evaluation of COVID-specific factors including program leadership response. Bivariate data analysis by unpaired t-test or ANOVA was used to compare mean PSS scores to other variables.

Summary of Results: Of eligible pediatric (n=98), MP (n=16), and IM (n=162) residents, survey response rates were 59%, 75%, and 44% respectively. Most residents (63%) reported at least moderate stress. Increased PSS scores were associated with prior mental health diagnosis, self-quarantine, and concern for resident families safety. Mean PSS scores did not correlate with number of COVID patients, personal safety concern, undergoing COVID testing, or family members diagnosed with COVID. Among all programs, 35% of residents felt program leadership response was not at all/mildly effective in alleviating stress; 65% felt it was moderately/very effective. Mean PSS scores independently and inversely correlated with perceived response effectiveness; mean scores were 21.3 (not effective), 18.0 (mildly effective), 14.4 (moderately effective), and 13.6 (very effective) (p<0.05).

Discussion and Conclusions: Residents experience stress amidst the COVID-19 pandemic. Although stress can be mitigated by measures from residency leadership, our study highlights a need for improved communication during crises. We plan to conduct a qualitative study to better understand residency leadership communication and its relationship to resident well-being.

Take-home Messages: 1. Resident physicians have felt significant stress during the COVID-19 pandemic. 2. Specific predictors of stress include prior mental health diagnosis, self-quarantine, and concern for resident families safety. 3. Stress is independently and inversely correlated with perceived leadership response effectiveness.
ABSTRACT:
Background: In Family Medicine residency training at Memorial, each resident is connected with a Faculty Advisor. As a coach and mentor, this Faculty Advisor works with the resident for the duration of their residency. Residents and their Faculty Advisor officially meet for Faculty Advisor Meetings three times a year. In efforts to establish meeting consistency several resources were developed.
Summary of Work: The Dance Steps: a guide on how to prepare for and conduct the Faculty Advisor Meeting, a video demonstrating a typical meeting and Resident Reflection, Faculty Advisor Meeting and Learning Plan forms were developed. Intervention The Dance Steps and video were shared with sixty residents and ten Faculty Advisors prior to the Faculty Advisor Meetings. Meeting preparation included completion of the Resident Reflection Form and Faculty Advisor review of the residents portfolio for evidence of progression and compiling notes regarding questions for discussion. Conducting the meeting involved listening to and coaching the resident, reviewing evidence of progression, discussing areas of strength and strategies for improvement. Finally, the Faculty Advisor Meeting Forms and Learning Plan were completed collaboratively. Following the Faculty Advisor Meetings, the Learning Plan and the Faculty Advisor Meeting Form were given to the Family Medicine Residency Office for review and action, as necessary.
Summary of Results: Residents and faculty expressed liking the layout, format and structure. Faculty found the Resident Reflection form useful to get the residents thinking about areas in which they feel deficient and develop a plan, and they found that the forms definitely helped to focus discussion. The Family Medicine Residency Program reported consistency with Faculty Advisor Meetings and with feedback to the Residency Program.
Discussion and Conclusions: The Faculty Advisor Meeting resources have provided consistency across Faculty Advisor Meetings. Residents and Faculty Advisors know what is expected of them leading up to, during and following the Faculty Advisor Meetings.
Take-home Messages: The Faculty Advisor Meeting resources have provided consistency across Faculty Advisor Meetings. Residents and Faculty Advisors know what is expected of them leading up to, during and following the Faculty Advisor Meetings. These results are applicable to any residency training program looking to enhance their Faculty Advisor/Mentor meetings.
#EPOD-SEL: Selection & Widening Access to Medicine

#EPOD-SEL1 Widening Participation Initiative During COVID-19 (8663)

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ABSTRACT:
Background: Aimed at encouraging underrepresented socioeconomic groups to apply for medicine, widening participation initiatives have flourished in recent years. Different universities employ a multitude of strategies, ranging from lecture series and mentorship programmes to clinical attachments and formal courses. One such strategy employed at our institution is supported orientation to clinical environments. Unfortunately, due to the COVID-19 pandemic, we are currently unable to continue this practice safely, requiring the adaption of our programme.

Summary of Work: We designed a simulated virtual ward round involving six scripted interactions, using a mixture of faculty, standardised patients and high-fidelity manikins. Three scenarios were designed to demonstrate the life as a medical student with three demonstrating life as a healthcare professional. The interactions were professionally filmed and were edited together with interviews from faculty regarding their roles within the scenarios. To gain a wide reach, this collection of videos will be distributed via different online platforms.

Summary of Results: 14 faculty members were surveyed for their perceptions of the project and recommendations for future improvement. All 14 stated they would consider being involved in similar projects again. Reasons for participating included giving back and enabling a wider demographic of school students to gain a realistic insight into a career in healthcare, specifically within the NHS. Areas highlighted for improvement included involving more allied health professionals and ensuring diversity in those filmed for the project.

Discussion and Conclusions: We have produced a series of easily disseminatable videos that will give high school schools an insight into the realities of their potential life as a medical student and future healthcare professional. Ensuring widening participation initiatives continue despite the pandemic is an essential endeavour and we have provided a novel method by which this can be achieved.

Take-home Messages: • Widening participation initiatives involve a range of strategies aiming to improve diversity in healthcare professions. • Due to the COVID-19 pandemic, new strategies are needed to ensure these initiatives remain successful. • Filming and disseminating simulated scenarios of healthcare settings is an effective and pragmatic method to adapting widening participation initiatives to the current pandemic.
#EPOD-SEL: Selection & Widening Access to Medicine

#EPOD-SEL2 The effect of the COVID-19 pandemic on medical school applicants (9583)

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ABSTRACT:
Background: Medicine has long been regarded as an elitist career - approximately 75% of UK applicants have parents from the highest socioeconomic group. In March 2020, the COVID-19 pandemic and subsequent lockdown led to nationwide school closures. The objective of our study was to evaluate the impact of the pandemic on the medicine application process and to classify aspects that could be improved.

Summary of Work: We performed a quantitative and qualitative analysis using a questionnaire. Participants were recruited from the AspireMEd Medicine Applicants Virtual Conference which took place in August 2020. The conference was advertised by emailing state and non-state schools, advertisements on social media, and outreach from widening participation programmes. Qualitative data was analysed using a grounded theory approach, coded by two researchers.

Summary of Results: We received a total of 1,271 responses from 1,459 delegates. Respondents felt less supported by their school in applying to medicine (60.8%) and less supported due to the pandemic compared to previous applicants in their school (61.7%), particularly regarding accessing work experience (55.9%). There were varied responses about feeling supported during lockdown to consider a career in medicine, however, the events of the pandemic encouraged 61.4% of respondents to pursue a healthcare career. The core category was inequalities between student groups and was underpinned by three main categories: (a) barriers to obtaining sufficient support due to structural (types of school), financial (costs of aptitude tests) and personal (health status, caring responsibilities) factors; (b) availability of free resources to support aptitude tests, interviews and difficulties surrounding acquiring sufficient work experience; and (c) insufficient consideration into contextual factors, particularly for students with difficult circumstances.

Discussion and Conclusions: Our taxonomy of the difficulties of applying to medicine supports the development of specific widening participation strategies. The impact of the pandemic has affected students, particularly those from lower socioeconomic groups, state schools and students with disabilities and caring responsibilities. Widening participation promotes variety in the workforce so that doctors can reflect the communities they serve.

Take-home Messages: COVID-19 has had a considerable impact on students in their medical school applications. Focused strategies should be implemented to target specific student groups to widen participation in medicine.
#EPOD-SEL: Selection & Widening Access to Medicine

#EPOD-SEL3 The Modern Dental School Applicant: An overview of the current admission process for UK dental schools and the socio-economic status of applicants (8349)

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ABSTRACT:
Background: Aims: Successful admission into dentistry is a competitive and multifaceted process. This research aims to determine the current processes used to assess dental school admissions in the United Kingdom (UK) as well as compare the applicants demography.

Summary of Work: Methods: All sixteen dental schools in the UK were approached and invited to complete a questionnaire analysing the admissions protocols between 2018-2019 and 2019-2020. This data was combined with the online admission process information and prospectuses available. A retrospective analysis of data from the University Clinical Aptitude Test (UCAT) including the socio-demographic status of dental applicants was completed.

Summary of Results: Results: The majority of applicants are female (61.5% in 2018-2019, 63.2% in 2019-2020), white (29.5%, 27.9%) and attended a Sixth Form or Further Education College (39.9%, 40.6%). Out of the thirteen universities, the number of dental applicants has increased from 9397 in 2018-2019 to 10,105 in 2019-2020. Out of fourteen universities, 4287 applicants were invited to interview in 2018-2019 and 4578 in 2019-2020, and 2467 applicants were offered a place in 2018-2019 and 2465 in 2019-2020. Out of eleven universities, there were 795 places available in 2018-2019 and 822 in 2019-2020.

Discussion and Conclusions: Conclusion: Further advancements are required to widen participation and broaden the socio-demographic status of dental applicants. This area would benefit from a long-term prospective study about recruitment methods and its correlation with performance at dental school. COVID-19 is impacting the application process, the full extent of which is yet to be determined.

Take-home Messages: Key Points â— Provides an overview of the current admission processes for dental schools within the United Kingdom (UK). â— Encourages critical analysis of the admission processes used for undergraduate and postgraduate dental students. â— Explores how the admission processes may change as a result of the COVID-19 pandemic. â— Gives an indication as to the socio-demographic of the future dental career force
#EPOD-SEL: Selection & Widening Access to Medicine

#EPOD-SEL4 What qualities of students do Japanese medical schools seek? A quantitative text analysis of admission policies (8499)

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ABSTRACT:
Background: In Japanese higher education, it is imperative to establish an admission policy, which describes qualities of students that a university seeks with its student selection procedures. However, little is known what qualities of students that Japanese medical schools seek. This study aims to explore what words frequently appear in their admission policies and how these words connect with each other to describe ideal candidate profiles for medical schools.

Summary of Work: All 80 Japanese medical schools, except the National Defense Medical College and one without its admission policy, were included for this study. We examined their admission policies stated on their websites, using the KH-coder, an open-source program for quantitative text analysis. Based on word appearing frequency, word co-occurrence networks were created to identify patterns of the associations between words in a text.

Summary of Results: The top 3 most frequently utilized words were do (257 times), person (242 times), and have (131 times). Frequently appearing words related to medical professions were identified as medicine (108 times) and medical care (92 times). Other commonly utilized words include ability (63 times), society (61 times), willingness (56 times), community (49 times), and contribution (48 times). According to the word co-occurrence network, medicine was associated with words such as learn, necessary, fundamental, and academic ability, indicating the importance of fundamental academic abilities to study at medical school. Additionally, medical care was identified as related to words such as contribution, community, interest, and willingness, suggesting that medical schools seek applicants with a great interest in and willingness to contribute to communities through medical care.

Discussion and Conclusions: To our best knowledge, this is the first study that explored admission policies of medical schools nationwide in Japan. Medicine and medical care were frequently utilized in their admission policies. Thus, they seek applicants who not only possess basic academic skills to learn medicine but also possess a significant interest in and willingness to make contributions by providing medical care.

Take-home Messages: Medical schools look for essential characteristics beyond academic skills, such as interest in medicine and willingness to contribute to the society through medical care.
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ABSTRACT:
Background: The academic foundation programme (AFP) is an alternative training programme for newly qualified medicine graduates, providing a national integrated clinical academic pathway. Benefits of the AFP include opportunities to develop leadership, management, and teaching skills, amongst others. As a competitive programme, the AFP application process involves candidate interviews, with many organisations offering mock interviews to aid preparation. The coronavirus pandemic and UK lockdowns have raised a challenge for holding in-person interviews. Student societies at Imperial College London have traditionally held in-person AFP mock interviews. We sought to investigate the viability of virtual mock interviews (VMIs), with a paucity of literature on the viability of such a format.

Summary of Work: AFP doctors were recruited using personal contacts and social networking sites. Tutorials on the AFP and its application process, including a guide to interviews, were delivered to potential applicants. VMIs were then held utilising the breakout rooms functionality of Zoom video-conferencing software. Post-VMI, mock interviewees were emailed a questionnaire covering a range of topics, including overall VMI usefulness and structure, candidate confidence post-interview, and comments on examiner engagement and the quality of feedback provided.

Summary of Results: 26 VMIs were held, and 17 candidates (65%) filled in the post-VMI questionnaire. Candidates had overwhelmingly favourable views; 82% of respondents strongly agree that the session was well-structured, easy to follow, and useful, while all candidates agreed (41%) or strongly agreed (59%) that they were more confident about their AFP interview post-VMI. Personalisation of examiner feedback was a valued element, along with provision of tips for improvement, with candidates mostly valuing knowledgeable examiners that allowed student answers to guide the interview.

Discussion and Conclusions: Candidates favourably viewed the VMIs, demonstrating that despite the unfamiliar virtual nature of the event, VMIs are a viable alternative to face-to-face interviews. Interviewees were not held back by having to converse via video call; candidates felt feedback was greatly personalised, and that the course of interview questions was tailored to student responses.

Take-home Messages: Overall, our results demonstrate that VMIs are a viable and useful alternative for candidates preparing for their AFP interviews.
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ABSTRACT:
Background: Protective face coverings are an essential component in reducing transmission of COVID-19. However the potential effect on communication cannot be ignored especially in the context of doctors interviewing for their next stage of training. Prior to the pandemic’s second wave there was uncertainty around whether interviews for Internal Medical Training (IMT) and Core Surgical Training (CST) would be delivered face-to-face or virtually.

Summary of Work: Mock interviews were run for IMT and CST with strict adherence to social distancing and infection control guidance. Numbers were limited to 15 interviewees and 11 interviewers. Five circuits ran over a 2 day period. All content was designed to reflect station objectives and mark schemes used by recruitment teams. A questionnaire was given to all involved containing free text questions pertaining to the effect of face coverings on communication and views on the possibility of virtual interviews. All questionnaires were collected anonymously by a member of staff external to the mock interview team.

Summary of Results: Free text questions were analysed using thematic analysis by two separate coders. In respect to communication between interviewer and interviewee, the three main themes related to masks identified by both groups were; loss of social and non-verbal cues, difficulty reading facial expressions, difficulty gauging reactions. Themes identified by both groups with regard to views on the possibility of virtual interviews were issues with technology and difficulty reading body language. Interestingly, interviewers also revealed rapport and engagement as an area of concern.

Discussion and Conclusions: Following completion of our project the decision has been made for IMT and CST interviews to take place virtually. However it is possible interviewers may still be in the same venue and thus required to wear masks. The main issue identified by both groups was a loss of non-verbal communication. Given that non-verbal communication constitutes up to 55% of overall communication, our project highlights the importance of ensuring measures are put in place to minimise the potential negative effects of this loss. This could be achieved through raised awareness of communication challenges, and increased effort in speaking slowly and clearly.

Take-home Messages: Communication challenges must be taken into consideration in preparation for upcoming virtual interviews.
#EPOD-SEL7 Virtual Interview, Real Anxiety: Prospective Evaluation of a Focused Teaching Programme on Confidence Levels Among Medical Students Applying for Academic Clinical Posts (9013)

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**ABSTRACT:**

**Background:** In 2020, final year medical students applying for the UKs competitive academic training posts faced an additional challenge because selection interviews were conducted online rather than in-person, due to the COVID-19 pandemic. We assessed how this new format influences anxiety and the impact of a targeted course on candidates confidence levels.

**Summary of Work:** A mixed-methods, online, national teaching programme including bespoke virtual mock interviews was delivered to prospective Academic Foundation Programme (AFP) applicants. Pre- and post-interview questionnaires assessed anxiety levels subjectively and using a Measure of Anxiety in Selection Interviews (MASI) score, which evaluates five domains of anxiety: communication, appearance, social, performance and behavioural.

**Summary of Results:** 31 individuals from 17 different universities across the UK attended the course, with 27 participants (87.1%) completing the pre-course questionnaire and 22 (71.0%) completing the post-course questionnaire. Individuals self-reported greater confidence, experience and preference for interviews delivered in-person. Post-course, there was an increase in self-reported confidence levels specific to online interviews (p = 0.00899) and lower MASI scores in three of five domains, indicating reduced anxiety (social: p = 0.00441, performance: p = 5.57532E-6, behavioural: p = 5.57532E-6).

**Discussion and Conclusions:** Unfamiliarity with the online interview format is likely to disadvantage candidates more susceptible to anxiety, but attendance at a tailored preparatory course including a bespoke online mock interview can increase subjective confidence of online interview performance and lead to reduction in three out of five key anxiety domains assessed by the MASI tool.

**Take-home Messages:** A structured course can increase confidence and reduce anxiety for online academic medicine interviews.
#EPOD-CST: Students' Response to COVID-19

#EPOD-CST1 Worldwide involvement of Medical Students in the COVID-19 Pandemic (9262)

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ABSTRACT:

Background: The COVID-19 pandemic has led healthcare systems worldwide to find themselves overburdened and understaffed. There is paucity of research on the role of medical students in global emergencies as well as medical schools responses to lockdowns. The aim of this study is to assess the roles assumed by medical students worldwide and provide insights during this pandemic but also for future global health emergencies.

Summary of Work: A global quantitative study was held during April 2020. Data was collected through a pretested, questionnaire disseminated on the social media platforms of the International Federation of Medical Students Associations. Inclusion criteria of the study were current medical students and recent medical graduates. Quantitative data was analysed using IBM SPSS and Microsoft Excel while RQDA and Nvivo were used for qualitative data analysis. The research was authorised and approved by the IFMSA Executive Board.

Summary of Results: The questionnaire received 279 responses from 101 countries. 63.4% of respondents studied in LMICs and 36.6% of respondents in HICs. The respondents were from different stages of their medical studies. Medical students played many roles, with raising awareness (20.3%), medical assistance (14.4%), and answering helplines (13.1%) being reported most often. 61.8% of respondents were unpaid for their roles. 18.6% of respondents did not feel skilled enough to perform their assigned roles. 16.5% of medical students reported that their well-being was negatively impacted by the role that they played.

Discussion and Conclusions: Our results confirm that medical students are both willing and contributing to the pandemic response. The organisation of these roles varies both among and within countries. Strong ethical consideration of medical students well-being and safety is necessary when designing their roles for future crises.

Take-home Messages: Medical students are a valuable resource and have a strong willingness to help out in pandemics, so their help should be sought in further pandemics; More consideration into the ethical aspects of student involvement, including their safety should be taken into account; Medical students own values, needs and competencies should be taken into account when designing future roles during a pandemic.
#EPOD-CST: Students' Response to COVID-19

#EPOD-CST2  MEDHAX: The impact of a student co-design approach to create socio-clinical medical resources for preclinical learning (8615)

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ABSTRACT:

Background: Evidence-Based Medicine (EBM) and Health Sociology (HS) are essential elements of person-based medicine. However, many preclinical medical students struggle with understanding the application of these topics to future practice. MRHC created MEDHAX- an integrative, by students, for students resource to address this issue and provide clinically relevant connections for preclinical medical students.

Summary of Work: Adopting a collaborative approach involving students, academics and clinicians, an online interactive resource was developed called MEDHAX. Specifically targeting areas requiring a focused clinical integration to improve the student experience and understanding of EBM and HS, MEDHAX has been embedded into the preclinical graduate-entry medical program since 2019 as a post-class revision tool. Currently there are seven animated case-based tutorials curated, with supplementary interactive modules, clinician interviews, summary notes and practice examination questions designed to consolidate knowledge and enhance student learning.

Summary of Results:
Website analytics revealed a two-fold increase in engagement between 2019 and 2020, from 404 unique users to 980. A validated survey tool (PULTS) showed that MEDHAX was considered an efficient, flexible platform which helps students identify priorities for EBM and HS learning. Results indicate a significantly improved understanding of EBM and HS concepts after using the resource (average 4.3 and 6.5 out of 10 before and after respectively, p=0.001) and would recommend the resources to others (average 5.46 out of 6). Thematic analysis of two years of evaluative surveys, affirms MEDHAX is a well-received revision tool that supports assessment preparation and readiness for clinical practice.

Discussion and Conclusions: MEDHAX has successfully improved student understanding and appreciation of EBM and HS concepts. Increased student usage in 2020 highlights the utility of MEDHAX as a learning resource during COVID-related educational disruptions. Future research directions for MEDHAX involve exploring its role in the changing landscape of medical education and its incorporation into wider contexts.

Take-home Messages: A by students, for students approach to developing online teaching materials improves student understanding, buy-in and engagement; all integral in the changed educational landscape of COVID-19. Integration of clinical cases is essential for embracing person-centred care in applying EBM and HS concepts.
ABSTRACT:
Background: Considering evidence on competency-based curriculum and the benefits of volunteering, this study highlights new ideas to improve medical education during the COVID-19 pandemic. We investigated the motivations and perceptions on competencies developed as leadership and management skills in medical students who joined COVID-19 Volunteering Program in a Brazilian medical school.

Summary of Work: We performed a cross-sectional, quantitative and qualitative study involving medical students from the University of Sao Paulo (USP)/Brazil. They were invited to participate in an institutional Volunteering Program during the pandemic, and filled online application forms, including sociodemographic fields and two open-ended questions about motivation to volunteer and perceptions on their own competencies. At the end of the Program, students who were involved in management-related activities were also invited to participate in focus group interviews to track their perceptions about volunteering in this area. Data were submitted to descriptive and content analysis methods.

Summary of Results: 286 medical students have subscribed to the Volunteering Program: 171 (60%) were men, 152 (53%) were enrolled in 5th year and 158 (55%) were 23-25 years old. One-hundred and twelve (44%) students volunteered motivated by altruistic reasons, 95 (37%) reported duty and 47 (19%) prioritized academic interests. Concerning CanMEDS competencies, 91 (36%) students responses matched with the Scholar component, followed by 51 (20%) with Collaborator, 49 (20%) with Professional, 32 (13%) with Communicator, 17 (7%) with Leader and 11 (4%) with Health Advocate. In focus groups, students reported the importance of management and leadership skills as a curricular component, motivations to volunteer, the acquired skills from volunteering in management and leadership-related activities, highlighting the development of resilient attitude.

Discussion and Conclusions: Students who participated in the FMUSP Volunteering Program reported being motivated to help others (altruistic reasons) and to serve society as future health professionals (duty). Knowledge and work-related competencies prevailed over leadership or soft skills, emphasizing the importance of including such activities in curriculum. Participating in management-related activities could help develop a more resilient attitude towards medical training.

Take-home Messages: Volunteering programs offer students opportunities to develop essential competencies for the future health professional. Thus, we should think about including such activities in curricular structure.
#EPOD-CST: Students’ Response to COVID-19

#EPOD-CST4 Medical Students’ Experience of Lockdown during COVID-19 Pandemic - A Phenomenological Study (9697)

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ABSTRACT:
Background: A global pandemic was declared by World Health Organization on March 11th 2020. The government of Pakistan imposed a country-wide lockdown, closing all educational institutes. This study aims to explore lived-in experiences of medical students from Pakistan during state-wide lock-down.

Summary of Work: A phenomenological, qualitative study was conducted. Purposive sampling was used to interview 34 medical students from all over Pakistan. Consent was obtained for participation and audio recording. Data collection included demographics and answers of open-ended questions related to experience of lockdown. Themes and sub-themes were identified through manual thematic analysis.

Summary of Results:
4 major themes included: 1. General Experience It was a conflicting experience for the participants. For some it created a sense of euphoria in the beginning which eventually faded. Participants said: felt good because I didn’t have to wake up early initially I was happy that college had closed down but then I tested positive and my father passed away. 2. Personal Experience A large number of participants said that they spent more time with family, however it was unpleasant for some, one participant confessed everyone was short tempered and very stressed. The students believed in mobilizing the community through social media campaigns. A lot of them adopted hobbies while others took spiritual support such as: -Took refuge in religious activities and studies. 3. Academics Students had mixed feelings about online classes. The students found them convenient to attend but were concerned about clinicals/practicals. The students expressed their discontent over teachers not being able to use gadgets. Connectivity issues were seen as a major barrier by most. 4. Future prospective/Suggestions Students were excited to meet their friends but had doubts regarding SOPs. Clinical rotations will be affected...I will be concerned about going to hospitals too. Additionally, delaying of exams was increasing their anxiety.

Discussion and Conclusions: It was a roller coaster of emotions for students at personal level and the unpredictability of what future holds for them further increased the stress of the lockdown.

Take-home Messages: Communication gap between teachers and students should be filled to make online classes a success. Colleges should take into consideration personal trauma and ensure student counselors.
#EPOD-CST: Students' Response to COVID-19

#EPOD-CST5 A rapid systematic review exploring the involvement of medical students in pandemics and global health emergencies (8712)

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ABSTRACT:  
Background: Medical students represent a reservoir of potential that could be an addition to the global health workforce if required. This systematic review aims to explore how medical students have been involved in past pandemic and global health emergencies and their willingness to do so, to help inform both current and future scenarios.

Summary of Work: A rapid systematic review was undertaken, including articles discussing the roles, willingness and appropriateness of medical student involvement in acute public health emergencies. The protocol was registered with PROSPERO (number: CRD42020177231). A rapid approach was adopted in order to publish the work in time to inform the current pandemic.

Summary of Results: 28 articles were included. Medical students have played a wide variety of roles. Medical assistance was the most commonly reported role. Others included non-clinical roles such as raising awareness and working in hotlines. Common challenges included lack of supervision and balancing their education. Negative mental health impacts were also described. In 11 out of 12 articles discussing willingness, medical students were more willing to be involved than not. However, students preparedness was low in comparison, highlighting the need for more disaster management training in curricula. We have identified areas of paucity in the literature including appropriateness of the roles and their ethical issues, better description of roles undertaken in such situations and the impact on the pandemics when medical students were involved.

Discussion and Conclusions: Medical students are willing to be involved during health emergencies. However, there needs to be a protocol and clear structure for the role that medical students play, taking into account the appropriateness of these roles. More research is needed towards the impact of roles on the system and the medical student themselves.

Take-home Messages: Both clinical and non-clinical roles have been undertaken in past global health emergencies by all levels of medical students. Local resources, needs and students skill sets should be taken into account when planning. The mental health of students should be a priority before, during and after their involvement. Increased training and education in certain skills and topics should be considered either in medical school curricula or before students undertake certain roles.
#EPOD-CST: Students' Response to COVID-19

#EPOD-CST6 A qualitative evaluation of a COVID responder scheme for medical students (9527)

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ABSTRACT:
Background: The first UK wave of COVID-19 led to the temporary suspension of medical school placements. Medical students were offered paid employment through a COVID Responder Scheme (CRS). We aimed to qualitatively assess the experience of those who participated in this scheme in comparison to traditional clinical attachments.

Summary of Work: A bespoke questionnaire was designed to explore key themes identified through theme selection, literature review and consensus. Following piloting and validation, the questionnaire was circulated to students recruited to the CRS. A grounded theory analytic framework was used to analyse data. A modified-Delphi consensus process was used to reach a consensus on what makes you feel most valued as a medical student.

Summary of Results: 36 students (46.2% response rate) responded. 86.1% of respondents felt their contribution was worthwhile. 65% reported being significantly more integrated into a team than in their university attachments. Concerns prior to starting CRS work included availability of PPE and the ability to contribute effectively, but refreshingly these concerns did not present as challenges. The steep learning curve of experiential learning alongside virtual teaching commitments proved difficult to juggle when facing physical, mental and emotional fatigue from long hours working busy clinical shifts. Respondents cited the educational benefit of the CRS throughout the survey. Recognition and commendation were highly effective in providing a sense of value ahead of renumeration. 44.4% of respondents were concerned about their future training and a reduction in clinical exposure.

Discussion and Conclusions: The majority of respondents reported CRS work as worthwhile, with reasons including increased responsibility for patient care and a sense of contribution to the clinical team. This in turn led to autonomous practice and task accountability, which further integrated them into the team and developed their clinical confidence. A students sense of value was strongly linked to being identified in emotional responses from colleagues and patients ahead of financial renumeration, suggesting scope for improvement within unpaid attachments / rotations.

Take-home Messages: There is an opportunity to take value from the COVID-19 medical student experience to improve undergraduate medical education through and beyond the pandemic.
#EPOD-CST: Students' Response to COVID-19

#EPOD-CST7 Medical Grand Challenge: Moving from face-to-face to virtual (8759)

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**ABSTRACT:**

**Background:** The Medical Grand Challenge (MGC) is a student-led medical innovation programme started by the Yong Loo Lin School of Medicine, National University of Singapore in 2017. MGC targets undergraduate students from various faculties to engage them with the three phases of the innovation process: identify, innovate and implement. With the assistance of clinical mentors and an accompanying seminar series, participants work through the year on a project to solve a clinical need and showcase during the Grand Finale Night. This presentation will share the process of converting MGC into a virtual format during COVID-19 as well as the feedback received.

**Summary of Work:** Seminar series were conducted online using Zoom where invited speakers utilised Fireside Chats to share their expertise and discuss relevant topics surrounding an over-arching theme. This encouraged active learning and interaction between all parties. The MGC student organising committee took additional steps to ensure a smooth run of the Grand Finale night. Trial runs were conducted to familiarise different stakeholders with the flow via Zoom webinar. On the day itself, 14 shortlisted teams were each given 6 minutes to pitch their projects and address the judges queries with a group of 200 attendees. Judges were also given the online scoring sheet and had their discussion in breakout rooms. Post-event online surveys were administered to the participating teams and judges to obtain their feedback.

**Summary of Results:** Students and judges generally felt that the MGC was well-organised and the trial runs were useful. However, there were several areas for improvement such as uploading of seminar recordings for future viewings and improving the process of communication, particularly, avoiding last-minute changes in the pitching format.

**Discussion and Conclusions:** A large event like MGC with multiple sub-events showcasing medical products during this pandemic can be effectively conducted using an online platform. The lessons learnt (e.g. thorough planning, effective communication) will be applied in post-COVID MGCs.

**Take-home Messages:** Careful prior planning and close coordination between different stakeholders and leadership support are the key areas in converting a face-to-face event to a virtual format.
#EPOD-CST: Students' Response to COVID-19

#EPOD-CST8 Student nurses' COVID-19 education before clinical practicum (8519)

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ABSTRACT:
**Background:** COVID-19 is an emerging disease. A teaching hospital not only has to take efforts preventing clinical professionals from the threats of COVID-19, we are also responsible for the safety of students during the clinical practicum. In order to create a safe and secure environment for student nurses to practice in the hospital, it is important to prepare them with positive knowledge, skills and attitude before the clinical practicum.

**Summary of Work:** Right after the outbreak of COVID-19, we developed an Epidemic Prevention Training Program for student nurses during February to March 2020. In order to well prepare the students, we provided online resources about epidemic prevention information, and epidemic prevention experiences sharing from nursing preceptors before the students entering the clinical practicum. We hoped the student nurses would be able to understand epidemic prevention strategies and cooperate with the implementation of hospital epidemic prevention policies, therefore would reduce their anxiety before entering the clinical.

**Summary of Results:** We examined 628 student nurses anxiety levels before the intervention, and after 2 weeks of the clinical practicum. The anxiety level of the student nurses was scored 6.8 (SD) before the internship and 2.8 (SD) after the intervention. There is a significant drop of anxiety level (p<.001) after the Epidemic Prevention Training Program. The result showed that providing the nursing students necessary information relating to epidemic prevention before the clinical practicum can reduce their anxiety.

**Discussion and Conclusions:** Literature revealed that the COVID-19 pandemic might impact the students choice of nursing as a career. The result of this study implies that we can reduce their anxiety as we well prepare them before their entering clinical practicum. The COVID-19 epidemic situation is still serious, it is fortunate that nursing students in Taiwan are able to have hands-on practice opportunities in the hospitals. This study provides an approach that can prepare students for epidemic control information and anxiety reduction.

**Take-home Messages:** This study implies that we can reduce Students nurses anxiety as we well prepare them before their entering clinical practicum. The COVID-19 epidemic situation is still serious, it is fortunate that nursing students in Taiwan are able to have hands-on practice opportunities in the hospitals.
#EPOD-CST: Students' Response to COVID-19

**#EPOD-CST9 Neurological examination lab during SARS-CoV-2 Pandemic: An experience from Humanitas University, Milan, Italy (8901)**

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**ABSTRACT:**

**Background:** Principal diagnostic and physical examination skills in neurology are of paramount importance for every aspiring physician. Merging solid theoretical knowledge with structured practical activities is an efficient way to strengthen the learning process. However, SARS-CoV-2 pandemic hard tested the possibility to perform such activities.

**Summary of Work:** Despite the second pandemic wave Italy faced (October 2020), Humanitas University implemented innovative simulation-based flipped-learning methods to provide students with a high-quality neurological practical activity. The five-days neurology lab was re-designed aiming at avoiding unnecessary contacts and maximizing students skills acquisition, arranging groups of fifteen students. SARS-CoV-2 serology and/or swab testing and the necessary PPIs were offered to every student before the beginning of the activities. Day one: 4-hours of general introduction by two senior neurologists on the core theoretical and practical aspects to be achieved. Neurological physical examination videos, shot on real patients with neurological conditions, were also provided to students to be studied remotely. Day two-four: 1.30-hour frontal discussion addressing the most striking aspects of the video recordings; 2.30-hours of role-playing simulation: every student performed both the examining physician and the examined neurological patient, miming a neurological syndrome. Day five: official evaluation. Students ability to conduct a full neurological examination on a hospitalized patient in the ward was assessed by a senior neurologist.

**Summary of Results:** Students underlined that flipped-learning video-based activities helped grasping the essence of different neurological syndromes and the required skills to recognize them. Physician role-playing helped consolidating these skills, while patient role-playing reinforced syndromes understanding. Moreover, the first day introduction proved to be useful by strengthening the concepts already acquired during the frontal lectures held at the start of the semester.

**Discussion and Conclusions:** As a medical student, I consider flipped-learning-based activities a powerful and innovative method to build solid knowledge on the intricated field of neurology. Real patients recordings with a subsequent debriefing coupled with the extremely effective role-playing simulation may reinforce future physicians clinical competences in neurological semiology. Application of these methods to other medical fields should also be considered.

**Take-home Messages:** Flipped-learning activities proved to be useful and appreciated by the students. Role-playing learning methods may furtherly help improving students long-term knowledge retention.
# EPOD-SC: Student Characteristics/Engagement with their Learning

**EPOD-SC1 Self-control leads to happiness? - An analysis from the semi-structured interview regarding medical student responses to their internet behaviors (9320)**

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**ABSTRACT:**

**Background:** Many reports have shown that persons with better self-control feel happier and have a greater chance of success. It is still poorly understood whether medical students with different responses towards their internet behaviors have different impacts on their feeling of happiness.

**Summary of Work:** Year-2 medical students opting for the optional course Narrative, Comprehension, and Communication were enrolled in the semi-structured interview regarding their purposes of using the internet, time periods for surfing the internet, and impacts on the self-emotion and -perception.

**Summary of Results:** Totally 28 medical students (13 females) were enrolled, with 32%, 54%, and 14% of students spending < 2 hours, 2-6 hours, and > 6 hours per day, respectively, on the internet. 43% of students used the internet for online gaming. The guilty feeling was found in 14% of students, all of whom were male with online gaming and the internet surfing time > 6 hours. 43% of medical students felt enjoyable and relaxed (50% of them were male, 42% with online gaming, and 67% with surfing time < 2 hours per day). Compared with the male, female students were more emotionally susceptible to information from social networking sites (46% vs. 6%).

**Discussion and Conclusions:** From the analysis of our interview results, we had the following several conclusions: First, internet activities may bring a positive feeling to medical students if they have good self-control towards content selection and time management. Conversely, loose self-control may lead to longer internet surfing with more online gaming and a guilty instead of enjoyable feeling. Strengthening self-control training in medical education may enable our digital native medical students to have a more positive attitude in facing future highly stressful working environment.

**Take-home Messages:** True liberty is to have power over oneself in all things (by Michel de Montaigne).
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ABSTRACT:
Background: Online laboratory support tools provide opportunities for more student-paced autonomous learning experiences while preparing for practicals. To successfully work in such an online experiment environment outside class, students require self-regulated learning (SRL) skills. This pilot study aimed to explore differences in students appreciation of the online laboratory education software tool, LabBuddy, related to their SRL capacity.

Summary of Work: The population consisted of 20 participants enrolled in the elective course molecular pathology, offered within the BSc biomedical curriculum of Utrecht University, including eight mandatory half-day practicals. Three equally-sized participant groups (low, intermediate and high SRL classification) were assembled based on validated SRL questionnaires, supplemented with questions on LabBuddy expectations, satisfaction and behavior. Questionnaires were provided before (after LabBuddy introduction) and upon completion of the practicals, allowing paired comparison of expectations versus actual LabBuddy experience in relation to perceived SRL classification. ANOVA was used to compare Labbuddy appreciation between SRL classes.

Summary of Results: Students felt more prepared and more encouraged to start the practical sessions when using Labbuddy, especially intermediate and high SRL learners (both p=0.04, d>1 versus low SRL) who felt more stimulated to actively think about what they were doing during the practicals and why (p=0.01 and p=0.02 versus low SRL, respectively). In contrast to low SRL students, intermediate self-regulated learners planned to (p=0.04) and eventually reported to (p=0.01) have actually accessed all material in Labbuddy, even slightly more so than high SRL learners. Participants with low SRL perceived Labbuddy as less user friendly than intermediate or high SRL learners (both p=0.01, d<1). Nevertheless, they thought Labbuddy helped in feeling more confident about the practicals (p=0.016, d=1.79).

Discussion and Conclusions: Particularly intermediate and high SRL level students felt more prepared and encouraged to start practicals after using Labbuddy. Low SRL level students showed less appreciation for Labbuddy and seemed to be discouraged while using the interface.

Take-home Messages: The laboratory education software tool Labbuddy particularly supports students with intermediate and high SRL levels. Future research should focus on how to better support low SRL students in successfully working in such an online experiment environment.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC3 Nurses’ Distance Learning Experience Improves Self-Regulated Learning (8750)

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ABSTRACT:  
Background: Distance learning opportunities for nurses are increasing due to the implementation of continuing professional education and the shift to remote learning imposed by COVID-19. In distance learning, the self-regulation cycle of planning, implementation, and reflection plays an important role. Self-regulation also fosters learner self-efficacy and motivation. In this study, we investigated the self-regulation learning strategies of nurses in a distance learning program and compared the changes from pre- to post-implementation.

Summary of Work: We compared the self-regulated learning strategies of 71 nurses before and after distance learning using the self-regulation strategies scale of Ishikawa and Kogo (2017). The similarity of Ishikawa and Kogos study population to ours enabled comparison of our results to Ishikawa and Kogos results with employed adult graduate students.

Summary of Results: Comparing the results of the two studies before distance learning, the subjects of our study were more likely to choose the factor Asking peers and less likely to choose Developing learning plans and Rewarding oneself. For our study subjects, after distance learning the choice of the factor Developing learning plans increased to the level observed by Ishikawa and Kogo.

Discussion and Conclusions: In our study of nurses self-regulated learning strategies, implementation of distance learning improved learning planning. Planning is important at the start of the learning cycle and influences the subsequent processes of implementation and reflection. For employed nurses, as planning is necessary to balance continuous learning with family and work, it can be inferred that our subjects consciously chose planning as a learning strategy during their experience with distance learning. As distance learning requires more autonomy than face-to-face learning, we suggest an association between an improvement in learning planning and recognition of the importance of learning in a structured, planned process.

Take-home Messages: Through their experience with distance learning, the nurses in our study demonstrated improvements in planning as a self-regulated learning strategy. The results suggested the nurses increased recognition of planning as an important aspect of self-regulation in distance learning. Our study supports the premise that remote learners will benefit from support to develop the self-regulated learning skills that will enable them to continue their professional education and grow as lifelong learners.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC4 A Self-Directed Learning Tool for Orthopedics in Undergraduate Medical Education (9390)

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ABSTRACT:
Background: Global inadequacies in musculoskeletal (MSK) medical care have been traced back to deficiencies in undergraduate medical education due insufficient time and resources for learners to understand the material. Self-directed learning presents as a potential solution to this problem as it has been shown to be an effective and efficient learning method.

Summary of Work: This study used qualitative interpretive description to explore faculty and student perceptions of the current MSK curriculum at a single Canadian institution, and to explore the prospect of a self-directed learning tool as a method to assist students in learning MSK content during their orthopedic clerkship rotation. This was accomplished through purposive sampling of students and orthopedic faculty and using semi-structured interviews for data collection.

Summary of Results: Faculty (n= 9) and students (n= 8) identified similar deficiencies in learner MSK knowledge and curricula gaps, including insufficient anatomy knowledge, a paucity of MSK-centric clinical opportunities, and a lack of integration of MSK concepts through the curriculum. These stakeholders indicated that a self-directed learning tool could be an effective learning modality for increasing student exposure to common MSK conditions by using self-assessment questions, outlining detailed objectives and incorporating clinically relevant anatomy into an online module-based tool. Orthopedic red flags and emergencies, common soft tissue injuries and fractures, and pediatric-specific conditions were identified as being critical content areas to include in the tool.

Discussion and Conclusions: Self-directed learning is a promising modality to assist students in learning MSK content during their orthopedic clerkship rotation. This study provides a learner-informed framework for the development of a novel self-directed learning tool meant to improve medical student MSK knowledge by providing additional exposure to key material. Future work will involve the development of the self-directed learning tool with orthopedic curriculum leaders and subsequently implementing and evaluating its success.

Take-home Messages: Given the widespread prevalence of MSK disease, it is critical that a strong foundation of knowledge in the diagnosis and treatment of MSK diseases should be central to modern medical education. This study strongly supports the notion that a self-directed learning tool could be an effective and accepted method for increasing student exposure to MSK content.
# EPOD-SC: Student Characteristics/Engagement with their Learning

**Abstract:**

Background: Motivation and learning strategies are two important areas to achieve a meaningful learning experience. Motivation is what moves the person in one direction and for a specific purpose, conditioning the ability to learn. Learning strategies are the set of activities, techniques, and means that are planned according to the needs of the students. Objective: To compare motivational profile and learning strategies scores for medical students during a 4-year cohort.

Summary of Work: A cohort study from first to fourth year of medical school was performed. The Motivated Strategies for Learning Questionnaire (MSLQ), which measures motivation intrinsic (IM) and extrinsic (EM) and learning strategies (LS), were applied as follow up, in fourth year. Data from previous cohorts was included. Kolmogórov-Smirnov, Shapiro-Wilks and ANOVA tests were used for statistical analysis, with $p < 0.05$. Informed consent obtained.

Summary of Results: 2020 cohort were 19 students. In the course of 4 years, motivation variable tends to globally decrease, however this was not meaningful for females. Learning strategies decreased consistently and meaningfully across years. Females have a meaningful decrease in learning strategies and males in motivation. The variables intrinsic goal orientation, organization, and critical thinking remained meaningfully stable across years, globally and for gender. Task value was the only variable that increased significantly across cohorts and gender.

Discussion and Conclusions: Learning depends on motivation; however, it is a factor that tends to decline during academic training, both in men and women. Motivation has an impact on males reaching learning objectives. Learning strategies decrease globally as courses advance, which can be associated with the increasing complexity of the learning process. Across cohort’s students increase their interest on performing tasks.

Take-home Messages: It is suggested to encourage strategies that increase student motivation through early direct contact with patients, and improve academic support to help the students develop learning resources management.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC6 Growth in the mindset of medical students toward patients with psychiatric disorders through experiential learning and a reflection process (8251)

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ABSTRACT:
Background: Stigmatizing and discriminatory attitude towards patients with psychiatric disorder can occur automatically. Healthcare providers commonly perceive that dealing with these patients is challenging, and dangerous. These negative attitudes and non-verbal reactions of providers can easily be a model to observant medical students. Consequently, this can be a key barrier for medical students to provide psychoeducation, treatment, and guidance to these patients. To change and shape the students mindset, empathetic understanding and positive attitude toward these patients should be created in a safe environment.

Summary of Work: We initiated and included a group psychoeducation activity for hospitalized psychiatric patients in a psychiatric rotation curriculum. Hospitalized patients were used because they had active symptoms while students worked with them. Students were divided into groups of 5-6 and were assigned to work with ward staff and patients to find the patients common health problems. Then, they had to prepare content, media, and materials to educate a group of 12-15 patients, for an hour. An instructor and ward staff attended and observed the activity so that students felt secure and were helped when an emergency situation occurred. Attitude, empathy, and the learning process were assessed through a self-reflection essay.

Summary of Results: Before the activity, 95% of students felt nervous, insecure, and scared of the patients. 90% of them thought that patients would be against and not follow the activity. During the activity, 85% of them felt more relaxed and perceived that patients were engaged in their activity. After the activity, 95% of them were impressed by the patients and the activity, and felt that they would like to help the patients more. All of the students achieved the goal of planning, organizing, and delivering education, and engaging with the patients.

Discussion and Conclusions: Students expressed more positive attitudes and empathy towards the patients after the activity. Their mindsets had changed and overcame their previous biased attitude. In addition, students achieved the learning process of providing education for patients with psychiatric disorders and mental infirmity.

Take-home Messages: Mindsets toward patients with psychiatric disorders could be shaped by exposure to an opportunity to assist patients in a secure environment, along with a self-reflection process.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC7 Mixed Methods Analysis of the Impact of Medical Student Self-Efficacy and Metacognition on Motivation (8411)

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ABSTRACT:
Background: A learners self-efficacy is a measure of their confidence in the ability to exert control over their motivation, behavior, and social environment.¹ However, the learner also needs to have the requisite knowledge and skills else their beliefs will lead to overestimation of performance and failure to complete those tasks.² Optimal student learning and higher standards of performance is aided by metacognition which will aid the impact of self-efficacy on their motivation.³ The purpose of this study is to analyze the predictive relationship of medical student self-efficacy on motivation as mediated by metacognition.

Summary of Work: In 2019-20, a mixed-methods analysis was used with forty-one medical students who voluntarily completed three self-reported surveys and seven students participated in two focus groups. Students completed the Metacognitive Awareness Inventory (58-items, scale:0=false/1=true), Academic Motivation Scale (28-items, scale:1=doesnt correspond/5=corresponds exactly), and Maslach Burnout Inventory (MBI-SS, 6 items, scale:1=never/7=every day) to measure academic self-efficacy. Pearson correlations and stepwise multivariate linear regression were used to predict motivation scores from self-efficacy and establish mediation via metacognition. IBM® SPSS® 26.0 was used for statistical analysis. Focus groups analyzed by two raters with constant comparative method. The study is IRB approved.

Summary of Results: Statistically significant (p<0.050) correlations were reported between self-efficacy (alpha=0.6) and: (a) intrinsic motivation (r=0.4), (b) metacognition (r=0.5). Intrinsic motivation (alpha=0.9) and metacognition (alpha=0.8) were significantly correlated (r=0.4). Significant linear regression (R²=0.2, p<.037) of intrinsic motivation on self-efficacy and intrinsic motivation on metacognition (R²=0.3, p<.016). The addition of metacognition to the first regression model resulted in the removal of self-efficacy (beta=0.0) (i.e., mediation). Focus group results reported that the reason why students set goals for studying or research they believed in the value of it. Studying required persistence and repetition to understand their material and perform well in class.

Discussion and Conclusions: Medical student intrinsic motivation was impacted by self-efficacy and the use of higher-order metacognitive skills offset lower self-efficacy. Students needed to consistently believe in the value of their studies and worked steadily towards their goals to remain motivated.

Take-home Messages: Medical student intrinsic motivation was impacted by self-efficacy and mediated through metacognition.
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ABSTRACT:  
Background: Empathy is an important communication skill linked to the quality of therapeutic alliances. Different culture or target populations may influence the efficacy of applying these tools among clinical staff or medical students. This study tried to develop and examine the reliability and validity of the Mandarin Empathy Index with Interpersonal Reactivity Index (IRI) among two different subgroups. Whether burnout, stress, sleep loss, or negative affects might affect the level of empathy among registered nurses were also investigated.

Summary of Work: 115 medical students and 62 registered nurses completed the Emotional Index and the Interpersonal Reactivity Index (IRI). Correlations of EI with the IRI were calculated to examine the convergent validity. The subgroup of nurses further completed Professional Fulfillment Index, Perceived Stress Scale, Quality of Life Enjoyment and Satisfaction Questionnaire short form (QLSEQ-SF), and Insomnia Severity Index.

Summary of Results: The Cronbach α of the EI was 0.963 for medical students and 0.960 for nurses. Pearson correlations between the EI and the IRI total scores were -0.057 (p=0.542) among medical students and were 0.487 (p<0.001) among registered nurses. The correlation between the EI and the Empathic Concern on the IRI were -0.418 (p=0.01) among medical students but were 0.550 (p<0.001) among registered nurses. In the nurse subgroup, scores on the EI were significantly and positively correlated with professional fulfillment, perspective taking, and QLESQ-SF. They were negatively correlated with work exhaustions, interpersonal distress, and stress.

Discussion and Conclusions: This is the first study that examined a Mandarin questionnaire measuring the level of empathy among Chinese medical students and healthcare professionals. The level of empathy was found to be correlated differently with IRI among medical students and registered nurses.

Take-home Messages: 1. The newly developed Chinese Empathy Index has good reliability and convergent validities in measuring the level of empathy among registered nurses in Taiwan. 2. Convergent validity when measuring the level of empathy among medical students may not be good enough. 3. The empathy level among clinical registered nurses correlated positively with professional fulfillment, empathetic concern, perspective taking, and quality of life. 4. The empathy level among registered nurses were negatively correlated with work exhaustions, interpersonal distress, and perceived stress.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC9 Perfect is the enemy of good: About a workshop for and by perfectionists (8884)

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ABSTRACT:

Background: Striving for excellence is something that we have been promoting (deliberately or not) within medical schools for years. This starts at the gate by giving students who get higher grades a better chance of admission to the programme. And we keep continuing that with an Honours Programme for excellent students. This pursuit of excellence often attracts perfectionist students, who are also further encouraged to do so during their education. This perfectionism can lead to great results (don't we all want the very best for the patient?), but it also has a downside: perfectionism and burnouts often go together. Burnouts are common among medical students. Time to provide some tools in reducing a bit of the negative aspects of perfectionism.

Summary of Work: Amsterdam UMC, location VUmc has designed a workshop in which master students take a look at their own perfectionism and what lies underneath. The aim is to provide students with tools that will give them more grip on their perfectionism, making use of theory derived from Transactional Analysis. The workshop is part of a leadership training in the medical masters programme. The symposia are designed in a way that students can choose workshops that are relevant to their personal development at that moment.

Summary of Results: Evaluations show a high level of student appreciation for the workshop. Mean score is 4.07 (SD = 0.97) for this workshop is useful on a 5-point Likert scale. Students report take home messages as being good is good enough and pleasant to know you are not alone.

Discussion and Conclusions: The workshop on perfectionism is a good start for awareness of what lies underneath the perfectionism that participants experience and provides tools in countering the negative effects. Follow-up coaching could be offered to actively use the tool during clerkships when needed.

Take-home Messages: Train your students in how to handle their perfectionism. And maybe learn something about your own perfectionism along the way.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC10 Student-led derivation of a suggested undergraduate curriculum for emergency medicine (8904)

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ABSTRACT:
Background: There is variation in the knowledge and experience of Emergency Medicine (EM) of undergraduate medical students due to lack of curriculum standardisation and variability in placements. This project aimed to derive a suggested EM curriculum for fourth and fifth-year medical students undertaking a short Emergency Department (ED) placement.

Summary of Work: Fifty-three students from University of Plymouth BSc (Hons) Urgent and Emergency Care and BSc (Hons) Critical Care programmes collaboratively developed an undergraduate EM curriculum during a one-day modified nominal groups priority setting exercise. During the initial storming phase, fifteen high priority learning objectives for each of six themes were created, using existing postgraduate competency frameworks as a guide. Two assessors (BG,FB) reviewed and merged similar objectives, which were then rated by students using a 7-point Likert scale. The highest-scoring and lowest-scoring third of objectives were included or rejected. The remaining third were re-evaluated for inclusion using a second round of dichotomous voting. Objectives with >75% of favourable votes were included. Using Blooms taxonomy, all outcomes were formulated into a final iteration of a suggested curriculum.

Summary of Results: Following removal of duplicates and merging of similar items, 69 objectives underwent voting. A total of 24 were included, 23 were discarded, and 22 were re-evaluated. Eleven of the 22 re-evaluated objectives were then included in the final iteration. The final iteration yielded 35 learning objectives in total, covering resuscitation (n=7), majors (n=4), minors (n=6), paediatrics (n=6), procedures (n=7) and leadership/non-technical skills (n=5).

Discussion and Conclusions: This project involved intercalated students from 16 host UK medical schools, providing a broad range of perspectives and experience of different course deliveries. Collaboration with UK medical schools and other key stakeholders is planned to further develop this suggested curriculum, assess face validity amongst students, clinicians and educators, and aligns with existing undergraduate academic programme requirements.

Take-home Messages: Students from a range of UK medical schools created a suggested undergraduate EM curriculum applicable to fourth and fifth-year medical students on a short ED placement. The suggested curriculum may help standardise undergraduate EM learning outcomes across UK medical schools. Further validation of the suggested curriculum is planned.
ABSTRACT:

Background: Diverse patient representation in case-based learning that avoids the perpetuation of stereotypes or bias is essential (Krishnan et al., 2019). There is a risk of introducing or reinforcing bias in learners through the language of case studies which could lead to future bias. This research sought to create and implement an inclusive case-based curriculum within medical education.

Summary of Work: Through focus group discussions, faculty development, and evaluation of curriculum, existing case studies are being revised to better represent inclusive language and practice. In the first phase of research, faculty and student focus groups have been conducted to understand their perspectives on inclusive case-based instruction. Both groups were asked to provide feedback on a case study guide with recommendations that will be used for faculty development.

Summary of Results: Data from the focus group meetings point to important findings. First, there is a clear difference between student and faculty recommendations. Students connected their case study instruction to their medical education as a whole and addressed issues they felt were present in other facets of their education. Case study revision was a start, but there is a vocalized need for prior scaffolding for both faculty and students. Students expressed that the revision guide still lacked representation of all types of diversity and addressing issues related specifically to race/ethnicity was not enough. Faculty stressed the importance of Social and Structural Determinants of Health, including examples of epigenetics, and revising specific terms within the writing.

Discussion and Conclusions: Findings point to a disconnect between faculty and students specifically in regards to what they feel needs to be prioritized in case-study instruction and the medical curriculum. While faculty addressed the word choices of the case study revision guide, students looked more at the broader categories they felt were missing. Both groups highlighted the need for more dialogue in written case studies and the importance of weaving these principles throughout the entire curriculum.

Take-home Messages: Case study revision is a necessary step towards representation for a more inclusive and diverse patient/physician population, and a more culturally relevant and responsive pedagogy for medical education.
#EPOD-SC: Student Characteristics/Engagement with their Learning

#EPOD-SC12 Outcomes of a two-week student involvement project for MBBS curriculum review at the Imperial College School of Medicine (7901)

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ABSTRACT:
Background: The MBBS Curriculum Review at Imperial College London has been underway since 2016. This Student Involvement Project (SIP) was a collaborative effort between MBBS faculty and two medical students, and demonstrated that real-time, rich and dialogic feedback from students is of great value to educational reform. We found that students quickly understood the bigger picture, so could offer contextualised and implementable suggestions from the outset.

Summary of Work: The main tasks for the team were generating learning outcomes, setting standards for large group teaching approaches, balancing science and clinical applications in laboratory sessions, and designing new learning events. The team met in person, each day, for two working weeks, and progress was tracked throughout.

Summary of Results: Production of a final, uniform list of topic-intended learning outcomes (TILOs). Some TILOs were refined, and others created from scratch. Most of the final TILOs have been uploaded onto student-facing platforms. Student involvement helped decide a balance between vague, general TILOs to hypergranular ones. Improvements to large group teaching, taking into account students personal reflections. Best practice guidelines for lecture slides were produced, with advice on figures, slide layout, temporal contiguity and signposting, to minimise extraneous load on learners. This was taken forward to lead faculty. Student involvement has also led to the formal proposal of a train the trainer course covering slide-building and lecture delivery. Production of more relevant and engaging laboratory sessions - a framework for maximising the productivity of each session was created. Each session now directly teaches i. scientific principles, ii. research skills, and/or iii. clinical medicine in context. The sessions will be delivered using Lt kuraCloud.

Discussion and Conclusions: Based on feedback from faculty, students made meaningful contributions that have driven the curriculum review forward. Collaboration between students and faculty was beneficial for both parties. The varied perspectives created an efficient team that made significant progress towards the review. Overall, collaboration between curriculum designers and medical students is highly valuable.

Take-home Messages: Students and faculty can work together to design a student centred curriculum. Open communication between faculty and students is paramount in achieving desired outcome.
ABSTRACT:

Background: Warwick Medical School actively engages students on specific equality issues through a series of groups and student-staff partnerships. Here we will describe some of the inclusivity activities taking place across these partnerships, with a focus on activities related to the Athena SWAN equality charter. We aim to open up a dialogue between the speakers and attendees about best practice for tackling equality and diversity concerns in partnership with students.

Summary of Work: Students are currently leading a research project entitled The Experiences of Students Raising Equality and Diversity Concerns at Warwick Medical School. The aim is to formally explore students awareness of, and attitudes towards, this new process, and some of the other support mechanisms that are available with regard to students who are women or members of minority groups. We are also embarking on some work that will evaluate the medical degree course curriculum to ensure that it is sufficiently inclusive and representative of wider society. This is particularly important for the medical school, since a core aspect of our teaching revolves around Case-Based Learning (CBL), which uses hypothetical patient cases as the basis of learning. We will also briefly describe some of the smaller initiatives occurring.

Summary of Results: The results of the empirical project are yet to be collected.

Discussion and Conclusions: Students have quickly organised into a Steering Group that liaises directly with the Athena SWAN staff team to feed back about issues that have caused them concern. They have raised concerns about stereotypical thinking in the curriculum, and opened up discussions and projects surrounding ensuring that the curriculum is sufficiently inclusive by looking carefully at teaching staffs slide content, and at the names, genders and ethnicities used in case-based learning. There are now multiple projects investigating decolonising the curriculum, ensuring LGBT+ representativeness, and ensuring that women and their voices are properly and fairly represented.

Take-home Messages: Students have been highly receptive of the invitation to co-construct curricula and the wider student experience in collaboration with staff members. They have largely self-organised and have been proactive and candid about their concerns, hopes and expectations. Other medical schools can and should engage students in the same way.
#EPOD-SS: Student Stress, Wellbeing & Burnout

#EPOD-SS1 The Importance of Working on Spiritual Issues with Medical Students During Adverse Situations such as the Covid-19 Pandemic (8756)

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ABSTRACT:

Background: COVID-19 pandemic has presented itself as one of the greatest public health challenges in the world. This scenario places the medical student facing a crisis of uncertainties and anxiety. This study sought to investigate how spirituality has influenced the lives of medical students during this period.

Summary of Work: After approval by the ethics committee, an online form was sent to Faceres Medical School students, containing questions about spirituality, religiosity, empathy and coping strategies used by each medical student during the period of social distancing from the Covid-19 pandemic.

Summary of Results: 77 medical students answered the questionnaire, and 83.6% were women. 72.7% declared to be spiritual and 89.6% believe that spirituality influences physical and mental health. 94.8% of the students said they were more perceptive to spiritual issues during this period. Among them, 67.5% considered spiritual or religious care essential to cope with adverse feelings. Although 48.05% said that they improved their spirituality perception during the pandemic, 62.3% did not perform any spiritual practices during this period. On the other hand, although 74% of students claimed to have become more empathetic during the period, only 28.5% claimed to perform any philanthropic practices. In addition, 68.8% of the individuals stated that family relationship changed, mostly being closer to their relatives, and 60% changed the coping strategies to deal with stress. 45.4% of the students said they were more anxious with this moment.

Discussion and Conclusions: There is a significant percentage of answers that contradict each other. The students consider themselves spiritualized and moved by the current situation, affirming that spirituality has influenced the balance during the pandemic, in addition to claiming the predominance of empathy during the period. However, at the same time, they do not perform actions that would possibly justify these statements, such as philanthropies, meditations, cults, among others.

Take-home Messages: There is a great difficulty faced by students to deal with their own spiritual issues, and this also can interfere in the patient-doctor relationship. Therefore, it is important to stimulate and improve a clinical pastoral education training into clinical medical practice, especially in adverse periods.
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ABSTRACT:
Background: Cardiopulmonary resuscitation is a crucial skillset which can be taught using high-fidelity simulation. Over one semester, we investigated the possible influence of context sensitive stress on the learning of CPR teaching sessions in a view to assess the possible effects of stress and changes in cognitive load on student performance. The study was approved by ethics committee.

Summary of Work: 107 students performed the baseline and second CPR simulations before and after their teaching sessions in randomised groups respectively. Baseline and second simulations were recorded and graded. The control group received traditional CPR training, the intervention group was taught with various stress factors. Students then repeated the simulation at the end of the semester in an exam. All simulations were graded using the standard checklist. Cognitive load (93 participants) and perceived stress (83 participants) were quantified using validated questionnaires and scoring scales respectively. Protocol was considered violated if students did not participate in all simulations (19 Participants). We used a two-way-RM ANOVA for analysis of recordings, Mann-Whitney U test for final exam and unpaired Students t-test to quantify group differences and questionnaire scores. Demographics of the groups were well matched.

Summary of Results: In the simulations we found a significant improvement in performance F(1,32) =185.743, p < .001, but no effect of stress on performance F(1) =3.946, p = .056. Final simulation results during exam for intervention group (MRank=31,21), control group (MRank=33,87), p=.549. showed no differences between groups either. Questionnaires revealed no differences between the groups in stress scores (Baseline stress: t(72,70.956)=1.312, p=.194 ; stress before: t(60,59.830)=.325, p=.746; stress after: t(58,56.729)=1.398, p=.167) However cognitive load differences between the two groups were significant reflecting an increased cognitive load in the intervention group (M=40.23 SD=7.274) compared to control (M=33.17 SD=5.393), t(42)=3.503, p=0.001, d=6.578).

Discussion and Conclusions: Stress during CPR increases cognitive load but does not significantly influence learners performance in CPR during a high-fidelity simulation training as evidenced by unchanged p values throughout the tests. As medical professionals often face stressful environments, the study shows stress may not negatively affect the learning process.

Take-home Messages: Stress and increased cognitive load may not have any negative impacts on learning.
ABSTRACT:

Background: Mistreatment of medical students by faculty, residents, and hospital staff often goes unreported, as students commonly feel these incidents are not important enough to report. This may be a result of the longstanding tradition of resilience in medicine and the frequent acceptance of mistreatment as part of medical training. The extent to which students are mistreated by patients is not well-known, as this data is not currently collected. This study examines medical students' experiences with and attitudes regarding the reporting of mistreatment by patients.

Summary of Work: Our survey investigating medical student mistreatment by patients, excluding behavior attributed to neuropsychiatric symptoms, was administered to all students enrolled at Wayne State University School of Medicine (WSUSOM) in April 2020, with a completion rate of 50.7% (n=582). It inquired about students' habits and attitudes regarding the reporting of these incidents and their satisfaction with the outcome if reported.

Summary of Results: Of students who experienced mistreatment by patients, 94.8% did not report the incident. The most commonly cited reasons for not reporting included not feeling the incident was important enough (36.1%), not thinking anything would be done about it (21.6%), and not knowing what to do (12.7%). 86.5% of respondents were aware of WSUSOM policies regarding the mistreatment of medical students, but only 61.7% said they felt comfortable with their knowledge of these policies.

Discussion and Conclusions: The low frequency of reporting and perception that incidents of mistreatment are not important enough to report create a knowledge gap around this issue. There is a disconnect between students' awareness of mistreatment reporting policies and their understanding of how to apply them. There is also a discrepancy in students' perception of having appropriate tools to handle mistreatment by patients in comparison to mistreatment by other individuals involved in their medical education.

Take-home Messages: This project identifies opportunities to improve understanding of medical student mistreatment by patients. Future steps should aim to expand policy awareness, improve student support for those reporting harassment, and shift the widespread perception that harassment is to be accepted. This lays the groundwork for increasing student satisfaction with the outcome of reporting these incidents and improving medical students' experiences in clinical settings.
#EPOD-SS: Student Stress, Wellbeing & Burnout

#EPOD-SS4 Comparing the Prevalence of Medical Student Mistreatment by Patients at School-Affiliated Sites (8354)

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ABSTRACT:
Background: Mistreatment of medical students by residents, faculty, and others involved in clinical education is a broadly researched occurrence. It has been shown to negatively impact student well-being, burnout, and academic success. However, patients remain an overlooked source of student mistreatment. With advances in pre-clinical and clinical curricula, students are required to work with patients earlier in their medical education and at sites outside of the traditional hospital setting.

Summary of Work: An anonymous and optional survey investigating medical student mistreatment by patients, excluding behavior attributed to neuropsychiatric symptoms, was administered to all students enrolled at Wayne State University School of Medicine (WSUSOM), a large urban medical school in Detroit, Michigan, United States. The survey was modeled from the Association of American Medical Colleges Graduation Questionnaire and assessed the WSUSOM-affiliated sites at which these student-reported experiences of mistreatment by patients occurred. Secondary analysis of this survey was done for the purpose of this study, with the goal of examining the most prevalent WSUSOM-affiliated sites of mistreatment by class-year.

Summary of Results: Among all survey respondents (n=582), 43% reported at least one experience of mistreatment by patients. Third and fourth-year medical students reported hospital-based clinical rotations as the most prevalent setting of these experiences (70.3%, 76.4%). The most commonly reported site for second-year students was Continuity Clinic (38.2%), a required year-long ambulatory clinic assignment. Student-run or volunteer clinics were the most prevalent sites of mistreatment by patients for first-year students (41.5%).

Discussion and Conclusions: Hospital-based clerkships were the most common setting of mistreatment by patients for third and fourth-year students, reflecting the traditional clinical curriculum focus of patient-centered learning. However, pre-clinical students frequently encountered mistreatment by patients as well, and these experiences occurred at many WSUSOM-affiliated sites beyond the hospital setting. This suggests that this may be a pervasive issue and one that begins before students are adequately prepared to navigate complicated patient interactions.

Take-home Messages: Student-reported experiences of mistreatment by patients must be acknowledged and further researched by institutions, and sites at which they occur must be documented. This information could guide the development of policies, student and faculty training that aims to protect this vulnerable population and improve medical education environments.
ABSTRACT:

Background: Providing medical care to elderly patients is often seen as unattractive by medical students. Unfortunately, previous research could only partly explain this negative attitude. Terror Management Theory states that people have a negative attitude to elderly persons, because they remind us of our own mortality. Our hypothesis is that death anxiety, ageing anxiety and ageism (negative attitude to elderly people) are related and lead to a negative attitude to medical care for elderly patients.

Summary of Work: A systematic review was conducted searching PubMed, Ebsco/PsycInfo, Ebsco/ERIC and Embase from inception to September 2019. Articles about medical students attitude to medical care for elderly patients related to death anxiety, ageing anxiety and/or attitude to elderly people were found eligible.

Summary of Results: The search yielded 3690 different studies; 10 studies were found eligible for inclusion. Seven studies reported that a positive attitude to elderly people was related to a more positive attitude to medical care for elderly patients in medical students. One study found that students attitude to medical care for elderly patients could only be explained by their attitude to elderly people for a small proportion. Two studies found that students with higher death anxiety had a more negative attitude to medical care for elderly patients. One study reported that students with higher fear of death and ageing had a more positive attitude to medical care for elderly patients.

Discussion and Conclusions: There was insufficient evidence to confirm our hypothesis. Only three studies described the relationship between death anxiety, ageing anxiety and attitude to medical care for elderly patients. No studies showed the relationship between death anxiety, ageing anxiety and attitude to elderly people in medical students.

Take-home Messages: Future research should further examine the relationship between medical students death anxiety, ageing anxiety, ageism and their attitude to medical care for elderly patients. Subsequently, results could be used for developing an educational intervention aimed at improving medical students preparation for providing medical care to elderly patients.
#EPOD-SS: Student Stress, Wellbeing & Burnout

#EPOD-SS6 The Importance of Mentorship during Medical Education (9108)

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ABSTRACT:
Background: Burnout in medicine begins in medical school. One of the few intervenable factors that has been shown to be protective against student burnout is perceived faculty support, or mentorship. We sought to determine 1) whether mentorship satisfaction is associated with burnout in medical students as measured by the validated Maslach Burnout Inventory (MBI), and 2) how medical schools may most effectively facilitate mentor-mentee relationships.

Summary of Work: This survey was distributed to 5500 medical students across 9 US medical schools. Responses were collected from 12/27/2020 - 1/17/2020. Questions covered stage in medical school, satisfaction with, and means of, mentorship facilitation, and assessment of burnout via the 2-item MBI. Descriptive statistics were used to depict responses.

Summary of Results: Of 5500 invited medical students, 1182 (21.5%) completed the survey. Forty-six percent (542/1182) met criteria for burnout, with 55% (144/264) of clinical year students meeting criteria (p = 0.004). Forty-five percent (30/667) of pre-clinical students, 37% (98/264) of clinical year students, and 48% (89/186) of students in advanced rotations reported being either somewhat or extremely satisfied with their level of mentorship (p=0.041). Burnout was associated with mentorship satisfaction (p<.0001). Eighty-one percent (955/1182) of students believe that medical schools should formally assign mentors to students, 88% (1039/1182) believe that schools should hold optional informal events (e.g., meals, mixers, exercise classes, etc.) across levels of training where relationships may spontaneously form, and 92% (1084/1182) felt that schools should provide contact information for a list of mentors in their desired fields with whom students may communicate.

Discussion and Conclusions: Medical student burnout is associated with mentorship satisfaction (p = 0.000021), with students during their clinical years reporting greatest levels of burnout and least satisfaction with mentorship. The majority of students believe that medical schools should facilitate mentorship connections through a variety of means.

Take-home Messages: Medical student burnout is associated with mentorship satisfaction, with students during their clinical years reporting greatest levels of burnout and least satisfaction with mentorship. The majority of students believe that medical schools should facilitate mentorship connections, with contact lists of mentors being the most cited form of facilitation.
#EPOD-SS: Student Stress, Wellbeing & Burnout

#EPOD-SS7 The association between Burnout and Depression among Medical Students (8505)

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ABSTRACT:
Background: Burnout is a state of exhaustion boredom associated with work and learning environment. People who cannot handle this condition will have accumulated stress that may develop into depression. Many medical students have depressive disorder due to stress and pressure from studying difficulty and high workloads. We aim to study the prevalence of burnout in medical students, the relationship between Burnout and Depression, and burnout management among medical students.

Summary of Work: A cross-sectional study was conducted for clinical year medical students studying at Chiang Rai Prachanukroh Hospital in 2019. Data were collected by online questionnaires by using the Maslach Burnout Inventory (MBI) comprised of 9-item Emotional Exhaustion scale, 5-item Depersonalization (DP) scales, 8-item Personal Accomplishment (PA) scale, 5-item Cynicism scale, and 6-item Professional Efficacy scale. The Depression was evaluated by PHQ9 Questionnaire (Department of Mental Health, Ministry of Public Health Thailand). Data were analyzed using T-test, Exact probability and Spearmans correlation.

Summary of Results: Forty-four Medical students responded, including medical students year 4, 5 and 6 35.7%, 51.3% and 13.0% respectively. High-level of Emotional Exhaustion 52.3% and high-level of Personal Accomplishment 59.1% was detected in 4th-year medical students. High-level of Depersonalization 47.7% was seen in 6th-year medical students. The relationship between Emotional Exhaustion and Depression has a strong positive correlation, which was statistically significant, rs = 0.53 (p < 0.001). Exercise and Communicate with close people have statistically significant to reduce burnout issue. Medical school infrastructure support was requested in 54.5% of medical students, the top three are Media and entertainment room, Gym and Recreation room 25.0%, 15.9%, and 13.7% respectively.

Discussion and Conclusions: Burnout and depression were commonly seen in medical students. Most medical students have Burnout condition from school and work. The Emotional Exhaustion was associated with depression. Good support systems might help them to deal with burnout condition properly.

Take-home Messages: Early identification of burnout and intervention is crucial. The good supporting system, include a recreation centre, is essential in all medical school.
ABSTRACT:
Background: Covid-19 has affected our teaching. Students in their clinical years have experienced a shift to on the job training as they are called upon to help in the clinical setting. They do at least have a network of support and friends that were made over the preceding 3 years. We were interested to explore how the current first year students would cope with the social isolation and lack of networking that this pandemic is imposing.
Summary of Work: A pilot questionnaire was sent to approximately 40 first year UCL medical students. It exposed a need for further research into the detrimental effects of social isolation. Following ethical approval, the questionnaire was sent to the whole year group. Students were then invited to attend a focus groups or a semi-structured interviews to discuss the findings further. Thematic analysis is being used to expose the pertinent areas of concern (and lack of) expressed by the students.
Summary of Results: Analysis of the data is ongoing. So far we can see that although some students are coping well with virtual learning, others are experiencing higher levels of anxiety, low mood and feelings of being socially isolated. 50% of students reported feelings of loneliness. 41% of students reported feeling isolated from others. Although our pilot sample size here is small (22 respondents), these initial results show that a small proportion of students have experienced feelings of loneliness, isolation and a lack of companionship and connectedness to their peers.
Discussion and Conclusions: Themes thus far show a significant number of first year medical students are feeling low, demotivated and socially isolated due to the restrictions imposed by the pandemic. As a medical school, we must use this information to better inform our practice in terms of supporting these (and other) students who are being adversely affected by Covid-19, now and going forward.
Take-home Messages: It is concerning that our current students are feeling socially isolated and demotivated during a time which traditionally would have marked an exciting milestone in their academic journey. With a start such as this, we are also concerned about how this will carry forward in their training.
#EPOD-SS: Student Stress, Wellbeing & Burnout

#EPOD-SS9 Evolution of the Student Mentoring Program Providing a care network for medical students during trying times (9142)

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ABSTRACT:
Background: In response to a collective request from students who felt that they would benefit from a structured Student Mentoring Program (SMP) to balance their academic load, the medical school of St. Lukes Medical Center, through its Office of Student Affairs (OSA), designed and implemented a pilot mentoring program for first and second year students in 2018. Scheduled sessions deemed as protective time were overseen by the OSA.
Summary of Work: During the COVID-19 pandemic, the SMP was migrated to an online format and was delivered by pre-agreed online applications within each mentoring group (e.g. Messenger, Viber). Mentors were able to maintain relationships and were encouraged to engage with a flexible timetable to address the looming feeling of isolation and disconnect. An online Mentors Community Space (MCS) was also developed and uploaded in the Learning Management System as a hub for relevant mentoring tools. A special video playlist for self-care for mentors was likewise put into place in the MCS. The mentor Viber community provides easy access for mentoring updates, sharing of experiences and a safe space to recalibrate and recharge.
Summary of Results: Majority of the students preferred zoom and google meet, augmented by a variety of group chats such as Messenger and Viber to facilitate communication. Discussions mainly revolved around challenges in adjusting to pure online learning and workload, work-life balance and the uncertainties affecting their training.
Discussion and Conclusions: Despite the rapid need to migrate to a virtual platform, the use of online apps appears to offer an effective strategy to maintain and sustain mentoring relationships. We plan to evaluate the effectiveness of the online format for SMP and to gauge its value compared to face to face mentoring by June 2021.
Take-home Messages: The SMP can be considered a safe and supportive space for students and faculty to engage in. Virtual meetings and social application can provide potential alternatives to face-to-face mentoring, considering its accessibility and functionality. Additional online tools for self-expression, creativity and self-care, as well as virtual opportunities to enhance shared experiences and group dynamics, can be explored.
ABSTRACT:
Background: Medical students have high susceptibility to suicidal ideation and depressive symptoms. This trend continues after graduation, with doctors having higher rates of suicide and psychiatric conditions than the general population. With this in mind, it can be judged that medical students need to be provided with better mental health support.

Summary of Work: A group of medical students implemented a peer support and learning model to improve mental health support and education within their medical school. The model follows a cyclical structure, cycles lasting one academic year. During phase one, the focus is on peer support for mental health through introductory workshops, networking opportunities, and sharing resources. Regular feedback from these events is incorporated into an 8-week peer learning wellbeing course in phase two. Upon completing this wellbeing course, student attendees are invited to undergo training to help run the peer learning and support group the following year, when the cycle repeats. Presently, two cycles have occurred.

Summary of Results: Impact was assessed across three levels: mental health support, community, and education. A thematic analysis, undertaken from feedback surveys, identified the common themes of accessible, supportive and informative. The two year attendance average was 47 students per session (approximately 1 in 25 of the student body). The most recent survey analysis determined students understanding of the mental health topic taught rose, on average, 44.1% following a peer learning session. Additionally, 87.7% of respondents believed the session supported their mental health, and 93.9% recommend the peer support group. The majority of students maintained that the group improved their confidence and sense of community belonging.

Discussion and Conclusions: The model successfully addressed key gaps in support for mental health, namely lack of understanding and fear of speaking out about mental health. Additionally, it provided students with opportunities to learn about mental health with ones peers. Thus, such peer support models, when present in addition to professional support, could provide a valuable adjunct to improve the mental health of students.

Take-home Messages: The authors propose the wider adoption of peer learning and support models within medical schools as a means to improve mental health support provided to medical students.
#EPOD-SIMC: Simulation during COVID-19

#EPOD-SIMC1 Introducing population health to aspiring healthcare professionals through live, simulated clinical cases in the virtual environment (8742)

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ABSTRACT:

Background: Outcomes for Graduates recommends that graduates should be confident in applying principles of population health to clinical practice. Literature suggests that population health themes are best illustrated in the context of every-day clinical practice. Applicants to medical school are expected to have engaged in wider reading around public health concepts. However, the COVID-19 pandemic has restricted access to clinical work experience for aspiring medical students, limiting opportunities for exposure to population health in clinical context.

Summary of Work: We designed a live virtual work experience session, themed around population health. 4700 school students observed seven simulated primary care consultations, each demonstrating an example of health promotion/protection. Principles discussed included primary and secondary prevention, vaccination programmes and health inequalities. The programme aimed to expose aspiring students to key principles through in-context examples, consolidated through facilitated breakout sessions between cases, discussing their relevance to the application process.

Summary of Results: 3499 participating students responded to an anonymous pre/post session questionnaire with a 5-point Likert Scale. Mean rating of understanding of health promotion increased from 3.15 to 3.89, p < 0.001. Perceived overall confidence in tackling questions on the subject at interview increased by 32.77%, p < 0.001.

Discussion and Conclusions: These findings suggest that a simulated work experience in the virtual environment can provide useful insights and increase understanding of population health in aspiring medical students. There is increasing acknowledgement of the challenge of engaging learners in public health education at undergraduate level, with medical students concentrating their efforts into clinical practice. Literature calls for exploration of an alternative stage in education to introduce principles of population health. Our study demonstrates that school aged students engaged and gained understanding in these principles following our programme.

Take-home Messages: We demonstrate that there is scope to develop pre-medical school education in population health and that doing so improves perceived confidence in tackling such content during the application process. Furthermore, this model of exploring simulated cases through a public health lens has the potential for translation into undergraduate training. Case-based application of public health principles could serve to increase engagement with this discipline for undergraduates. Further research is necessary to explore this translation into both curriculums.
#EPOD-SIMC: Simulation during COVID-19

#EPOD-SIMC2 An adapted Hour On-Call simulation course at The Royal London Hospital - can in-centre simulation help prepare medical students to join the workforce during a pandemic? (9284)

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ABSTRACT:
Background: The role of Foundation Doctors includes out of hours work, which has its own unique challenges, and is a common source of anxiety amongst new doctors. A novel approach to preparing students in essential skills such as prioritisation and organisation, has been pager simulations. Due to the COVID-19 pandemic we were forced to alter the structure of the existing Hour On-Call in-situ simulation programme run for Final Year Medical Students. It was subsequently run within the Simulation Centre, a non-clinical area.

Summary of Work: Final year medical students were given an orientation and a live pager. Education Academy staff simulated medical staff, and gave handovers; bleeped students; and provided information and guidance. Scenarios were designed to simulate an On-Call shift, with varying degrees of complexity and need for senior escalation. Scenarios were altered to reflect clinical experiences more likely to be encountered during the COVID-19 pandemic, such as VTE prophylaxis in COVID-19 patients. There was a semi-structured debrief where students were offered feedback.

Summary of Results: From September to December 2020, we collected feedback from 24 students via a questionnaire. This comprised of 8 questions assessing whether students had met the learning objectives from this adapted simulation. 62.5% respondents said they now feel more prepared for their on-call shifts. 71% felt more confident with prioritisation. 75% felt more confident with prescribing. Qualitative data was also collected on their experience.

Discussion and Conclusions: Students found our Hour On-Call in-centre simulation course a useful learning experience, and felt more prepared for their transition into the Foundation Programme during the COVID-19 pandemic. We were concerned that an element of realism and difficulty navigating the hospital may be lost in this adaptation, however this doesn’t seem to have affected the benefit to the students. Further research into how we can introduce the advantages of in-situ simulation into in-centre simulation may be useful, as it has become clear that COVID-related infection control measures will not be disappearing overnight. With the COVID-19 pandemic affecting medical education, an in-centre simulation, as an alternative to in-situ simulation, still provides great educational outcomes.

Take-home Messages: High fidelity pager simulation can be delivered successfully in non-clinical areas during COVID-19.
ABSTRACT:
Background: Medical school provides a strong clinical foundation for junior doctors. However, the transition from a medical student continues to pose an exponential challenge. A significant proportion of students therefore feel underprepared for their first on-call shift. Simulation training aims to provide a safe environment to practice both clinical and non-clinical skills, such as communication and appropriate escalation. However, simulation training in medical school remains limited in exposing students to the finer nuances and administrative tasks that are pertinent to the job. This was particularly evident in the COVID-19 pandemic, where final year medical students commenced their training roles prior to graduating. This was part of the pandemic contingency plan to optimise staffing levels. We designed an on-call simulation integrating a variety of scenarios collated from personal experiences as junior doctors. We aimed this towards improving confidence and standardising the competency of trainees on handling common ward tasks and responsibilities.

Summary of Work: Participants were given a bleep and contacted for telephone advice, venous cannulation requests, prescribing and review of an acutely unwell patient. Participants were expected to request further information to triage and prioritise tasks. A group debrief session was conducted upon completion. Feedback was collected, assessing perceived confidence in task management and the usefulness of the session.

Summary of Results: Confidence in managing on-call tasks significantly improved, as documented on a 10-point scale (mean pre-test score = 4.13; mean post-test score = 6.5; n=8; p=<0.001). 100% of trainees found the bleep simulation useful. Participants felt the simulation highlighted areas for improvement, and the diversity of tasks allowed them to practice recognition and prioritisation of urgent tasks. As a consequence, participants reported feeling better prepared for their first on-call shift and more confident in their management of a deteriorating patient.

Discussion and Conclusions: Organisational and non-clinical skills are important factors in minimising human factors impacting patient care. By practicing proficiencies in communication, prioritisation, appropriate escalation, documentation, and delegation of tasks, this could further optimise current standards of healthcare provision.

Take-home Messages: Bleep simulation enhanced the confidence of interim F1s in their prioritisation and management of on-call ward tasks in the midst of a pandemic.
#EPOD-SIMC: Simulation during COVID-19

#EPOD-SIMC4 The use of simulation to prepare and improve responses to contact transmission of COVID-19 infection (9250)

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ABSTRACT:
Background: Human error, such as omission or commission, is hard to avoid in infection control. Despite having been extremely cautious and successfully curbing COVID-19 for a year, frontline caregivers anxiety soars when the first nosocomial infection case finally happened in a northern Taiwan hospital this January also.

Summary of Work: The simulation team designed a simple scenario of intubation for a pilot training in simulation center. ICU teams are chosen to be pilot participants due to their high pressure from risk of potential exposure to coronavirus. Each team has 5 members, which are consisted of residents, RT, NP and nurses. Learning objectives and evaluation emphasized SOPs of PPE donning/doffing and intubation, and also TRM principles. A high-fidelity patient simulator was used to communicate with caregivers and show vital sign changes, UV fluorescent powder was smeared over the simulator to create spread of coronavirus.

Summary of Results: A total of 20 participants divided to 4 groups joined the pilot training. UV fluorescent tracers result showed cross-contamination occurred despite participants being protected by PPE. Further reviews in debriefing identified unexpected safety risks, such as leaking caused by unfitted mask, visibility hindered by fogged eyewear, difficulty in identifying members in PPE, roles and responsibilities should be more clearly redefined in a critical case. Good communication and strong mutual support were found in every team.

Discussion and Conclusions: A post-simulation survey of participant feedback shows shock during scenario, but come after shock are trust in working partners, increased self-confidence to upcoming challenge, and eagerness for more preparedness training. Pilot simulation is considered a success in clinical caregivers COVID-19.

Take-home Messages: The power of simple simulation induces a profound impact on safety culture, awareness of operative nuances and mutual support as a team, it also is proved to be a useful tool to help clinical caregivers to release anxiety and pressure when uncertainties in dealing COVID-19 are identified and handled through simulation training.
#EPOD-SIMC: Simulation during COVID-19

#EPOD-SIMC Using media and simulation to enhance medical education and training in the wake of the COVID-19 pandemic (8731)

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ABSTRACT:

Background: Technology-enhanced learning, media, and smartphones are rapidly transforming medical education. The COVID-19 pandemic revealed the outdated infrastructure of medical education and cancelled in-person educational activities. It also drove the use of media to deliver education remotely. Simulation via Instant Messaging - Birmingham Advance (SIMBA) is an international training programme which employs several media to facilitate virtual simulation of real clinical cases to improve clinician knowledge and confidence managing patients.

Summary of Work: A focused qualitative review was conducted to evaluate the use of media in medical education. Findings were integrated into the SIMBA model to create the virtual learning environment and enhance the learning experience of trainee participants and medical student moderators.

Summary of Results: Media selection should depend on learning content, structure, and skills. Cost-effectiveness and target audience are additional factors. Text aids analysis, critical thinking and evaluation. Distributing text before sessions follows the flipped classroom model. Infographics aid abstraction and flowcharts summarise complex information. Podcasts are increasingly popular in medical education, owing to their appeal and satisfaction. Learners prefer and engage more with podcasts than textbooks and journals. Social media facilitates informal learning environments, knowledge sharing, and real-time dialogues. COVID-19 also popularised videoconferencing platforms including Zoom. Graphic medicine uses comics to provide interest and an enjoyable learning experience.

Discussion and Conclusions: Different media possess unique characteristics and convey different information. Transcripts of simulated cases were created for SIMBA moderators. Figures presented patient management including investigation results available upon request. Audio recordings will be considered for future sessions. WhatsApp facilitated interactive simulation between participants and moderators. Its ubiquity attracts international participation in SIMBA. Zoom was used for the case-based discussion following simulation. Sessions were converted into open-access YouTube videos to further consolidate and share learning. Educators should choose media combinations which reflect the learning content and objectives. Future research into innovative applications of media will enhance learning for current and future clinicians.

Take-home Messages: COVID-19 rapidly expanded the use of technology and media in medical education, as cost-effective and ubiquitous teaching tools. Different media offer different characteristics and uses. SIMBA uses various media to provide international virtual simulation-based training.
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ABSTRACT:
Background: Due to Covid-19, face masks are now a part of our everyday life. An example is the role training with our simulation patients (SPs) at the Berne College of Nursing, Switzerland. Although masks provide protection, it covers the majority of the face and hides facial expressions. In Western culture, the mouth is important when interpreting facial expressions. Emotions like happiness or surprise are often recognized only through movements in the mouth. Masks make it more difficult to interpret emotions and restrict verbal communication. What impact does this have on the training with SPs? What should trainers consider in order to conduct the training as efficient and pleasant as possible?

Summary of Work: To answer these questions, we conducted eight semi-structured individual interviews with SPs. To analyse the interviews, the Thematic Analysis was used.

Summary of Results: All SP stated that they struggled not seeing the mouth as a source of information and orientation. This forced them to rely on other parts of the body for non-verbal communication. All participants listed eyes as another important source of information, followed by four out of eight participants suggesting that hand gestures are also important. Six out of eight participants said that the mask stressed the importance of speaking clearly and loudly. Additionally, all participants discussed social distancing as a result of masks. Some SPs perceive this distance as negative. However, three SPs formulate positive aspects of this distance, like the sense of security against the disease. According to the participants, the cooperation with the SP trainers is not disrupted. Especially experienced SP are not deterred by the mask. New SPs state that it takes longer with the mask to know each other.

Discussion and Conclusions: As the SPs struggled not seeing the mouth as a source of information and orientation, they diverted their attention more on other non-verbal signs. In addition it is important that trainers speak clearly and loudly.

Take-home Messages: Good relationship between SP trainers and SPs is even more important in a time of crisis. However, for new SPs, due to the face mask, adequate time should be provided for SPs and trainers to acquaint themselves with each other.
ABSTRACT:

**Background:** Due to the COVID-19 pandemic, redeployment of foundation doctors to medical wards resulted in most of their protected teaching hours being postponed. This had significant implications for their Annual Review of Competency Progression (ARCP). We report a novel method for providing protected teaching hours by facilitating simulation sessions which incorporated Clinical Teaching Fellow Staff and Virtual Reality (VR) technology.

**Summary of Work:** 86 foundation doctors within our district general hospital were provided with five sessions of VR Simulation per week, with flexible timings in which they were able to book at their own convenience. This was facilitated by the use of online booking forms. A CTF was timetabled to facilitate each session. After the scenario, the CTF would debrief with the doctor and end with a feedback form being provided. This programme ran for three months.

**Summary of Results:** The vast majority of the feedback was positive, with participants supporting the use of VR in simulation. Results showed that they felt more confident and comfortable in their management of unwell patients. They also responded positively when asked about their experience in booking the VR sessions, especially the ease and simplicity with the online form and the ability to book sessions at a time most suited to them.

**Discussion and Conclusions:** VR simulation offered an opportunity for self-directed learning along with gaining additional teaching hours, aiding the doctors in achieving their learning goals. Debriefing and giving the doctors an opportunity to reflect on how they performed in the VR session has been beneficial in building their clinical knowledge and non-technical skills, while allowing for COVID restrictions. Limitations of using VR include the fact that it requires facilitators familiar with VR technology. More importantly, VR cannot be a replacement for performing physical examinations on real patients.

**Take-home Messages:** VR simulation sessions could be incorporated in the foundation year curriculum as part of their mandatory teaching hours, in conjunction with more conventional methods of teaching to provide a multi-medium educational environment.
#EPOD-SIMC: Simulation during COVID-19

#EPOD-SIMC8 Simulated ward rounds: Providing medical students with authentic clinical learning in a pandemic (9405)

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ABSTRACT:
Background: The final year of medical school is spent preparing for practice as a junior doctor whilst simultaneously sitting finals examinations. Student learning is usually through a combination of clinical exposure, didactic or group teaching and self-study. In order to maintain patient safety during the COVID-19 pandemic, student clinical exposure has been dramatically reduced. Consequently, opportunities for students to develop vital clinical reasoning skills have been lost. These rounds were created to help mitigate this loss.

Summary of Work: Groups of four students were introduced to four simulated patients (teaching faculty) over a two-hour session. They were tasked with reviewing patient notes and investigations, discussing the patients concerns and then finally creating a management plan. Each case had a unique learning outcome, ranging from communicating with a stubborn patient to initiating an end-of-life care pathway.

Summary of Results: Seventeen students provided feedback through a 5-point Likert scale and blank space answers. - 94% rated the rounds 5/5 for relevance, structure and variety. - 88% scored the session 5/5 for clarity, with the remaining 12% scoring 4/5. - 94% gave the session 5/5 overall. Positive comments were clustered into three main themes: clinical realism, management planning and tutor feedback.

Discussion and Conclusions: The value of clinical experience is not easy to quantify. Many of the benefits revolve around discovering the hidden medical curriculum rather than achieving concrete outcomes. Our sessions combined traditional technical teaching with authentic learning. Students found the sessions universally useful as a substitute for clinical exposure. Many also noted the benefits of practicing managing a patient independently, a skill of which they have little experience. The realism and authenticity of the session was especially valuable given the disruption the students have been experiencing on their placements.

Take-home Messages: Simulated ward rounds can make successful substitutes for ward based learning, which has been particularly hard hit through the pandemic. There is great scope for non-acute simulations to be used as a solution to some of the current COVID-19 restrictions. Given medical school admissions continue to rise, simulated rounds may also help to mitigate the growing issue of overcrowded clinical placements.
#EPOD-SIM: Simulation

#EPOD-SIM1 Students’ views on simulations with actors and reflective debriefing discussions in learning breaking bad news (8800)

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ABSTRACT:
Background: At the University of Helsinki, fourth year medical students practice challenging encounters in simulations with professional actors as simulated patients (SPs) and debriefing discussions. Simulations are organized in small groups and facilitated by a clinical teacher. Our research questions were: (1) How did students assess achieving the learning outcomes of the Breaking Bad News (BBN) course? (2) How did students experience learning BBN through simulations?

Summary of Work: We collected an online survey data in 2014 and 2015 from the fourth year students at the end of the BBN course. A total of 208 (92%) of 227 students participated in the study. Students were asked to rate on a five-point Likert-scale how they achieved the learning outcomes of the course, to answer open-ended questions about their experiences on learning BBN in simulations and to give informed consent. Numerical responses were analyzed with descriptive statistics. Open-ended responses were examined by thematic analysis.

Summary of Results: Students rated highest their ability to listen to patients concerns (M=4.18, SD=0.66), to summarise the consultation (M=4.13, SD=0.67), and to seek a shared view about treatment with the patient (M=4.1, SD=0.62). They scored lowest their ability to discuss medical errors with the patient (M=3.45, SD=0.73). In open-ended responses, they expressed having learned about patients, emotions and medical errors. The most common themes in open-ended responses were practicing in a safe environment, receiving feedback, and gaining new perspectives. Students also expressed critical insights into simulations, such as lack of time, authenticity and their limited clinical expertise.

Discussion and Conclusions: The goal of communication skills studies was to prepare medical students to encounter patients with their health concerns. After the BBN course, students rated their communication skills high (M 3.54-4.18). They found learning in simulations effective when the learning climate was safe and debriefing discussions enabled reflection and constructive feed-forward. To improve these studies, we need to calibrate the cases to match students study level, improve authenticity and train students, teachers and SPs provide constructive feedback.

Take-home Messages: Simulations provided a useful method for learning BBNs when: • The phase of the studies was optimal and cases were suitably challenging. • Debriefing discussions were psychologically safe, reflective and constructive.
#EPOD-SIM: Simulation

#EPOD-SIM2 Mobile Healthcare Simulation Units: A narrative review (9406)

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ABSTRACT:

Background: Simulation-Based Education (SBE) is known to improve patient outcomes. For those Healthcare-Professionals (HCPs) working and living in geographical isolation, there are few opportunities to maintain clinical skills and knowledge compared with their city-dwelling peers. SBE is an effective solution to this problem; however, this is normally only accessible in simulation centers located in urban areas. Internationally, the solution adopted by wealthy countries has been to design and develop a Mobile Healthcare Simulation Unit (MHSU), extending the reach of city-based centres of excellence and taking the benefits of continuous professional development to practitioners in remote areas. This strategy has not been attempted in developing countries, perhaps, although by no means certain, because the perceived costs would be too much for one institution to bear. This issue was the motivation for undertaking this review.

Summary of Work: A systematic literature search was performed on Pubmed, google scholar, and COCHRANE databases. 19 studies focusing on medical education and training provided through MHSU were shortlisted.

Summary of Results:

Three major themes were identified: 1. Development of MHSU: 1a) Utilizing purpose-built or refurbished vehicles as MHSU. 1b) Purpose-built vehicles to be used as both MHSU and patient care facilities. c) Pop-up MHSU using tents and inflatable igloos, self-contained with fully portable equipment. 2. Learners experiences: A high satisfaction amongst the learners were reported in many studies. It provided an interprofessional experience for learners eliminating extended travel and disproportionate time away from work. 3. Challenges & recommendations consistently citing operational sustainability and benefits of having a custom-designed unit to meet needs.

Discussion and Conclusions: MHSU provides trainees with a platform to learn, regardless of geographic location. It could also be argued that the benefits for developing countries with scarce resources may be enjoyed in a more cost-effective way than those of developed countries. Sharing high quality educational resources circumvents the need for high initial costs and leads to greater utilization of expensive equipment leading to greater Return on Investment.

Take-home Messages: MHSU allows many smaller healthcare outlets and professionals to benefit from SBE of the highest quality without having to bear costs too great for any individual unit/centre to afford on their own.
#EPOD-SIM: Simulation

#EPOD-SIM3 Effects of the simulation-based emergency training program on practice-trained clinical psychologists' learning outcomes and competence of clinical emergency management (8825)

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Abstract:
Background: The traditional training program for both under-graduate year training (UGY) and post-graduate year training (PGY) clinical psychologists could only increase the trainees knowledge, but could not improve their competence in response to the clinical emergency in relation to patient safety. We used a commonly occurred scenario, that was patient suffering from emotional outburst with self-injurious behavior in psychological assessment as a simulation scenario, that could be used to evaluate these practice-trained clinical psychologists learning outcomes, and teach them skills to cope with such emergency situation.

Summary of Work: The simulation-based emergency training program was designed with 2 sections that are risk management and emergency intervention respectively. There were a standardized patient (SP) and two professional co-workers (experienced clinical psychologist and on-duty psychiatrist), who performed in accordance with standardized simulation script in simulation tests. The trainees received both pre- and post- simulation tests on their learning outcomes using satisfaction questionnaires. Their competence was measured by observing trainees behaviors in psychological assessment with clinical emergency in a standardized psychological test room. Two trainers were experienced clinical psychologists to rate the trainees competence by using a skill-rating scale behind one-way mirror. Data were analyzed in generalized estimating equation (GEE) model.

Summary of Results: Results of statistical analysis suggest that simulation-based emergency training program on practice-trained clinical psychologist could significantly improve the trainees skill-rating scale (B=21.95, p<0.001), trainees performance satisfaction (B=2.52, p<0.001), trainees self-satisfaction (B=2.81, p<0.001), mental load (B=7.08, p=0.001) and flow experience (B=2.1, p=0.03).

Discussion and Conclusions: Although the trainees discovered risk factors of emotional outburst with self-injurious behavior from referral sheet, they did not do anything to protect patient from injury or loss of emotional control. Even when SP showed self-injurious behavior repeatedly, trainees did not push emergency button to seek help, and no response for reduction of injured severity. It means that traditional training programs for UGY and PGY clinical psychologists are not enough for clinical emergency management. However, the simulation-based training program could fill the gap between clinical demands and the shortage of traditional education.

Take-home Messages: The practice-trained clinical psychologists enhanced competence of clinical emergency management through the simulation-based emergency training program.
#EPOD-SIM: Simulation

#EPOD-SIM4 Bleep simulation for final year medical students: Preparing for practice (9220)

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ABSTRACT:
Background: Foundation Year 1 (FY1) doctors often feel underprepared for starting work, with many finding on-call scenarios stressful and daunting. Based on challenges experienced in our training, we combined our knowledge and experience to create a teaching session aimed at preparing students for FY1. Scenarios were created, adapted and tailored to student placement aiming to develop key skills essential for FY1, informed by our experience and the literature.

Summary of Work: 30 final-year medical students attended one session from October 2020 to January 2021. Each student experienced a simulated bleep scenario followed by a debrief in small groups, allowing for peer observation and exposure to more scenarios. Pre (n=30) and post-session (n=27) questionnaires used 10-point Likert scales to measure students confidence in 8 key skills (receiving bleeps, prioritising tasks, creating a management plan, prescribing, documenting, decision making, communication, situational awareness) and overall perceived preparedness for FY1. Free text responses captured additional feedback.

Summary of Results: Mean confidence ratings increased for all skills. An unpaired t-test demonstrated a significant increase for all skills (p <0.01) excluding communication (p = 0.06), which had the highest pre-test mean confidence rating (6.4). Mean confidence ratings in receiving bleeps improved the most (2.9 to 6.6, pre and post respectively) (p=2.0 E-10). Students felt significantly more prepared for FY1 after the session (mean 4.0 to 5.9) (p=0.0001). Additional feedback identified the value of interactivity, active participation and debriefing during the session.

Discussion and Conclusions: The results demonstrate the schemes educational value in improving students confidence in all key skills and perceived preparedness for practice. Students significantly benefitted from roleplaying common scenarios in smaller groups and receiving feedback. Feedback highlighted longer sessions with additional scenarios as future improvements to widen this teaching scheme.

Take-home Messages: Through combining personal experience with the literature, common and realistic scenarios can be created to significantly benefit student learning. Roleplaying the scenarios, observing others and receiving feedback in a small group delivers effective learning. This is a feasible educational initiative that can be incorporated and tailored to student placements, providing educational value despite pandemic restrictions. The results supports its use as a larger teaching programme to better prepare students for practice.
#EPOD-SIM: Simulation

#EPOD-SIM5 Difference in simulation learning needs between pre-clinical and clinical medical students (7649)

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ABSTRACT:
Background: Simulation is a valuable tool for training health care professionals for various clinical and communication challenges. It does however require a lot of resources so its use needs to be appropriate. This study was performed to evaluate what medical students deem most important to learn by simulation.

Summary of Work: An electronic survey was sent to 305 medical students at the University of Iceland Medical School at the end of spring semester of 2020.

Summary of Results: In total, 199 students answered (65%), 88 in pre-clinical years (52%) and 137 in clinical years (81%). 160 students (81%) would want more simulation in their current year of training. When asked to rank order of importance of different challenges of clinical work to be learned using simulation, the pre-clinical students ranked sensitive situations first, followed by complicated situations, emergency situations, quickly changing situations, conflict with patients, routine situations and difficult situations. The clinical students ranked emergency situations first, followed by sensitive situations, leadership, quickly changing situations, decision making, routine situations and complicated situations. Neither group ranked team work in the top seven.

Discussion and Conclusions: Response rate was higher for the clinical students, perhaps because they have more clinical experience and have had more exposure to, and therefore interest in, simulation. The majority of medical students want more learning using simulation, regardless of year of training. The priorities from the student’s perspective differ between pre-clinical and clinical students, with the pre-clinical students ranking situations simulating communication, such as sensitivity and conflict resolution, higher. The clinical students put more emphasis on simulating leadership and decision making and the more acute situations. Since neither group ranks team work as a priority to simulate it raises the question if students have the full overview of what they need to learn.

Take-home Messages: Simulation curriculum needs to be tailored to what is relevant to students at different stages of training.
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ABSTRACT:
Background: Whole-person care is important in provision of patient-centered care, but its significance in clinical practice could be overlooked among medical students. Standardized patients offer students the opportunity to practice and improve their clinical skills; however, lack of authenticity remained an issue. Experienced clinicians could better simulate the totality of patient experience. This study aims to investigate students competence in obtaining information needed in provision of whole-person care through history taking from clinicians as standardized patients.

Summary of Work: The eight hours focused chart writing course is part of the clinical skills curriculum for fourth year medical students. The course consisted of interactive lectures, role play, small group discussions and interviewing clinicians as standardized patients. Students were required to submit individual assignment after history taking. Students were provided with marking rubrics specifying items related to whole-person care. A questionnaire was distributed to fifty-eight students at a medical school in the East of Taiwan. Free text comments from questionnaire and students assignments were studied by thematic analysis.

Summary of Results: Forty-one students completed the questionnaire and the feedback was mainly positive. Students found the course to be helpful in obtaining psychosocial history and enhanced their empathy towards patients. Students response to the significance of whole-person care was the lowest. Content analysis of the free text comments showed that students found the overall design of the course to be helpful in preparation of whole-person care in clinical practice, especially the clinicians as standardized patients. Students benefited the most from their feedback.

Discussion and Conclusions: Students gave comparably high marks to the focused chart writing course except the significance of whole-person care. It could be due to the biomedical focus of the curriculum and limited clinical exposure. Compared to conventional standardized patients, clinicians provided realistic experience in patient interview, as well as constructive and professional feedback. Students were more motivated and serious to learn when they are aware that the learning experience would be authentic and helpful with future practice.

Take-home Messages: Teaching comprehensive approach to patient care through chart writing course could be one of the methods of enhancing whole-person care.
#EPOD-SIM7 Comparing Digital Table simulation technology with a traditional case discussion approach for the development of clinical reasoning skills in medical students (8260)

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ABSTRACT:
Background: Clinical reasoning is essential for medical students to develop but there is no gold standard for teaching it. By employing simulation technologies, such as the Body InteractTM Digital Table, in a start/stop method focusing on clinical reasoning, we believe students can develop these skills. This study compares Digital Table technology with case-based discussion for the development of clinical reasoning skills.

Summary of Work: Medical students were recruited between December 2019 and December 2020. Students were randomly allocated in pairs to either Digital Table or case-based discussion, both teaching the same topic enabling comparisons. Students completed one scenario and then swapped the method of teaching to complete the second scenario. At the end of each, the students completed questionnaires assessing perceived benefits of the session and chose the style most beneficial to their learning.

Summary of Results: Of 28 students recruited, 2 could not attend due to COVID-19 self-isolation. 18 students were 4th years of study and 8 were 5th years. 11 students (42%) preferred Digital Table teaching and 6 (23%) preferred case-based teaching. 9 (35%) reported no significant difference between teaching styles. 100% of 5th year students preferred digital table teaching compared with 17% of 4th year students. Overall, 77% of students preferred Digital Table teaching or had no preference.

Discussion and Conclusions: Digital Table teaching provided experience of diagnosing and managing acutely unwell patients to students whose exposure was limited by COVID-19. More students found Digital Table to be beneficial in developing clinical reasoning skills than case-based teaching, demonstrating the importance of new technologies and the need for further research in this area. Originally aimed at 4th year students, due to the impact of COVID-19 on placement the study was extended to 5th year students. Due to self-isolation 2 students had to participate alone which may have affected their perceptions of the session.

Take-home Messages: Digital Table teaching is beneficial to a larger proportion of students than traditional case-based discussion. 77% of students preferred either Digital Table teaching or had no preference. Further research is needed to understand why 100% of 5th year students found the Digital Table more beneficial compared to 17% of 4th year students.
#EPOD-SIM: Simulation

#EPOD-SIM8 High fidelity simulation to enhance technical and non-technical skills of internal medicine trainee doctors (9256)

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ABSTRACT:
Background: Simulation based training is recognised as a valuable learning tool in medical education that allows opportunities to improve knowledge and practice skills in a safe environment without risks to patient safety. Simulation can be effective in human factors training and is being increasingly used in postgraduate medical education. The new Internal Medicine curriculum published by the Joint Royal Colleges of Physicians Training Board outlines the need for simulation based human factors training. We therefore developed a simulation training programme for Internal Medicine Trainee (IMT) doctors working in our local region to prepare them for future practice as medical registrars.

Summary of Work: A half-day simulation course was designed and delivered to IMT doctors Years 1 and 2. The programme consisted of high-fidelity scenarios supported by structured facilitated debriefing. Scenarios were matched to the IMT curriculum to ensure relevance to learning needs. Trainees completed a pre- and post-course questionnaire to assess their perceived abilities in clinical competence over a variety of non-technical and technical domains using a Likert scale (Strongly Disagree 1 - Strongly Agree 5).

Summary of Results: Preliminary data from 20 candidates showed a significant improvement in trainee perceived ability across all non-technical domains with the greatest improvements seen in confidently leading a team (+0.9; p=<0.05) and situational awareness (+0.7; p=<0.05). Trainee perceived ability significantly improved in all technical skills covered, with the largest improvements seen in managing medical problems in pregnancy (+1.3; p=<0.05) and care of the dying patient (+0.6; p<0.05). There was no significant change in control scenarios that were not covered during the course.

Discussion and Conclusions: This simulation course enhanced trainee self-perceived ability in non-technical skills and management of acute medical emergencies helping them develop the broad skillset necessary to manage complex medical problems and prepare them for the challenges of the role of medical registrar. We plan to design further scenarios covering topics suggested by trainees (gastrointestinal bleeding (45%); anaphylaxis (15%)) and included in the IMT curriculum.

Take-home Messages: High fidelity simulation training with structured facilitated debrief enhances the development of self-perceived technical and non-technical skills of internal medicine trainee doctors.
#EPOD-SIM: Simulation

#EPOD-SIM9 MaxSim, a Novel Simulation Based Education Course for OMFS Emergencies (8967)

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ABSTRACT:
Background: For Oral and Maxillofacial Surgery (OMFS) Senior House Officers (SHOs), with no formal medical training, the first exposure to inpatient medical or OMFS emergencies will be the first time they are having to manage them, usually alone. Simulation based education has been demonstrated to increased experience and confidence when used in medical education, therefore an OMFS simulation based education (SBE) course was created to facilitate this learning in a safe environment.

Summary of Work: The course included implementation of training on SBAR, A to E assessment, stations on medical emergencies such as sepsis, and OMFS emergencies centred around scenarios that necessitate rapid response including retrobulbar haemorrhage and carotid artery blowout. A pre and post course questionnaire was given to all delegates to assess their change in confidence when managing the scenarios. Each was asked to score their confidence in managing the scenarios numerically from one to ten.

Summary of Results: Delegate numbers were limited due to the Covid-19 pandemic with all ten completing both questionnaires. There was an even distribution between first and second year SHOs. Two had received simulation training before, however very limited. In all ten simulation stations every delegate felt an increase in confidence on average by 45% (range: 38-56%, p<0.05) on the ten-point scale. Positive feedback was received, with all delegates finding the day useful, it achieving what they hoped and stating they would recommend the course to a colleague.

Discussion and Conclusions: Both the SBAR and A to E tools were unknown to all of the SHOs, highlighting their lack of medical training as they are well known tools within the medical community. SBE was demonstrated to increase experience and confidence of SHOs managing and escalating common OMFS situations. This will result in an increase in the quality of patient care of these specific scenarios but the translatable skills will also enable more comprehensive care and handover in all aspects of the delegates roles.

Take-home Messages: Simulation based education has been shown to be invaluable method of training for clinical scenarios and needs to become more common place in Oral and Maxillofacial Surgery.
#EPOD-SIM: Simulation

#EPOD-SIM10 Paediatric Emergency Simulation for Final Year Medical Students (9303)

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ABSTRACT:
Background: Paediatric emergency is one of the compulsory curriculum for medical graduates according to Thai Medical Council. Simulation based learning (SBL) facilitates the learning and practising experiences in authentic problems for medical students in a safe environment. This study aimed to assess the effectiveness of SBL in paediatric emergencies and student satisfaction.

Summary of Work: The cross-sectional study was investigated at Khon Kaen Medical Education Centre, Thailand. Paediatric emergency simulation workshops with high-fidelity simulators and scenario based learning in three stations of status asthmaticus, status epilepticus and supraventricular tachycardia. The final year medical students were divided into three groups rotating every 45 minutes in three stations and receiving feedback after each rotation. The pre-/post-test scores, student satisfaction and feedback were collected and analysed.

Summary of Results: Thirty final year medical students participated in SBL (91% response rate). Mean pre- and post-test scores were 7.7±2.5/15 and 13.1±1.5/15, respectively. Most students (97%) were highly satisfied with SBL and supported having this workshop again for the next year. Students provided good feedback and expressed their learning needs in more topics e.g. neonatal resuscitation, paediatric advanced life support, septic shock, hypoglycaemia, common/emergency paediatric diseases and national licence examination preparation. They suggested increasing stations whereas decreasing the group size and giving handouts prior to the workshop.

Discussion and Conclusions: SBL in paediatric emergencies was effective for final year medical students with post-test scores double pre-test scores. Students were highly satisfied with this workshop and they contributed ideas to meet the learning needs for simulation based education and curriculum development.

Take-home Messages: SBL improves students knowledge and satisfaction in learning. The next challenging step is to assess whether SBL could improve knowledge application in real-life settings and patient-related outcomes.
#EPOD-SIM: Simulation

#EPOD-SIM11 Communication content during debriefing in simulation-based medical education: A category system and mixed-methods analysis (8071)

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ABSTRACT:
Background: Debriefing, an indispensable component of simulation-based medical education, has the most potential to contribute to reflective learning. Little is known about the relevance of communication during debriefings. We developed a category framework to assess communication content in debriefings and analyzed possible relationships to participants learning outcomes.

Summary of Work: We deductively and inductively developed a category framework for debriefing qualitative content analysis. We coded 20 debriefings using the framework and correlated debriefing frequencies with learning outcomes (engagement, satisfaction, individual and team learning success).

Summary of Results: The category framework comprised 9 main and 81 subcategories (48 debriefers, 27 participants, 6 simulated patients), which yielded good intercoder-agreement. Debriefers and participants communicated equally using mostly advocacy, inquiry, illustration and confirmation. While debriefers questions and participants inputs were positively related to learning outcomes, guess-what-I-am-thinking, apologies, observations, use of materials, and participants descriptions, simple repetition of statements, or evaluation by other participants were not.

Discussion and Conclusions: This study provides important new information about communication content during debriefings. We found an association between communication contents and learning outcomes, which could be particularly relevant to further enhance the efficacy of debriefings and simulation-based medical education.

Take-home Messages: • Little is known about the relevance of communication during debriefing, the most important part of simulation, that is purported to contribute to reflective learning. • Debriefers seem to communicate as much as participants, and their communication content is based on advocacy, inquiry, illustration and confirmation. • The use of circular questions and having more participants inputs seem to contribute significantly to the learning outcomes
#EPOD-SIM: Simulation

**#EPOD-SIM12** High-immersion vs. Low-immersion virtual simulation: A crossover trial comparing the effect on knowledge acquisition and retention in fifth-year medical students (8172)

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**ABSTRACT:**

**Background:** Simulation-based teaching has become an integral feature of medical education. Recent technological advances have improved the availability of virtual simulators, offering an alternative to mannequin-based simulations. However, there is limited research surrounding these devices within undergraduate medical education, particularly regarding core factors responsible for their learning effects. One element is immersion - the extent to which virtual environment replaces the users surroundings. Consequently, this study compares a high-immersion simulator to low-immersion simulation, through their effect on knowledge acquisition and retention. Our aim is to identify the importance of immersion with regards to its educational impact, thus, informing educational institutions on the most effective forms of virtual simulation.

**Summary of Work:** This randomized control trial adopted a crossover design. Thirty fifth-year medical students were recruited into the study. Each participant completed and observed a scenario on two simulation modalities: high-immersion virtual simulator, using a VR headset, and low-immersion virtual simulator, using a laptop computer screen. All participants received the same scenarios and received training in how to operate the equipment. Multiple-choice questions were utilized to determine knowledge acquisition and retention, which were completed immediately prior to the scenarios, immediately after the scenarios and one month later.

**Summary of Results:** Full results, available March 2021, will provide an analysis of knowledge acquisition and retention within and between the two modalities, using pre-, post-, and delayed test scores.

**Discussion and Conclusions:** Conclusions are dependent upon results. This study will evaluate the educational value of virtual simulation and explore the importance of immersion, thereby supporting educational institutions in identifying effective learning tools, and offering key information to software developers on the factors underpinning the effectiveness of simulation technologies.

**Take-home Messages:** This study addresses the necessity of evidence-informed medical education when implementing novel teaching practices, contributing to the scarce literature base surrounding virtual simulators.
#EPOD-SIM: Simulation

#EPOD-SIM13 The advantages of using Virtual Training System on nursing training - a qualitative analysis from a questionnaire survey of nursing educators (9140)

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ABSTRACT:
Background: The Virtual Training System (VTS) is used for young doctors recently. However, it is rarely used on nursing training of clinical reasoning. Here, we investigate the learning experience from the feedback of nursing educators.

Summary of Work: The VTS (on Clinical Decision Making) was used in our hospital since June, 2020. The training courses for nursing educators were also provided. After the training courses, 5 open-ended questions containing learning experience and suggestion were asked. A qualitative analysis was made from the questionnaire survey of the nursing educators.

Summary of Results: Nine nursing educators (all females) from department of internal medicine attended the training course on December 18, 2020. It lasted for 1.5 hours. All of them agreed to answer the anonymous survey after the training course. The results of qualitative analysis revealed that the VTS can: 1. Provide the feeling of presence. 2. Establish the ability of integrated assessment. 3. Stimulate the rethinking on nursing practice.

Discussion and Conclusions: The VTS provides a safe environment for nursing training and the nurse trainees may be more confident when discussing with doctors in the future. The VTS should be promoted in the nursing education.

Take-home Messages: 1. The VTS provides a safe environment for nursing training and the nurse trainees may be more confident when discussing with doctors in the future. 2. The Virtual Training System should be promoted in the nursing education.
**ABSTRACT:**
*Background:* Clinical training with manikin simulators is increasingly common. However, the assessment of a manikin, in particular the history and examination, is very different to that of a real patient. Furthermore, access to manikin simulators can be limited. This study was designed to address these challenges by combining aspects of traditional manikin simulation with the assessment of real patients.

*Summary of Work:* Inpatients who had recently experienced a medical emergency and whose condition had been stabilised were asked to recall their symptoms as if still present. These medical emergencies included: - Acute myocardial infarction - Atrial fibrillation with fast ventricular rate - Acute LV failure - Sepsis - Acute kidney injury - Acute respiratory failure - Exacerbation of COPD and asthma Newly qualified doctors assessed these patients in a simulated on-call setting. This involved a focused history with review of acute examination findings and investigations, followed by presentation of the case to an experienced doctor, to simulate escalation of care. The newly qualified doctors then formulated a differential diagnosis and management plan that led on to a discussion and feedback on their performance. The aim of the study was to increase preparedness for managing acutely unwell patients, in particular during on-call work. This preparedness was assessed by completion of a self-assessment questionnaire of confidence before, immediately after and >1 week after the training sessions.

*Summary of Results:* 16 doctors attended the training sessions. There was a significant increase in overall confidence in managing medical emergencies after attendance, as well as significant increases in managing all of the specific scenarios included (p<0.01). Confidence in communicating with other members of the on-call clinical team also significantly increased (p<0.01). All of these increases other than the management of sepsis were sustained at >1 week after the sessions.

*Discussion and Conclusions:* Simulation training with real patients led to a sustained increase in confidence in managing acute medical emergencies, as well as increasing confidence in communicating clinical information in an on-call setting.

*Take-home Messages:* Simulation training with real patients is an effective, accessible and easily reproducible method of training newly qualified doctors in managing acute medical emergencies. It can be used to complement traditional manikin simulation.
#EPOD-SIM: Simulation

#EPOD-SIM15 Student perception on online breaking bad news simulation training (9080)

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**ABSTRACT:**

**Background:** During this pandemic, medical education had to evolve from regular face to face classroom didactics to online formats including simulation workshops for breaking bad news training. Objective was to evaluate student perception of the online format for breaking bad news simulation training workshop.

**Summary of Work:** A qualitative design was used. 200 interns from 6th and 7th year of undergraduate medical school participated. Workshops lasted 4 hours each with an average participation of 10 students per session. Students participated in at least 3 sessions each during 2020. COVID related online or telephonic communication scenarios were included among others, with simulated patients. Sessions consisted of simulation, immediate peer and tutors feedback, student and group reflection on relational and emotional aspects of the simulation. Key informants were 4 students whom participated in-depth by phone interviews until saturation of information was reached.

**Summary of Results:** Descriptive analysis revealed 5 emergent categories: 1. Didactic workshop structure, was perceived as well planned and organized, a good and useful experience, with students mentioning first person as better than observer simulation experience. 2. Didactic validity of simulated scenarios was deemed realistic and properly elicited real-life responses in the doctor patient relationship. 3. Feedback was described as diverse, necessary, complete, nontthreatening, included all participants views and delivered useful tips. 4. Emotional component revealed that skills were perceived as being acquired in a protected and emotionally embracing didactic environment, that prepared interns for future experiences. 5. Nonverbal communication, in that online experience decreases capacity to observe, interpret and respond to nonverbal communication cues and decreases interaction of classroom social experiences.

**Discussion and Conclusions:** Students perception of online workshops is generally positive. Previous face to face experiences, although highlighting the relevance of nonverbal communication, validate the use of COVID phone call communication scenarios. In lieu of presentential learning activities, online is validated as the possibility of rehearsing and preparing for real-life bad news communication scenarios.

**Take-home Messages:** Well planned and didactically organized online skills training is preferred to no training at all. COVID scenarios are realistic in pandemic context and prepare skills for telemedicine practice.
ABSTRACT:

Background: Final year medical students consistently report feeling under-prepared about the prospect of being on-call as a new foundation doctor. Exposure to on-calls at medical school is limited at best, but Covid-19 has further restricted students experience in the clinical environment. Previously used ward based on-call simulations have been prohibited due to the pandemic and major adaptations have to be made to provide students with adequate on-call teaching.

Summary of Work: We organised a classroom-based simulation session called ATSP (Asked To See Patient) to improve medical students confidence and knowledge when on-call. In small groups, using a variety of common on-call scenarios, students practiced taking effective handovers before being asked to assess patients, initiate management plans and escalate if further assistance was required. Thorough debriefs occurred after each scenario as a group. This was achieved without the use of a formal simulation suite and simultaneously limiting potential Covid-19 exposure and spread.

Summary of Results: Pre-session, students reported they felt under-confident at the prospect of managing on-call scenarios. Over 70% of students stated they were unsure or did not know what common scenarios to expect when on-call. Post-session, students reported over a 200% increase in confidence levels when asked about the prospect of on-calls. 100% of students felt confident about knowing the most common scenarios they may face when on-call. All students felt the session met its objectives.

Discussion and Conclusions: We believe running a classroom-based on-call simulation session can greatly improve confidence levels amongst final year students. During the restraints of Covid-19, we consider classroom-based teaching to be an excellent tool for students to experience on-calls whilst clinical exposure remains limited. We believe this session can be easily replicated, allowing more students to experience on-call scenarios and increase their confidence prior to their foundation years.

Take-home Messages: - Students feel under-prepared when faced with the prospect of managing on-calls - Covid-19 has significantly limited medical students exposure to on-call experiences - Participation in an interactive classroom session running through common on-call scenarios can greatly improve medical students confidence and knowledge levels - Classroom-based simulation may be the best method of teaching whilst limited clinical exposure remains.
#EPOD-CURT: Curriculum - Transition into being a Doctor

#EPOD-CURT2 UK and Ireland Collaboration: Comparing Preparedness and Anxiety Amongst Junior Doctors (9001)

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ABSTRACT:

Background: The UK Foundation Programme consists of a longstanding mandatory induction period, prior to starting as a junior doctor. In 2019, Ireland introduced a standardised paid induction programme for their interns. The aim of the induction period is to bridge the gap between medical school and clinical work.

Summary of Work: UK and Irish junior doctors completed a survey after their induction period. Collaboration between Ireland and the UK has facilitated analysis of these responses, enabling us to compare perceived preparedness and confidence in multiple areas of practice and to identify any key areas of strength and areas of concern amongst trainees.

Summary of Results: 1302 F1s (18%) and 91 Irish interns (12%) completed the post-induction surveys. 62% of UK F1s indicated that they felt prepared for their role as compared to 44% of the Irish cohort. 75% of the UK F1s indicated that they had regular access to simulation training during their medical school as compared to 39% of the Irish interns. Confidence in prescribing was generally slightly higher for the UK F1 cohort compared to the Irish interns. The two groups showed very similar trends regarding confidence across different types of prescribing. For example, both cohorts described feeling least confident in prescribing insulin and psychiatric medication. 40% of the Irish cohort felt significantly anxious overall prior to commencing clinical work as compared to 34% of the UK cohort.

Discussion and Conclusions: This collaboration across Ireland and the UK has allowed us to consider how prepared graduates are for clinical practice and demonstrates that a streamlined induction programme could benefit both cohorts. The UK has a more established induction programme which seems to enable improved preparation of their F1 intake. However, both cohorts indicated that they lack confidence in prescribing. This is a key area of emphasis for future induction programmes in both the UK and Ireland.

Take-home Messages: The induction programme is a valued experience to both UK F1s and Irish interns F1s overall felt more prepared and less anxious than interns Prescribing remains a key area of anxiety for both groups.
#EPOD-CURT: Curriculum - Transition into being a Doctor

#EPOD-CURT3 Quality improvement project: Evaluating the role of virtual on-calls in improving non-technical skills of final year medical students (8023)

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William Waugh, Kings College Hospital, UK

**ABSTRACT:**

**Background:** The transition to a foundation year one (FY1) doctor can be a stressful period for medical students, with many feeling underprepared. The new Kings College London (KCL) 2020 curriculum for final years included simulated virtual on-calls (VOC), to improve confidence and preparedness for becoming junior doctors. To further existing studies, we evaluated whether the VOC programme translates into improvements in student performance and enhances students communication and handover skills.

**Summary of Work:** Regular simulated non-patient contact VOCs were organised for 36 students at KCL. Students spent an hour on-call dealing with common scenarios through simulated calls and handovers using mock patient notes. Pre- and Post- session feedback were anonymously collected through online surveys, scoring confidence and preparedness using a 5-point Likert scale. Handover and communication tutorials from a facilitator were introduced to improve performance. Outcomes were measured by facilitator scoring of students performance based on their communication and handover skills. Mean scores were analysed using unpaired Students t-test/ Mann-whitney tests (p<0.05 considered statistically significant).

**Summary of Results:** At baseline, students participating in VOC sessions scored an average of 5.4/9 for telephone communication. Following the incorporation of a facilitated handover/ communication tutorial their performance improved by 14.3%, increasing their average score to 6.9 (p=0.02). Furthermore, on average students handover performances improved from 7.6 to 9.5/12 (p=0.03). Following analysis of pre- and post- session feedback from all participants, confidence increased markedly from 47% of students not feeling confident pre-sessions to 82% feeling somewhat-to-very confident afterwards. 91% either agreed or strongly agreed the session improved their prioritisation skills and 62% strongly agreed the session helped with telephone communication skills. 95% either agreed or strongly agreed that the session improved their handover skills.

**Discussion and Conclusions:** Overall, students felt more prepared and confident with non-technical skills after VOC sessions. The additional communication teaching sessions demonstrated a further improvement in student performance.

**Take-home Messages:** The theoretical knowledge taught in medical school, does not always help students feel prepared for the practical aspects of their job. VOC as a tool, is valued by students and is effective in improving performance. Considering the Covid-19 pandemic, VOCs can provide socially distanced learning opportunities, with minimal patient contact.
#EPOD-CURT: Curriculum - Transition into being a Doctor

#EPOD-CURT4 Preparing Final Year Medical Students for Practice: Evaluating the Use of Simulated On-Calls on Perception and Confidence (8989)

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Chloe Henson (Co-Presenter), Mid Cheshire Hospitals NHS Foundation Trust, UK

ABSTRACT:

Background: In preparation for practice, UK final-year medical students are required to shadow foundation year-one doctors (FY1) on-call. Despite this, new FY1s often lack confidence and competence when first starting on-calls after graduation. We aim to bridge this gap with a two-hour paper-based simulated experience where final-year students assume role of the on-call FY1.

Summary of Work: During the session, students were expected to respond to bleeps, prioritise jobs, review notes, formulate plans, document, escalate and handover to colleagues. The session was followed by a one-to-one debrief. Students perceptions on their understanding of the role of an FY1 on-call, their perceived preparedness, and their confidence in communicating with nursing staff, senior colleagues and fellow FY1 doctors was assessed pre- and post-session using a ten-point Likert scale (1=strongly disagree; 10=strongly agree). Students were also asked to provide free text comments on what they found most useful about the session. Mean scores were used to evaluate the Likert scale responses, whereas the free-text responses were thematically analysed.

Summary of Results: At the time of abstract submission, nine students results were analysed, though we expect a final sample size of 20-25 students. Interim analysis demonstrates an improved confidence level across all areas explored, by an average of three points. The most prominent areas of improvement were confidence in responding to bleeps, and in communicating with seniors for advice. Qualitative analysis of the students written feedback showed they benefitted from getting used to practical tasks such as prescribing, practicing communicating with other colleagues, and improved confidence in prioritising on-call tasks.

Discussion and Conclusions: New doctors often express anxiety towards on-calls despite previous shadowing experiences. Our findings suggest a low-cost, non-clinical simulation can improve their understanding of and confidence in being on-call. This can provide a safe space to prepare for on-call work and identify gaps in students knowledge or skill, in preparation for practice. Further research in this area could focus on objectively assessing students competence in being on-call, and how simulated sessions can impact this.

Take-home Messages: Simulated on-call teaching sessions can improve final-year medical students confidence in their upcoming work as an FY1 doctor, as well as their understanding of the on-call role.
#EPOD-CURT: Curriculum - Transition into being a Doctor

#EPOD-CURT5 Structured-intensive-training of integrated clinical skills would be better preparation for students’ Internship (8407)

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ABSTRACT:
Background: Eight-year program of medical education is the application and development direction of higher medical education in China, aiming at cultivating excellent doctors who will lead the development trend. This requires medical students to have more skilled clinical abilities and the ability to solve clinical problems when they graduate. Besides, with the awareness of professionalism among medical education experts in our university, we conduct this study to empower the students to have a certain level of clinical skills and professional abilities before the internship, so that they can adapt to the internship more fluently. Summary of Work: From 2016 to 2018, a total of 280 students (all from eight-year programs) were given a 3-week structured-intensive-training of integrated clinical skills (include procedural skills, communication, humanism, clinical reasoning, and patient management.) before their internship. A multi-station clinical examination and feedback were conducted at the end. Students who did not have this training (186 people, from 2015 to 2016) were selected as the control group. The results of the Internship-admission test were compared between the two groups. After the internship, a questionnaire was applied to investigate the learning effect and students satisfaction. Summary of Results: The results of the Internship-admission test from the students who participated in this training were better than the control group. Multivariate linear regression analysis also indicated that Structured-intensive-training was positively correlated with the scores of the exams. The questionnaire indicated that more than 83% of the students agree with the opinion: the training can improve the level of clinical skills, clinical reasoning, communication ability, and provide better preparation for their internship. Discussion and Conclusions: Short-term structured-intensive-training of integrated clinical skills was well received by our students. It can help students prepare better and feel more confident before the internship. It would be an important method for students to learn professionalism. Although it has a certain demand for teaching resources in the short term, it is relatively less on the whole. Besides, through standardized curriculum design, it is also easier to achieve. Take-home Messages: Students adaptation and preparation can be improved by short-term structured-intensive-training of integrated clinical skills.
In-situ Simulated Ward Cover Improves Confidence in Final Year Medical Students (9336)

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ABSTRACT:
Background: Starting as a foundation year one (FY1) doctor can be a daunting experience, and previous studies have highlighted significant anxiety with starting on-call and ward cover shifts. The General Medical Council advises that transition interventions, such as simulation, can improve preparation for clinical practice. We have designed a simulated ward cover experience targeted at final year medical students.

Summary of Work: The simulation took place on the medical wards in a district general hospital. Each student received a pager and was contacted by the facilitator who simulated being various members of the multidisciplinary team. The tasks were paper-based and consisted of common FY1 tasks which included prescribing requests and reviews of deteriorating patients. Students were expected to prioritise, manage and escalate patients appropriately. The session was concluded with a simulated medical emergency scenario and handover to the night team. Students were surveyed pre-session and asked to rate their confidence in several domains surrounding prioritisation, clinical management, working independently, communication, and prescribing. Students were then asked to re-evaluate their confidence in the same domains upon completing the simulation session.

Summary of Results: Overall, there was an increase in confidence across all domains. Prior to the simulation session, students were least confident in making decisions independently, working independently and making effective referrals. The majority of students reported improvements in confidence across all domains.

Discussion and Conclusions: All students who undertook the simulation found it useful in preparing for FY1 and many have suggested its inclusion as a mandatory part of the curriculum. Simulation provides a safe environment to increase confidence in clinical practice that may not be covered in our current medical curriculum and allows for experiential learning without endangering patient safety before starting as an FY1 doctor.

Take-home Messages: The simulated ward cover experience can easily be integrated into a final year medical curriculum based on an apprenticeship model and can increase student confidence prior to FY1 as a transition intervention. It could also be incorporated into NHS Trust inductions for new FY1 doctors.
ABSTRACT:
Background: New FY1s often feel under-prepared when transitioning into professional practitioners. The Ask To See the Patient course aimed to improve this transition by managing expectations in a safe environment. The course objectives were to increase confidence, familiarisation with hospital systems, improving prioritisation skills, escalation and SBAR handovers.

Summary of Work: 29 new FY1s participated in a near-peer facilitated ATSP course during their induction week. An introductory session allowed concerns to be anonymously raised and a small-group prioritisation task provided a needs assessment. The bleep roulette on-call simulation comprised of ten bleep handover tasks including; common FY1 jobs, using local protocols and clinical decision making. The objective was to utilise simulation experiential learning and Lave & Wengers learning by participation. A conclusion session promoted reflection and feedback.

Summary of Results: A pre-ATSP course survey analysis demonstrated the fear of not knowing was common among all new FY1s. Participants achievement aims of familiarisation, prioritisation and confidence were highlighted. The post-ATSP survey demonstrated that 96% of participants achieved their aims. Confidence levels in 8 areas were surveyed before and after the ATSP course. There was an overall trend towards increased confidence in all areas. Significantly, the post-ATSP survey revealed that no participants felt not confident in any area. Taking referrals was the area with the largest confidence increase with 50% of participants moderately confident, compared to just 4% pre-ATSP. SBAR handovers demonstrated a 30% increase in moderate confidence and 17% increase in the very confident category. These trends suggest that the ATSP course was successful in improving confidence and preparing new FY1s for their first on-call shift.

Discussion and Conclusions: Near-peer teaching enabled the ATSP course to be based on previous experiences and difficulties faced by the facilitating team. Utilising Trust-specific information, new FY1s felt more confident in the essential skills for starting work. The course provided the opportunity for new FY1s to connect with current trainees and visualise their potential development.

Take-home Messages: • The prospect of starting the Foundation Programme results in common shared fears. • The ATSP course increased new FY1 trainee confidence in undertaking on-call shifts. • Near-peer teaching enables new Foundation trainees to connect with current trainees.
#EPOD-CURT: Curriculum - Transition into being a Doctor

#EPOD-CURT8 Virtual on-Call: Preparing Tomorrow's Doctors Using Hospital-Based In Situ Simulation (7929)

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ABSTRACT:

**Background:** A common difficulty faced by newly qualified junior doctors is navigating busy and high-pressured on-call shifts. Most medical students have little experience of ward-based out of hours work and little guidance on the soft skills required. The aim of this Virtual On-call (VOC) program was to simulate the pressure of covering hospital wards out of hours in a safe environment to better prepare final year medical students. We also aimed to explore whether this program would be useful as part of foundation year 1 (FY1) induction.

**Summary of Work:** Final year medical students and junior doctor facilitators signed-up on a voluntary basis. Facilitators were given a session framework with six clinical scenarios and mark schemes which pertained to written scenarios kept in folders over various wards in the hospital. The students were briefed on the aims and structure of the session and given bleeps to carry. For the next hour students were bleeped by the facilitators acting as nursing staff. Once time was up students were called back and asked to handover as if to a colleague taking over. The session ended with a half hour debrief and summary. Both students and facilitators filled out anonymous written feedback questionnaires.

**Summary of Results:** All students strongly agreed that the session was useful in preparing them for future on-call shifts. Debrief with the facilitators provided them with practical feedback, and many left the sessions feeling more confident. Facilitators found the sessions straightforward to run and agreed the scenarios reflected real clinical experiences. All participants agreed that this simulation could be useful as part of FY1 induction.

**Discussion and Conclusions:** VOC has been shown to be successful in helping final year medical students feel more prepared when covering the wards out of hours and has helped them to develop the skills required to prioritise tasks, handover, and manage common on-call scenarios.

**Take-home Messages:** An engaging and interactive teaching session aimed at developing the skills and confidence to tackle the challenges of on-call ward cover shifts is yet to be formally established in many centres. VOC offers a promising way to deliver this to tomorrows doctors.
The transition from Foundation interim Year 1 to Foundation Year 1 during the COVID-19 pandemic: Preparing for on-call duties through near-peer led simulation (8076)

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ABSTRACT:
Background: The transition from final-year medical student to foundation year 1 (FY1) doctor is often challenging, particularly with the prospect of on-call duties. In response to the COVID-19 pandemic, final-year medical students were offered a Foundation interim Year 1 (FiY1) post involving ward cover without out-of-hours on-call work. We consider the use of near-peer on-call simulation to prepare FiY1s for on-call duties during the COVID-19 pandemic.

Summary of Work: All 19 FiY1s at Nottingham City Hospital were invited to and took part in the two-hour simulated on-call. FiY1s were given a mobile device which they received eight simulated on-call duties from a nurse or hospital@night facilitator. FiY1s approached the tasks as if they were on-call; folders containing details of a simulated clinical scenario including ECGs, prescriptions, blood results and imaging were presented on the wards. FiY1s could call the simulated on-call SHO or registrar as they felt appropriate. Following the simulation, a facilitated debrief and feedback session explored clinical and non-clinical domains. PPE and social distancing were maintained in accordance with trust guidelines.

Summary of Results: All 19 FiY1s completed a pre-and post-simulation questionnaire survey according to a 5-point Likert scale. Prior to simulation, 5% of FiY1 participants felt prepared for their first on-call shift. Following the simulation, 100% of participants felt more confident and prepared in attending their first on-call shift. Additionally, 100% of participants felt the clinical scenario, debrief, and feedback was very or extremely relevant and useful.

Discussion and Conclusions: FiY1s did not have experience of out-of-hours on-call work and did not feel prepared for the inevitable on-call duties of an FY1 during the COVID-19 pandemic. After the on-call simulation, FiY1s felt more confident across several clinical and non-clinical domains pertinent to out-of-hours clinical practice. Following the positive feedback from participants and medical consultants, the simulated on-call teaching programme has been maintained in Nottingham City Hospital and has expanded to United Lincolnshire Hospitals NHS trust.

Take-home Messages: With limited teaching opportunities for medical students due to the pressures of the COVID-19 pandemic, near-peer facilitated on-call simulation offers a dynamic low-cost method of preparing FiY1s and final-year medical students for the clinical and non-clinical challenges of on-call duties.
#EPOD-CURT: Curriculum - Transition into being a Doctor

**#EPOD-CURT10 Improving Transition: Understanding the highs and lows for new paediatric registrars and uncovering learning needs (9317)**

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**ABSTRACT:**
Background: The transition from senior house officer to registrar has had limited study, meaning the learning needs of such trainees are unclear, including what educational interventions may improve the process. This qualitative study examined the perceptions of transitioning paediatric trainees to: 1) understand trainee perception about their positive and negative experiences of transition; 2) identify learning needs; 3) derive educational interventions to ease transition.

Summary of Work: After University ethics approval and informed consent, six Wales Deanery paediatric ST3 and ST4 trainees were questioned via semi-structured interview using critical incident technique. Transcribed responses were thematically analysed to data-sufficiency.

Summary of Results: Learning needs were dichotomised to clinical skills or leadership and management skills. Clinical skills included child protection, difficult communication, emergencies, childhood death, difficult procedures, tertiary neonates, family anxiety and expectations, dealing with uncertainty and running clinics. Leadership and management skills included clinical decision making, leading ward rounds, managing workload, leading a team and supervising juniors. Educational interventions included acting-up, feedback, senior support, staff support, familiarising with the initial ST4 placement and maximising SHO learning opportunities.

Discussion and Conclusions: Practice suggestions involve five stakeholders. Trainees could focus PDPs toward identified learning needs and volunteer to act-up. Seniors could routinely offer trainees to lead ward rounds and clinics, provide feedback constructively avoiding criticism, mentor, and check upon transitioning trainees prior to and during out-of-hour shifts, stressing their availability to address concerns. Nursing staff can support by offering leeway and avoiding potentially undermining behaviour. Educators could target step-up courses and study/simulation days to address relevant learning needs. Educators could ensure the first ST4 placement is at a familiar centre, whilst rota co-ordinators could introduce out-of-hour shifts in a stepwise manner from evenings to nights and ensure an appropriate skill mix of supporting staff.

Take-home Messages: The learning needs for transitioning paediatric trainees subcategorise into clinical skills or leadership and management skills. The latter requires more deliberate attention in speciality training programmes. Six educational interventions to improve transition included acting-up, feedback, senior support, staff support, familiarising with the initial ST4 placement and maximising SHO learning opportunities. Implementing these interventions involve practice recommendations for five stakeholders: trainees, seniors, nursing staff, educators and rota co-ordinators.
#EPOD-FDT: Faculty Development - The Teacher

#EPOD-FDT1 Immediate Feedback Guides Faculty Development (8375)

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**ABSTRACT:**  
**Background:** Improving the teaching environment is in desperate need to enhance student engagement. Identifying extraordinary teachers and the characteristics of their excellent teaching methods provide role model learning. Moreover, early recognition of underperforming teachers allows opportunities for refinement. Our studies aimed to establish an immediate student feedback system to facilitate real-time improvement of teaching environment.  
**Summary of Work:** Since October 2020, we applied an interactive response system called Zuvio to obtain the feedback from students. After each class, students would use Zuvio to give quantitative and qualitative feedback. A meeting was held monthly to identify top-ranking teachers, who would be listed on the school website as a public praise. Their teaching methods were videotaped and available for public in the school for role model learning. The underperforming teachers would receive suggestions to urge refinement.  
**Summary of Results:** There were 9 teachers being recognized and 1 teacher being cautioned from October to December 2020. Characteristics of their excellent teaching methods were identified as the following factors: usefulness, interest, good time control, clear structure, and caring. The underperforming characteristics included too fast or too much speaking, no clear structure, and poor time control. Students recognized this real-time feedback system as an immediate and easier tool to express their comments of the classes.  
**Discussion and Conclusions:** With this immediate feedback system, we could identify outstanding and underperforming teachers in-between the semester instead of the end of semester, which real-time improvement could be made. Besides, this system not only boosted the motivation of the rewarded teachers, but also kept underperforming teachers monitored for continuous improvement. The identified characteristics and the videotapes could provide new teachers with an evident guide. These excellent or underperforming characteristics would be discussed in the following faculty meeting, which could enhance faculty development. This immediate feedback system not only enforces real-time improvement of the teaching environment but also guides faculty development through rewarding outstanding teachers and providing the identified characteristics.  
**Take-home Messages:** This immediate feedback system furnishes to promptly identify excellent or underperforming teachers and their teaching characteristics, which is useful for real-time improvement of the teaching environment and in turn helpful for faculty development.
ABSTRACT:

Background: The change from teacher to learner centred medical education, and to satisfy the needs of students is a key factor of these years. To have a detailed view, we aimed to examine the attitudes of teachers and students towards the pedagogical skills of teachers.

Summary of Work: Data collection through self-reported questionnaire in online form in the four Hungarian higher education institutions offering medical education was carried out in November 2017. Altogether 1944 questionnaires (students: 1505, teachers: 439) were processed and for data analysis crosstabs, Anova tests were performed. In-depth interviews were processed to complete our research.

Summary of Results: Both teachers and students ratings were analysed regarding the need for further development in pedagogical skills (didactic knowledge, organizing and leading the learning process, psychological knowledge, communication knowledge, professional knowledge, improving adapting skills, decision-making skills, learning the ability of professional cooperation, empathy). There are striking differences in the ratings. The opinions of students about the necessity of developing on the nine surveyed pedagogical fields compared to the opinions of teachers are all statistically higher according to the results of the t-tests (p<0.01).

Discussion and Conclusions: The ratings given by teachers for pedagogical skills indicate a relatively low interest in further development. Furthermore, students rated the need for professional knowledge with the lowest average. It suggests that they feel it the least crucial field for the further development of teachers. The other skills providing the basis for delivering knowledge, among others professional knowledge, were all rated higher by students than by teachers, so students recommend further development more than teachers think they should have.

Take-home Messages: The study underlines the necessity of a paradigm shift in medical education from sharing exclusively professional knowledge to pedagogically prepared practice, patient and student oriented teaching methods in Hungarian medical education as well as emphasizing the acquisition of pedagogical skills as part of the training of medical teachers.
ABSTRACT:

Background: The COVID-19 pandemic has impacted the mode of traditional medical education and online teaching has become mainstream in 2020. However, most clinical teachers in Taiwan faced challenges for executing online teaching. Therefore, we designed a training program using experiential learning model for improving clinical teachers online teaching skills.

Summary of Work: The Department of Research and Medical Education in Taipei City Hospital had designed a serial training program of online teaching skills for clinical teachers. Based on the experiential leaning model, the program contained several sessions, including lecture of basic concept, practice of online teaching and course design, as well as introduction of useful tools, such as Google Classroom. We also performed pre-test and post-test for the training program, as well as questionnaire survey about the willingness and confidence of conducting online teaching.

Summary of Results: A total of 106 participants had attended this training program, including medical doctors, nurse practitioners and other paramedical staffs. Among these participants, 93.1% reported knowing online teaching but only 36.1% had the experience. The results of pre-test and post-test showed most participants have learned better about essential online teaching skills and the useful online teaching tools. However, elder teachers needed more practice to overcome technophobia. After finishing this program, the rate of participants having willingness to execute online teaching increased from 70.8% to 78.3% and the rate of having confidence also significantly increased from 47.2% to 72.7%.

Discussion and Conclusions: The purpose of this training program focused on increasing clinical teachers knowledge and skills about online teaching. Our survey revealed using experiential learning model for practice of teaching skills can enhance participants willingness and confidence conducting online teaching. However, for some teachers, the familiarity of using technology and suitable online teaching tools (or apps) still depends on more practice. After teamwork discussion, most teachers learned how to design creative online teaching courses as well. We hoped these clinical teachers are able to skillfully perform online teaching and online assessment for medical students and residents.

Take-home Messages: Training program based on experiential learning model helped clinical teachers to handle essential skills for online teaching.
ABSTRACT:
Background: The COVID-19 pandemic forced a shift in the delivery format of faculty development workshops. Rather than an entirely online workshop, the Centre for Medical Education (CenMED), Yong Loo Lin School of Medicine, National University of Singapore, introduced a blended learning approach underpinned by the transformative learning theory to tap on the synergistic effect of this format. Knowledge gained through online learning is expanded when learners interact online with other participants and the facilitators. This presentation will share the process and feedback for utilising CenMED Scholar for blended learning.

Summary of Work: CenMED Scholar is a learning management platform providing Just-In-Time (JIT) learning to train busy educators located at different training sites. To utilise this for blending learning, 50 Reusable Learning Objects (RLOs) comprising previously used workshop materials such as pre-readings and videos were uploaded between June to September 2020 to form the respective modules in a course. Participants had individualised access code to access these materials 2-4 weeks prior to each workshop and other resources available including recordings of educational talks. Post-workshop feedback regarding the platform was collected via an online questionnaire.

Summary of Results: A total of 144 participants across various professions (clinicians, nursing, dentistry, allied health, students, administrators) from 7 workshops accessed the materials. 89.64% of the respondents rated the online learning experience as good or excellent. The average course completion time was 1 day and 2 hours, with the minimum and maximum being 37 minutes and 3 days 13 hours respectively. Qualitative comments from the questionnaire revealed CenMED Scholar as a repository of learning was relevant, easy to navigate and well organised. Suggested improvements included minimising repetitive content and lack of discussion or interaction.

Discussion and Conclusions: CenMED Scholar increased the learning efficiency of the workshops by providing a dynamic platform to front-load the materials and complement the facilitated sessions. This allowed time-constrained learners from both local and overseas to participate and improve their teaching skills.

Take-home Messages: Using a blended learning format involving pre-learning materials hosted on a learning platform and online face-to-face sessions with the facilitators is an option worth considering.
#EPOD-FDT: Faculty Development - The Teacher

#EPOD-FDT5 Validation of the Korean version of the Conceptions of Learning and Teaching (K-COLT) scale (8595)

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ABSTRACT:
Background: All medical teachers consciously or unconsciously have conceptions of learning and teaching. Teachers' conceptions of learning and teaching affect their teaching behavior and students' academic achievement. Thus, it is necessary to understand the faculty perceptions of learning and teaching in order to develop their teaching competencies. This study aimed to validate the Korean version of the Conceptions of Learning and Teaching (K-COLT) scale, an instrument for measuring medical faculty conceptions of learning and teaching.

Summary of Work: The COLT scale was translated to Korean by the authors, and the questionnaires were administered to faculty members at 3 medical schools in South Korea. To analyze the validity of the K-COLT, exploratory and confirmatory factor analyses were conducted. Cronbach's $\alpha$ was analyzed to evaluate reliability.

Summary of Results: A total of 154 questionnaires were returned (approximately 51% response rate). The exploratory factor analysis identified three factors: (a) Learner Centeredness, (b) Professional Practice, and (c) Interactive Learning Environment. These three factors accounted for 54.868% of the variance. Cronbach's $\alpha$s were 0.807, 0.744, and 0.736. Confirmatory factor analysis resulted in three factors, which demonstrated satisfactory goodness-of-fit indices (CFI = 0.921, TLI = 0.9, RMSEA = 0.068). Reliability estimates of the three subscales were also satisfactory (Cronbach's $\alpha \pm = .74 - .81$).

Discussion and Conclusions: Our study shows K-COLT appears to be a construct valid tool for measuring medical teachers' conceptions of learning and teaching. The K-COLT can be a promising tool to improve faculty development in Korean medical schools.

Take-home Messages: K-COLT is a valid tool for measuring medical faculty conceptions of learning and teaching. This tool can be used for various purposes, which include understanding medical faculty conceptions in international contexts.
ABSTRACT:
Background: Moving towards a horizontal and vertical integrated curriculum, Work-Station Learning Activities (WSLA) were designed and implemented as a new learning instrument. Here, we aim to evaluate whether and how this specific learning model affects academic performance. To better understand how it is received by medical students, a mixed methods research study was conducted.
Summary of Work: In the quantitative strand, two cohorts of first year students were compared: academic year 2015-2016 n = 320 with no exposure to WSLA, and academic year 2016-2017 n = 336 with WSLA. Learning objectives at different levels of Blooms taxonomy were identified and performance evaluated from multiple-choice questions. In the qualitative strand, a total of six students were purposely selected considering academic performance and motivation, and submitted to semistructured interviews.
Summary of Results: Performance at both cohorts for learning objectives at lower levels of Blooms taxonomy was similar (38.8 vs. 39.0%; p = 0.955). In contrast, students in the WSLA group outperformed significantly those not exposed for learning objectives involving upper levels (68.5 vs. 54.2%; p <0.001). A multivariate analysis confirmed that the probability of mastering the second (more complex) objective is 1.64 times higher in students with WSLA methodology (OR 95% CI, 1.15-2.34; p = 0.007) than with traditional methodology. In the interviews, students perceived the clinical scenario of WSLA as a motivator and recognized this methodology as a more constructive framework for understanding of complicated concepts.
Discussion and Conclusions: In summary, our mixed methods research supports WSLA as a strategy that promotes deep learning and has a positive impact on academic performance for learning objectives involving higher order thinking skills in medical curricula.
Take-home Messages: - WSLA is a student-centered methodology, designed to promote integrative knowledge using workstations and clinical scenarios. - WSLA promotes deep learning. - WSLA methodology is considered critical to motivate the students learning process in foundational sciences, as we have recorded in the analyzed interviews.
#EPOD-TL: Teaching & Learning

#EPOD-TL2 Use of pre-lecture Concise Medical Information Cines (CoMICs) to enhance learning in pre-clinical medical education (9188)

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ABSTRACT:
Background: Pre-clinical medical education is mainly delivered in didactic large-group lectures, where new terminology and concepts are introduced. Mounting evidence suggests that pre-class activities introducing new material can increase student performance. Concise Medical Information Cines (CoMICs) compresses information on a disease or condition based on latest evidence-based sources into a 5-minute video. This study aimed to assess the effectiveness of CoMICs as a pre-lecture resource for enhanced learning.

Summary of Work: This study was conducted at the University of Birmingham and was aimed at first-year medical students. Two CoMICs (Cushing’s syndrome and adrenal insufficiency) in line with the on-going curriculum were created and reviewed by experts. All students were invited to participate. Students who opted in were provided access to the CoMICs a week prior to the lecture. Changes in self-perceived knowledge and reception of the CoMICs were assessed with pre- and post-lecture questionnaires. Differences between the two groups: those who watched the CoMICs before the lecture, and those who did not, were compared using Wilcoxon rank-sum test ($p < 0.05$).

Summary of Results: In total, 88 students completed the questionnaires. Of those, 34 (38.6%) watched CoMICs before the lecture. In both groups, self-perceived knowledge of Cushing’s syndrome and adrenal insufficiency improved post-lecture. Larger improvement was seen in the group that watched the pre-lecture video on both topics ($p < 0.0001$). All participants ($n = 34/34$) found the CoMICs informative and agreed that it covered most important aspects on the condition. Majority [$n = 28/34 (82.4\%)$] enjoyed watching the CoMICs and feedback that they will watch the CoMICs to revise the condition during exam preparation.

Discussion and Conclusions: One of the reasons for CoMICs to be so well received is its concise style. The results provide evidence that CoMICs is an effective pre-lecture resource. CoMICs moved first exposure to the topic before the lecture, reducing in-class cognitive load. This is in line with cognitive load theory, which suggests improved learning engagement when prior knowledge is stimulated. Early introduction may have also encouraged preparatory further reading, shown to result in improved exam performance.

Take-home Messages: CoMICs is an effective pre-lecture resource for pre-clinical medical students, further enhancing knowledge acquisition, as compared to lectures alone.
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ABSTRACT:
Background: Electronic health records (EHR) provide unprecedented access to observational data. Research using EHR data requires a unique set of analytic skills. A curriculum to build these skills can prepare students for EHR-based research. Spaced repetition is an effective learning format with less time and space constraints compared to didactic lectures.

Summary of Work: We created a spaced repetition curriculum consisting of 20 multiple-choice questions covering causality, bias, data integrity, and data representativeness. The study group was 18 medical, nursing, and physician assistant students. Questions were delivered via the Qstream application. Questions were redelivered in 4 days if incorrectly answered, and 1 week if answered correctly. Two correct consecutive answers retire a question. Answer explanations are visible immediately. Participants completed a pre-curriculum and post-curriculum survey assessing their level of confidence and experience with observational data.

Summary of Results: 5 (27.8%) students completed the curriculum. On average, participants attempted 10 questions. There was an improvement of 28% in those who completed the curriculum and 11.94% overall. There was an improvement of 30% in causality, 20.5% in bias, 13.3% in data integrity, and 19.3% in data representativeness. 18.4% had prior experience with observational data. 66.7% of students had little to no confidence in conducting observational data studies. Of those who completed the curriculum, confidence increased by 100% in evaluating causality, 50% in evaluating bias, 25% in data representativeness, 25% in data integrity, and 75% in conducting observational data studies.

Discussion and Conclusions: Based on initial survey, few participants had prior experience with observational data and the majority had minimal confidence in conducting their own studies. Despite limited completion data, there is a trend towards improvement across all four categories and an increase in their confidence levels. Our data suggest that there is a need for an observational data curriculum among healthcare professional students. Low completion rates of the curriculum suggest that it did not meet the targeted needs of the learners. We will return to the targeted needs assessment and adjust the curriculum content.

Take-home Messages: Spaced repetition may be a good delivery modality in improving understanding of observational data. Further work is needed to adjust the curriculum to accurately assess the efficacy.
ABSTRACT:
Background: The concept mapping (CM) approach is increasingly being utilized across medical fields to enhance students Problem-based Learning (PBL) performance. This meta-analysis aims at investigating the effects of CM implementation on PBL Performance.
Summary of Work: Databases including Embase, PubMed, Scopus and ERIC were searched using following terms: (problem based learning or PBL or problem-based learning) and concept map*. Time frame for searched articles was published before 2020 August. Medical Education Research Study Quality Instrument (MERSQI) was conducted for quality assessment. Peer-reviewed journal articles which described or assessed use of CM in PBL within health profession education were included. Other inclusion criteria were original research and written in English. Articles describing theoretical aspects about CM, meta-analysis and systematic reviews didn’t match inclusion criteria. Exclusion criteria were 1) Studies on CM without adopting Novaks and Gowins definition to CM; 2) Articles conducted cohort- or qualitative study; and 3) Studies using self-report inventory for outcome measurement. These comparative studies should contain experimental groups assigned of both PBL and CM sessions and control groups using either PBL or CM or whether PBL nor CM. Statistical analysis was performed with Review ManagerTM vers 5.3. Outcome synthesis was conducted with continuous data type in standardized mean difference (SMD) and 95% confidence intervals.
Summary of Results: Among 178 articles, 21 studies met inclusion criteria. According to exclusion criteria 1), 2), and 3), one, thirteen, and three studies were excluded respectively. Only one randomized controlled trial (RCT) and three quasi-experimental studies were included for meta-analysis, which enrolled in total 458 participants. Among them, 191 participants were in experimental groups who had PBL curricula combined with CM. Other 267 participants in control groups had only lecture-based curriculum or PBL without CM. Quality assessment scores of these four studies ranged 12.5~14 (total 18). Synthesized results indicated a medium effect size (SMD=0.57).
Discussion and Conclusions: Results of this meta-analysis indicate a positive outcome of CM implementation in PBL. However, only four empirical studies on CM usages for PBL were comparative studies which used students academic performances as outcome measures.
Take-home Messages: In PBL curriculum, concept mapping pedagogy is effective to guide students medical knowledge integration and hence to enhance their academic performances.
#EPOD-TL: Teaching & Learning

#EPOD-TL5 Development and Delivery of Concept Maps in Clinical Education: A Symptom-to-Diagnosis Approach (9124)

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ABSTRACT:

Background: The start of a clinician’s journey in acquiring clinical and diagnostic reasoning can be a daunting one. This is because patients often present with a cluster of symptoms without knowing the underlying disease. As clinicians, we are expected to separate key diagnostic features from irrelevant details. Without proper foundation in clinical reasoning, the junior clinician will struggle in processing and applying vast amounts of learnt information in the clinical arena. Through this project, we aim to tackle this struggle by using concept maps which employ a symptom-to-diagnosis approach as opposed to traditional didactic ways of learning individual disease conditions.

Summary of Work: We aim to deliver a series of 50 concept maps on common presenting complaints by end of 2021. Each concept map explores one presenting complaint, identifies key groups of differentials and provides a visual demonstration of the thought processes that help distinguish those differentials from one another. It acts as a scaffold to organise knowledge of individual disease conditions, thus providing a systematic and functional way to approach patients. Concept maps are created by authors comprised mainly of junior doctors, and extensively reviewed by senior clinicians relating to their field of specialty.

Summary of Results: 15 concept map presentations have been produced 3 months into this project, initially targeting the learning needs of first clinical year students. They are then circulated on multiple platforms including Moodle, the medical school’s official virtual learning environment and on this project’s dedicated YouTube channel, with an ever-growing subscribers base averaging over 150-250 views per concept map release. A questionnaire will be released upon completion of concept maps related to the learning objectives of our first clinical year (CP1). The CP1 course will run from March to June and the findings from these questionnaires will be presented on the conference day.

Discussion and Conclusions: In progress and will be presented in the poster.

Take-home Messages: These concept maps unlock its full potential when it is used as a guide in developing one’s path of clinical reasoning, rather than simply being memorised.
#EPOD-TL: Teaching & Learning

#EPOD-TL6 The impact of lecture playback speeds on concentration and memory: A literature review (9719)

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**ABSTRACT:**

**Background:** The information required to be learned and retained by medical students has increased while the number of hours in a day, 24 hours, remains constant. The stress that medical students face has already been highlighted in several studies. This subsequently generated a shift in medical education towards asynchronous streaming of daily lectures as part of the curriculum with variable playback speeds. However, the dearth of literature has prompted us to analyze the effectiveness of playback speeds, principally that of 2x playback speed.

**Summary of Work:** Our objective was to analyze the existing literature research regarding how playback speed affects learning, and to highlight the need for additional research. Using google scholar, a literature search using keywords was conducted until the only relevant articles were populated. When term 2x was applied to the search sequence no results matched this query. Articles were chosen if they discussed using playback speed in the academic setting to measure any performance outcome. Due to the scarcity of literature on this topic, four articles were selected.

**Summary of Results:** One article found that concluded that 1.5 playback speed vs 1x showed either no effect or a detrimental effect on immediate recall when learning novel information. Another study analyzing playback speed and verbal redundancy found that there was no significant difference between 1x, 1.4x and 1.8x on a 10-question posttest. Finally, a study found no difference in 1x vs 1.5x on 2-week information recall.

**Discussion and Conclusions:** The general sparsity of literature, the absence of literature regarding the 2x, and the contradictory findings of what literature does exist highlights the need for further investigation. By utilizing recommendations of the previous literature and applying an environment and material studied by medical students, we believe it is prudent to analyze the effects of 1.5x vs 2x playback speed on memory retention and concentration.

**Take-home Messages:**
1) Memory retention and concentration may be both negatively and positively influenced by lecture playback speed. 2) Comprehension of lecture content is more likely to be diminished with lecture playback speed over 2x.
#EPOD-TL: Teaching & Learning

#EPOD-TL7 Online Lecture in ENT Department during Covid-19 (8421)

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ABSTRACT:

Background: Due to Coronavirus 2019 (Covid-19) pandemic, lectures were provided online for medical students to prevent the contraction of the virus. The students still had interaction with the lecturer via video call during these lectures. Could this be the evolution of medical education?

Summary of Work: The online lectures were given via Zoom for the 5th year medical students in May 2020. For clinical rotation in Chiangrai Prachanukroh hospital, the students were divided into 3 groups: A, B, and C. They visited our ENT department in June, October, and December, respectively. All students had to take the pretest on the first day and the posttest at the end of their rotations, with a full score of 100. Subsequently, the students were given questionaries concerning the online lectures.

Summary of Results: Data from 29 students was analyzed. The pretests mean scores of group A, B, and C were 54.69, 46.14, and 49.75 respectively. The posttests mean scores increased to 77.25, 71.82, 78.40 respectively (p<0.001). There was no statistical difference between the groups both pretest and posttest. The survey showed that 55.2% of the students were happy with the online lecture because of the freedom to study anywhere and anytime. The other 44.8% would prefer a classroom lecture because they felt a loss of concentration and motivation while studying online.

Discussion and Conclusions: The pretest evaluated knowledge retained after the online lecture. According to knowledge retention theory, the last group should have the lowest mean score. Thanks to the internet, the students could review the recorded lecture before rotation by themselves. Therefore, there was no difference in scores between each group. However, not every student liked the online lecture. With the increased posttest score, we believed that the rotation program regained some students concentration and motivation. It is concluded that the online lectures had some advantages for knowledge retention, but it could be more effective if made more engaging for the students.

Take-home Messages: Online or offline, responsibility to study still lies with the student.
Adaptation of one of the stages of the problem-based learning (PBL) method to remote teaching (8757)

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ABSTRACT:
Background: Problem-based learning (PBL) was created in 1969, in Canada. It is a teaching model based on active methodology, in which students take control of their own learning, and work in groups with classmates and with a tutor to achieve their learning objectives. To this end, the process is clearly defined and, even though the steps may vary, they are similar. Given the pandemic context, there was a need to adapt tutorial sessions to digital platforms.

Summary of Work: The digital format offers challenges once the lack of face-to-face contact can result in the disruption of interaction with consequent loss of the learning experience. Thus, the fourth stage of the tutorial (Maastricht seven-jump process) was adapted to remote teaching to overcome these difficulties. The experiment was conducted with second-year medical students during the last academic semester of 2020. The proposed adaptation aims at improving the groups dynamic.

Summary of Results: In order to adapt the fourth stage, the traditional dynamic was replaced by a series of questions about what students had the most difficulty in developing during brainstorming. Each student proposed a relevant question, alternating among themselves, until they had no more doubts. The selected questions were assembled to provide an overview of what was discussed and what still needed to be studied, guiding the development of learning objectives. This technique stimulated attention and induced student participation in the development of the abstract.

Discussion and Conclusions: By using the proposed adaptations, students perceive the gaps in the groups knowledge and are encouraged to seek answers to the collective doubts during their individual studies. In the pandemic context, these kinds of dynamics are essential to keep students motivated and to promote interaction between group members.

Take-home Messages:
- Exceptional circumstances require the adaptation of well-established processes.
- The authors indicate the need for further studies for a better assessment of the technique used.
- At first glance, the change seems to have positively affected student performance in remote learning.
- Thus, the authors recommend this dynamic permanently for online tutorial sessions.
ABSTRACT:
Background: Teaching strategies have an important role in student learning. Learning occurs when the learner plays the main role in the process of learning; especially when teaching in small groups can foster an active environment of learning for all students at each level of intelligence or mental ability. This study aimed to compare the effect of the two teaching methods of JIGSAW and lecturing, on the learning and Sustainable learning rate of emergency medicine students.
Summary of Work: This is a quasi-experimental study that was conducted on all of the third semester of emergency medicine students (n=30) in Boroujen nursing School. The content was divided into two sections based on the opinions of specialist professors. One part was trained using the JIGSAW method and another part was trained through a traditional method. Pre-test and post-test were performed in the classroom by Kahoot software. Assessment of learning rate and Sustainable learning was done when holding final exams and three months after final exams. Questionnaires of demographic information and exams of internal emergencies were used to gather data. Data were analyzed by comparing the mean scores of students using the paired t-test by SPSS software version 11.
Summary of Results: The results of this study showed that mean difference of scores of students in the two methods; lecturing (16.25±2.80) and JIGSAW (18.25±1.92), in the first stage exam, was statistically significant. In addition, three months later, the mean difference of student scores in the JIGSAW method (17.99 ± 0.89) compared to the lecturing method (10.11 ± 1.73) was significant.
Discussion and Conclusions: The findings showed that since training through the JIGSAW method focuses on the active participation of students and is student-centered learning and readout, it increases student proper learning and deep perception. Using this teaching method to teach students in emergency medicine is recommended for professors and training programmers and essentially needs that they use what they have learned over the whole duration of their work.
Take-home Messages: The uses of educational methods that are favored by the current generation (Collaborative learning, flexibility in class formation, playing, and competing with software tools) can lead to active participation, motivation, and interest in students.
How to create a comfortable atmosphere when discussing medical education related issues through the World Café model? (8517)

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ABSTRACT:
Background: Creating a comfortable atmosphere during discussion by the World Café model is important but not easy. Particularly, the issues are related to medical education. Here, we used qualitative analysis to investigate how to create a comfortable atmosphere during discussion by the World Café model.
Summary of Work: The World Café workshop was organized on January 22, 2021. All the medical staff were welcome. The time of workshop was designed for 3.5 hours. Four issues related to medical education were discussed. A focus group interview was made after the workshop. The observation records and verbatim transcripts of the interview were studied by qualitative analysis.
Summary of Results: Twenty-three medical staff (20 females and 3 males) attended the workshop. Eight participants (4 medical educators and 4 trainees) with first-time joining World Café course agreed to be interviewed after the workshop. The time of interview was 40 minutes. We found that a comfortable atmosphere can be created through: 1. Acceptance: Everyone can express their opinions and these opinions are precious and cannot be criticized. 2. Warmth and peace: Everyone’s opinions are valued, and the sharing is not for persuading others or defending their positions. 3. Relaxation: Everyone can speak freely without worrying about saying the wrong thing.
Discussion and Conclusions: A comfortable atmosphere should be acceptance, warmth and peace, and relaxation. Under the comfortable atmosphere, the participants can fully express their ideas and integrate discussion for problems solving.
Take-home Messages: 1. A comfortable atmosphere should be acceptance, warmth and peace, and relaxation. 2. Under the comfortable atmosphere, the participants can fully express their ideas and integrate discussion for problems solving.
ABSTRACT:
Background: Digital pedagogy enhances the concept of education in health care. Previous research suggests that learning clinical and general skills can be improved by diverse digital methods, but research on the topic in Speech and Language Pathology (SLP) is still scarce. Design-based learning where students are actively involved in the developmental process has not been utilized sufficiently. The current study aimed to develop digital learning methods to improve the concreteness of learning abstract skills.

Summary of Work: We developed two digital pedagogical solutions: a digital video data bank for learning to analyze the atypical features of speech and interaction, and a chatbot to guide scientific writing. The development utilized design-based learning in which pedagogical solutions progress in cycles of design and participatory testing. Questionnaires were collected from students in two iterations regarding the chatbot (N=30) and the video based learning (N=30). The first iteration focused on students learning needs and the second on their learning experiences. We were specifically interested in students opinions on learning to use videos in order to analyze the atypical features of speech and interaction. Furthermore, we aimed to find out how students experience the scientific writing guidance of the chatbot.

Summary of Results: Results suggest that video-based learning can improve students clinical skills and a well-designed chatbot can respond well to accurate learning content. Teaching chatbots is time-consuming, as its ability to utilize background data is not yet sufficiently developed especially for small language groups like Finnish.

Discussion and Conclusions: The rapid growth of pedagogical technologies challenges the design of learning. Thus, vivid connections with students at different stages of the design process are crucial to improve the digital solutions. Consequently, design-based learning is an effective and recommendable method to engage students and to increase the quality of digital pedagogy in higher education.

Take-home Messages: Design-based learning is an effective and recommendable method to engage students and to increase the quality of digital pedagogy in higher education. Video-based learning can improve students clinical skills and a well-designed chatbot can respond well to accurate learning content.
#EPOD-TL: Teaching & Learning

#EPOD-TL12 Influence of group size on participant learning during cardiopulmonary resuscitation courses - a qualitative analysis (8180)

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ABSTRACT:
Background: Cardiopulmonary resuscitation courses are usually instructed in small groups. The optimal group size is currently under debate, as economic considerations often must be balanced with educational quality parameters. Another study by our research group (unpublished, currently submitted) showed that above an instructor to participant ratio of 1:6, the instructor is unable to detect 80% of obviously made cardiopulmonary resuscitation quality errors. Another aspect of consideration in this debate is, what effects different group sizes have on the learning of participants. Therefore, we performed this qualitative analysis.

Summary of Work: Instructors and simulated cardiopulmonary resuscitation course participants, who had participated in the previous study, were invited to participate in focus groups. All had experience with different group sizes. To explore the effects of group size on learning of course participants, open-ended questions were used. To enable transcription focus groups were videotaped. Transcribed interviews were then analysed by two researchers who followed the thematic analysis approach.

Summary of Results: Seven focus groups were performed, 18 instructors and 13 simulated course participants agreed to join. In small groups, participants appreciate the possibility to ask more questions and stay more engaged throughout the course. Smaller groups had a more familiar atmosphere, which was highly appreciated. Higher self-confidence of course participants to be able to use the learnt skills in reality was also mentioned for smaller groups. In contrast, in larger groups participants get easily distracted or remain overall more passive. It is easier to stay anonymous in a larger group which diminished motivation to stay engaged. Additionally, instructors were concerned about the limited time for each student in larger groups, for teaching as well as for performing individualised feedback.

Discussion and Conclusions: Both, instructors and students prefer smaller groups during cardiopulmonary resuscitation course. Smaller groups ensure participant engagement and give the participant the opportunity to ask more questions; instructors appreciate having enough time for teaching and feedback in small groups.

Take-home Messages: Smaller group sizes in cardiopulmonary resuscitation courses ensure higher participant engagement and subjectively perceived instructor effectiveness.
#EPOD-TL: Teaching & Learning

#EPOD-TL13 A new perspective: Using a goldfish bowl technique to simulate a Liaison Academic Tutor meeting for level 7 apprentices (9741)

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ABSTRACT: 
Background: The diverse range of Allied Health Professionals and Nursing students registered on the MSc Advanced Clinical Practitioner apprenticeship are faced with challenges additional to those faced by students registered on a traditional MSc programme.

Summary of Work: The aim of the workshop was to provide the delegates with a clear view of a Liaison Academic Tutor (LAT) meeting by observing a simulated meeting using authentic players in order to demonstrate the major difference between a standard MSc programme and the apprenticeship. A LAT meeting involves the apprentice, a university and an employer representative. The role play demonstrated the tripartite nature of the meeting, the purpose of the Commitment Statement and the number of elements of the Portfolio of Evidence (PoE) that the apprentices must complete in order to prepare for the End Point Assessment (EPA). The EPA allows the apprentice to showcase the skills gained throughout the programme. As each element was discussed; case studies, reflections, change reports and Off the Job Training (OJT), the templates and requirements for each were provided to the delegates.

Summary of Results: The intended outcome of the workshop was to enable delegates to gain an understanding of the challenges encountered by this group of students as they balance the demands of study with that of full-time employment. The delegates gained an understanding of the requirements of the apprenticeship and the negotiations that are necessary between all three contributors.

Discussion and Conclusions: Development of the PoE is vital in enabling the apprentices to demonstrate how they have met all the standards required before progressing to the EPA. The workshop was an effective method of disseminating information to apprentices and employers who have little knowledge and understanding of the practical aspects of an apprenticeship.

Take-home Messages: The fishbowl technique was helpful in facilitating discussion between the apprentice, the employers and university staff in gaining an understanding of the practical aspects of an apprenticeship.
ABSTRACT:

Background: Nursing has based its practical profession. Through embodiment learning and practical experience, knowledge, attitudes, and skills can enlighten the meaning to the students. The learners competence could be developed through rich practical experience. As educators in nursing, we need to create a situation for the beginner students to deepen their learning especially nursing core courses. The study purpose was to use embodiment learning as a teaching method to help students experience the meaning of the nurse roles and understand the patients needs and perceptions.

Summary of Work: This was a qualitative research design using phenomenological reflective analysis. Six scenarios for students to experience included arm fracture fixed with a triangle scarf, leg fracture walking with crutches, lying in bed using diaper and restraint, lying in bed keeping right leg straight with sand bag pressed at groin, intravenous infusion with normal saline on wrist, on low residue diet. In each scenario, the student served as a patient, and then changed the role as a caregiver, and wrote down their perceptions, experiences, observation, and reflection of experience. We collected 36 students reflective writing and analyze the descriptions and reflections of embodied experiences.

Summary of Results: Each student played the role as a carer and a cared-for. As students enacted a cared-for, three themes were inducted: balance between the autonomy and caring; body is my teacher; perceiving patients not only with the body but mind needs. As students enacted a carer, another three themes were inducted: perceptions of being needed; provision of care is not easy; being present is honored.

Discussion and Conclusions: Students learned that it is important to maintain balance between the autonomy and caregiving. They became closer to patients from body experience and perception. Students could consider patients as a whole person, and confirm the existence of him/herself. Although provision of care is not easy, students felt honored for being present with patients. Only serve as a patient, then you know the real needs of patients.

Take-home Messages: Our body is a good and marvelous teaching material. Embodiment learning can be used to improve students intersubjectivity, and empathy, and enlighten them to think about how to become a nurse.
#EPOD-TL: Teaching & Learning

#EPOD-TL15 Use of the Parallel Curriculum in Preclinical and Clinical Medical Education (9804)

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**ABSTRACT:**

**Background:** The parallel curriculum consists of third-party learning resources (TPR) which students access on their own. Primary learning resources are curricular materials that are medical school directed or provided. TPR use has grown exponentially. As these often require payment, they can promote an achievement gap between those who can afford them and those who cannot.

**Summary of Work:** The online survey is a cross-sectional study at the University of Pittsburgh School of Medicine (UPSOM) recruiting 137 fourth-year medical students (MS4). Student information is de-identified prior to data analysis. The study received IRB approval. Surveys include questions about demographics and TPR used for learning microbiology and Internal Medicine (IM) content. TPR used are expressed in the percent of responding students using them. Time spent using TPR is expressed in percent of the total study time using these resources (e.g. 0-100%: TPR never used - used exclusively).

**Summary of Results:** Of 137 MS4s, 56 responded to the survey (41% response rate). The most used resource for the preclinical Microbiology course was Sketchy (91%). The most used resources for studying microbiology content for USMLE Step 1 and applying microbiology to patient care was UWorld Step 1 (91% and 75%, respectively). MS4s spent more time using TPR for the preclinical Microbiology course (average 58%, standard deviation (SD) 29), USMLE Step 1 (average 95%, SD 14), and applying microbiology to patient care (average 78%, SD 24). The most used resource for IM clerkship presentations and applying IM to patient care was Uptodate (86% and 89%, respectively). The most used resource for the IM subject exam was UWorld Step 2 CK (98%). MS4s spent more time using TPR studying for the IM clerkship (average 78%, SD 26), IM subject exam (average 87%, SD 21), USMLE Step 2 CK (average 95%, SD 11), and applying IM content to patient care (average 71%, SD 24).

**Discussion and Conclusions:** Our data show that UPSOM MS4s spent more time with TPR than Microbiology and IM curricular course materials on multiple domains, especially when studying for standardized exams.

**Take-home Messages:** Knowing the specific resources students use and prefer can help faculty evaluate them for quality, learning theory, highlight deficiencies, and equitable access.
#EPOD-TL: Teaching & Learning

#EPOD-TL16 Use of and perception regarding social networking sites among female medical students (8290)

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ABSTRACT:
Background: We aimed to investigate the use of social networking sites (SNS) among female medical students and their perception about these sites.

Summary of Work: This prospective study was carried in the University Medical and Dental College (UMDC), The University of Faisalabad (TUF), Faisalabad, Pakistan, from January to March 2020. An online questionnaire was circulated as a web link. Medical students from first to final year MBBS were invited to participate.

Summary of Results: A total of 428 responses were received from the participants. About one-third of the participants, 169 (39.5%), were day-scholars, and 259 (60.5%) resided in the college hostel. Many participants, 165(38.6%), were using four SNS, and 138(32.2%) were using three, 95(22.2%) were using two, and 30(7%) were using one. The majority of the participants, 400(93.5%), considered SNS are beneficial in education. Regarding the impact of SNS on teaching and learning, 269(62.9%) stated positive and 69(16.2%) very positive, while 58 (13.3%) considered it negative. Half of the participants used Facebook (FB) 212(49.5), followed by YouTube, Google, Twitter, and others. Almost half of the respondents, 226(52.8%), stated that they often use SMS for educational work while 175(40.9%) rarely used, 24(5.6%) never used for educational purpose. One-third of the participants, 135 (31.5%), spent two hours/day on SNS, and 114(26.6%) used it one hour/day, and 107(25%) spent 3 hours/day. Most of the respondents, 352(82.2%), believed that SNS gives career information. Use of YouTube, Twitter, and Google were common in first and third-year students, while FB was common in final-year students (p<.001). The fifth-year students stated that SNS is more effective in communication with teachers, while most first-year students opposed this idea (p<.001).

Discussion and Conclusions: The use of SNS was common among our study participants, and they are utilizing these for various purposes. Judicious and purposeful usage of SNS is a very useful and effective tool for medical students.
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ABSTRACT:
Background: Covid-19 has brought about a seismic shift towards online medical education. Webcam use in small group sessions presents novel challenges to educators. As engagement is linked to academic performance, the aim of this work was to explore the perceptions of learners regarding use of webcams and the impact on self-reported engagement.

Summary of Work: A questionnaire comprising quantitative and qualitative items was distributed to 3rd and 4th year medical students undertaking medicine and cancer care small group workshops. Survey items were generated and revised following a literature review. A pilot questionnaire was run to ensure clarity of items. A thematic analysis of qualitative results was undertaken, and a thematic map constructed. This project was undertaken as a Practitioner Inquiry in the context of a PGDip in Medical Education.

Summary of Results: 96 students responded (response rate 77%). 67.7% (n=65) of participants preferred to keep their webcams off during online small group teaching. 58.3% (n=56) of participants reported that having a webcam on resulted in them being more or much more engaged than having it off. Qualitative results revealed intrinsic and extrinsic themes relating to webcam use. Subthemes which threatened or promoted engagement were behavioural, psychological and socio-cultural. Distraction was a major intrinsic, behavioural theme. Whilst some participants reported that webcam use reduced off-task behaviour, other participants found webcam use distracting from intended teaching. Anxiety was a prominent intrinsic, psychological theme; self-awareness of appearance and environment hindered engagement. Participants noted tutors variable capability of generating an engaging or threatening online learning environment.

Discussion and Conclusions: In this context, results demonstrate that engagement in an online educational setting is a complex construct, intimately tied with learner and educator perceptions, group dynamics and student-tutor interactions. The utility of interaction through webcams is underpinned by social cognitive theory, social constructivism and active learning, however, learner autonomy may be lost through webcam use and the intrusion of privacy may result in reduced psychological safety. The webcam is a powerful tool that can promote or threaten engagement.

Take-home Messages: Understanding the multi-faceted factors that influence engagement in online education can empower learners and educators to facilitate the continued delivery of excellent online education.
#EPOD-TL: Teaching & Learning

#EPOD-TL18 National virtual ophthalmology course for medical students: The norm for the future? (9462)

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ABSTRACT:
Background: The COVID-19 pandemic in the year 2020 has inadvertently led to a great increase in the use of virtual platforms for medical education globally. Medical students have a wide-ranging exposure to ophthalmology across the United Kingdom, where ophthalmology placements varies from a few weeks to a few hours in some medical schools. We organized a virtual, national ophthalmology course for medical students and sought feedback before and after the course.

Summary of Work: The aim of the course was to help medical students understand the diagnosis and management of common ophthalmic emergencies. Students from all medical school years in the U.K. were invited via emails from their medical school, university societies and through social media. Delegates completed a pre- and post-course survey to gather demographic information, as well as quantitative and qualitative course feedback. The online course was free and delivered over 1.5 hours through a videoconferencing software. The session employed an interactive case-based learning approach, during which, students were asked questions and discussed answers.

Summary of Results: 394 students from 16 medical schools in the U.K. responded to the pre-course survey. Although students from all years completed the survey, majority (46%) were final year students. The students had a range of 21 specialty preferences they hoped to specialize in. 62 students from 12 medical schools completed the post-course feedback. The students had overwhelmingly expressed an improvement in confidence across all subject areas taught in the course (p<0.05). Greatest improvement in confidence was seen in recognition and management of hyphaema, keratitis and acute angle-closure glaucoma.

Discussion and Conclusions: Virtual courses can be a cost-effective, convenient and efficient way of delivering high quality teaching to many students across the country. We believe the virtual platform is the future of medical teaching. We are in the process of expanding the course to include more topics and reach a wider audience.

Take-home Messages: Previous studies have identified variable coverage of certain specialties, such as ophthalmology, by medical curriculums, with some students receiving little education; national virtual courses can be a cost-effective method to address these learning needs among medical students.
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ABSTRACT:
Background: The COVID-19 pandemic saw many face-to-face courses and teaching programmes cancelled. The use of online platforms were minimal, largely due to perceptions that virtual teaching is not engaging and interactive. We present an example of a virtual teaching programme and discuss its advantages and why it should remain a well-used platform even after face-to-face meetings resume.

Summary of Work: We organised a teaching programme consisting of a one-hour-long session delivered over Zoom. Participants were encouraged to interact with the tutors on the live chat feature and via Slido, an online anonymised live voting application. Sessions concluded with a live Q&A.

Summary of Results: 145 participants from London, Birmingham, Southampton, Norwich, Portsmouth and Wessex attended the course. 128 participants agreed or strongly agreed that they enjoyed the style of delivery of the sessions. Free-text feedback includes: - Excellent engagement with the use of online poll platforms - Great use of cases with questions on slide - thoroughly enjoyed and I was encouraged to engage throughout the session! - Good interaction with the audience. - Great use of quizzes - much more engaging

Discussion and Conclusions: We present a case demonstrating the advantages of virtual teaching sessions. Firstly, it enables wider participation that does not confine sessions to geographical location. It allows for expansion of a session and is not limited by venue size. Secondly, we demonstrate that virtual teaching is engaging and interactive. Anonymised live polling is likely less intimidating than face-to-face questioning. It serves a dual function of engaging the participants while enabling the tutors to gauge their understanding. Thus, virtual sessions mirror face-to-face sessions where tutors can modify their sessions based on their audience, distinguishing them from pre-recorded lectures. Thirdly, virtual teaching is convenient for participants and tutors. Tutors found virtual teaching efficient and easy to employ. To run this seamlessly, a technical moderator was required in addition to the tutor to manage Zoom, moderate live chat and assist in running Slido polls.

Take-home Messages: Post-pandemic, virtual teaching should continue or be delivered alongside face-to-face sessions. The advantages are clear - widening participation, increased accessibility, reduced physical logistical planning and increased efficiency, while maintaining interactivity, audience participation and live feedback.
#EPOD-TL: Teaching & Learning

**#EPOD-TL20 Effectiveness of a flowchart-based and pathophysiology-focused online learning resource for medical students (8155)**

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**ABSTRACT:**

**Background:** The Calgary Guide to Understanding Disease is a novel web-based medical education resource founded in 2012 that has been accessed by over 485,000 users from over 181 countries, with over 2500 daily users as of January 2021. With a resurgence in discussion around basic science in medical education, the Calgary Guide is perfectly positioned to address these needs.

**Summary of Work:** This project aims to critically evaluate the role of the Calgary Guide to inform future developments to best address the current needs of medical education. The study was conducted in the Cumming School of Medicine at the University of Calgary. Medical students from the class of 2021, 2022 and 2023, were invited to participate in an anonymous online questionnaire, soliciting both quantitative and qualitative responses.

**Summary of Results:** In the survey (n=106), 86.5% of participants would recommend the Calgary Guide as a resource to other students. In particular, participants found that the Guide demonstrates relationships between concepts (80.0%) and is valuable as a learning resource for medical students (80.1%). The user base significantly increased during the pandemic. Comparing the same March to January window in 2019 and 2020, there has been significant usage increase in 2020, with the active user base quadrupling from 87115 to 340638.

**Discussion and Conclusions:** Overall, medical students found the Calgary Guide an effective resource in their studies. The participant responses have been overall positive, with 90.5% of participants agreeing that it is a valuable resource for students. The Calgary Guide helps with memory retention (72.6%), with a format that is easy to use (87.0%), and was found to be a time-saving way of learning (p=0.002). During a time when online learning becomes more prevalent due to the effect of the recent Covid-19 pandemic, the Calgary Guide served as an important supplement to students learning.

**Take-home Messages:** The Calgary Guide is a valuable learning tool for students, as it serves to integrate basic science and clinical medicine, aid with long-term knowledge retention and organize information in the flow chart form. It is evident that the Calgary Guide has an important role in facilitating students learning.
Incorporating learning science instructional approaches to enhance student outcomes in a large, completely asynchronous online medical terminology course (8979)

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ABSTRACT:

Background: Online instruction within higher education is a growing trend. Completely asynchronous online courses occur without real-time components, which can potentially isolate students from their instructors and classmates, having a negative impact on student learning. Student-centered teaching strategies based on learning science may improve student outcomes in asynchronous online courses. Strategies including retrieval practice, timely and specific feedback, promoting metacognition, and contextualizing learning activities within an authentic context may enhance online engagement. These strategies were used to modify a large, asynchronous online medical terminology course. The purpose of this study was to evaluate the effects of modifications on student performance, satisfaction, and engagement.

Summary of Work: This prospective, quasi-experimental study included consenting students enrolled in the experimental (n=288) and control (n=217) courses. Overall course design, size and assessments were consistent between the courses. The experimental course included modifications aimed to increase peer-to-peer interaction, instructor presence, and contextualized language use. No changes were made to the control course. Outcome measures included student performance (exam scores and overall course grade); satisfaction (follow-up survey); and engagement (Student Engagement in School Scale, SESS). Students completed the SESS at the start and at the end of the semester. To identify potential effects on engagement, analysis of covariance analysis was implemented, while t-tests were used to examine exam, course grades and satisfaction.

Summary of Results: Average overall course grades and course satisfaction were significantly higher in the modified versus control course. There were no significant differences between exam scores or any engagement domain.

Discussion and Conclusions: Students in the modified course earned higher overall course grades and reported higher satisfaction levels. The modified course did not show evidence of significantly improving student engagement or exam scores. One explanation for these findings is that students enjoyed the modifications, allowing them to earn higher course grades, but the modifications did not better prepare them for exams. Future research should focus on using modifications to prepare students for summative assessments.

Take-home Messages: Modifications based on learning science resulted in greater student satisfaction and improved overall course grades. Summative assessment grades did not change as a result of these modifications.
#EPOD-TL22 Utilizing Game-based Learning Platform and Mobile Applications to Enhance Learning in Medical Education (8528)

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ABSTRACT:
Background: Both medical learning and education are evolving. Education programs need to incorporate with multimedia, games, mobile applications, and virtual simulations together to enhance learning. At the same time teachers find out that multimedia present opportunities and challenges for teaching. This study is designed to demonstrate how to launch a class with commercial game-based learning platform and to evaluate the impact in medical education.

Summary of Work: We used game-based learning platform and mobile applications with 338 participants. First, we designed a case-based thinking process, algorithm and utilized the commercial website (Kahoot!) to create a quiz game. Participants joined the game anonymously by using their own mobile application. We briefly introduced the basic knowledge first and then started the quizzes. After every quiz, they knew the correct answer(s), their own score and open for discussion. Participants were all asked to finish the questionnaire anonymously. We also performed pre-test and post-test in 124 participants.

Summary of Results: This study had 388 participants, included medical students (N=155), postgraduate year (PGY) doctors (N=67), and residents (N=116). The questionnaire includes 5 questions and each question has 5 different scores (from 1 to 5). Among 388 participants, the mean score of the class time management was 2.962; enhance clinical confidence was 3.97; level of participation was 4.858; level of concentration was 4.861, and level of satisfaction was 4.941. Notably, there were significant lower scores among medical students and others in enhance clinical confidence (P=0.004), level of participation (P=0.002), level of concentration (P=0.001) and level of satisfaction (P=0.0001). The pre-test and post-test showed significant improvement in all 3 questions (All P value<0.05)

Discussion and Conclusions: Game-based Learning platform is easy to utilize in classes and results in high satisfaction among medical students, PGY doctors, and residents. But only 5 to 10 minutes of brief introduction, lack in basic knowledge, and higher level of technological literacy among medical students would contribute the significant lower scores of the clinical confidence, concentration, and satisfaction.

Take-home Messages: 1. Using game-based learning platform and mobile applications enhance learning. 2. Pre-test and post-test showed significant improvements 3. High scores in questionnaire. However, lower scores among medical students. 4. Interview to improve teaching program
#EPOD-TL23 Mobile Learning in Medical Education: A Scoping Review using Arksey and O'Malley framework (9646)

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ABSTRACT:
Background: A scoping review of mobile learning in medical education was conducted to guide the author for a more in-depth literature review for a Ph.D. study.
Summary of Work: A framework proposed by Arksey and O'Malley was used to conduct a scoping review. The objective of the review is to get an overview of mobile learning in medical education. Two electronic databases (MEDLINE and Scopus), reference lists, and some medical education journals were used to search the articles. The study population was limited to medical students in clinical placement. Empirical studies from academic journals, written in English, and published between 2010 and 2019 were included in the review. The relevant information from the selected papers was extracted and recorded in a tabular matrix format. The findings were summarised and reported in a narrative account.
Summary of Results: An initial search identified 520 papers, and after applying inclusion criteria, 42 papers were selected for the final review. Of 42 studies, 63% were quantitative studies, 23% were mixed-methods, and 14% were qualitative studies. The geographical distributions showed that 75% were conducted in developed countries, and 25% were conducted in developing countries. Portability and any-time, any-where access to search for relevant information were the most commonly mentioned benefits. Distraction by social media, concerns of privacy, security, and confidentiality of patient information, and educators negative attitudes towards students were the most commonly encountered challenges. Mobile apps about drug information and clinical guidelines were the most commonly used apps in clinical settings. Eighty percent of studies in the review focused on the application of mobile devices, and only 20% investigated how mobile devices assisted students to learn in clinical settings. Four different mobile learning behaviors (contextual, cross-contextual, self-regulated, and personalized learning) were identified.
Discussion and Conclusions: Medical students have been using their mobile devices to support or supplement their learning, and there is evidence of the positive impacts of mobile learning. However, the lack of explicit instruction on mobile devices use may lead to unprofessional behaviour and criticism from clinical instructors.
Take-home Messages: The effects and experience of mobile learning among medical students in clinical placements need to be explored further, especially in developing countries.
#EPOD-TL24 Head-mounted cameras as innovative high-tech feedback method in medical education - a randomized controlled trial (8185)

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ABSTRACT:
Background: Some evidence suggests beneficial effects of feedback which integrates the learners perspective on the promotion of simulation-based learning.1 However, viewing first-person-view videos as such learning-tool in simulation-based medical education has not been systematically researched yet. This randomized controlled trial was conducted to determine whether viewing a 10-minute first-person-view video improves performance of fifth-year medical students in a simulated resuscitation scenario.

Summary of Work: The trial was performed within a course of emergency medicine at the Medical School of the Technische Universität München. In teams of four, undergraduate students were confronted with a simulated, video-taped resuscitation scenario (pre-test). During this scenario, each participant created his own first-person-view video with a glasses-mounted camera. Afterwards, teams were randomized to get either a 30-minute instructor-led debriefing of the scenario (control; n=12) or a 20-minute instructor-led debriefing plus 10-minute presentation of their own first-person-view videos of the previous situation (intervention; n=12). Subsequently, all teams performed a second resuscitation scenario (post-test). To operationalize resuscitation performance, effective compression ratio (ECR) was calculated from manikin data, and team performance parameters were extracted from the video-taped scenarios.

Summary of Results: ECR improved from pre- to post-test scenario (ECR 0.13 ± 0.11 vs ECR 0.19 ± 0.11), but the difference between intervention and control group was not statistically significant. Overall, replacing ten minutes of debriefing with watching the first-person-view video did not significantly impact any of the recorded parameters. However, the novel method integrated seamlessly in the course concept and was well accepted by the participants.

Discussion and Conclusions: Viewing the previously recorded personal first-person-view video combined with instructor-led debriefing did not significantly affect improvement of resuscitation performance in a simulated resuscitation scenario compared to an instructor-led debriefing of the same total duration. Ultimately, students of the intervention group did not perform worse despite missing time of instructor-led debriefing.

Take-home Messages: Further research is needed to determine the ideal conditions for first-person-view videos to be an effective tool in simulation-based medical education.
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ABSTRACT:
Background: On-line education is increasingly popular at all levels of study, including postgraduate. Gaining an understanding of the experiences of online learners can lead to improved provision and support in course and can be applied in other comparable situations, for example the development of a new course. The course in Tropical Medicine & Hygiene at the University of Glasgow is a nine-month course that prepares individuals with a primary medical qualification for the professional qualification of Diploma in Tropical Medicine & Hygiene, which is awarded by the Royal College of Physicians in London. The course has been running as an on-campus part-time course for 20 years with small student numbers. To accommodate a growing interest in the course and to offer maximum study flexibility, in 2015 the course was converted to a blended model. The majority of content is taught asynchronously online in weekly blocks, with a core on-campus laboratory teaching week. Fortnightly live online tutorials consolidate learning. The blended course attracts a diverse and international group of students, at various career stages and with a range of professional interests. Anecdotal evidence gathered over three years suggests that there are wide differences with respect to the student experiences, including confidence in how they interact with the online environment.

Summary of Work: This study explores how diverse learners experience the online elements of this blended course, focusing on the active learning components.

Summary of Results: This study is ongoing. Initial aims are to evaluate the experience of the course participants using an online survey. The survey includes questions related to previous online learning experience, the use of digital technologies, interaction with, and confidence in using the active learning activities on the course VLE. The survey is followed up by interviewing a small number of participants to gain a more in depth understanding of their learning experiences.

Discussion and Conclusions: Data collection phase for the final year of the study is ongoing and a full analysis of the data will be undertaken after abstract submission.

Take-home Messages: Very preliminary findings suggest that students in an online learning environment experience similar barriers to active engagement as students in an traditional on campus setting.
ABSTRACT:

Background: During the COVID-19 pandemic, distance learning has emerged as an alternative method of teaching to maintain the continuity of clinical medical education. Before the pandemic, distance learning was not routinely used in hospitals as a modality for education. This study aims to explore the situation of distance learning among health care providers (HCPs) during their clinical courses in the hospital and to investigate advantages, challenges, limitations, satisfaction as well as perspectives for this approach to learning.

Summary of Work: This cross-sectional study was based on a questionnaire that was designed and delivered to HCPs (faculties, nurses, medical students and nursing students) in Taipei City Hospital.

Summary of Results: A total of 375 participants (96 faculties, 93 PGY doctors, 94 healthcare providers and 92 nursing students) have completed the questionnaire. 332 students (88.5%) have participated in distance learning during COVID-19 pandemic. The overall satisfaction in medical distance learning was 76.7%, and it was significantly higher in participants with previous experience in distance learning. Regarding reported benefits of distance learning, 88.2% reported having multiple advantages including time-saving, time flexibility, and improved interaction with instructors. Only 3% reported no benefits in comparison with traditional learning. 67.6% of students agreed that instructors were actively participating in their discussions.

Discussion and Conclusions: With advances in technologies and social media, distance learning is a new and rapidly growing approach for health care providers. It might represent a solution to maintain learning processes in exceptional and/or emergency situations like COVID-19 pandemic. This pandemic has provided educators with an unexpected opportunity to push forward innovations in medical education.

Take-home Messages: In this uncertain pandemic era, we can be certain that medical education will never be the same. Distance learning has emerged as an alternative method of teaching to maintain the continuity of clinical medical education. Medical education has been significantly disrupted and changed. Requiring educators and learners to adapt to learning at a distance while aiming for normality. When used optimally and despite their inherent limitations, virtual tools can be used by both learners and educators to achieve a shared goal of providing effective and efficient medical education to train our next generation.
EPOD-TL: Teaching & Learning

EPOD-TL27 Distance online learning in clinical-year medical education during COVID-19 pandemic in Southern Thailand: Students’ perspectives and satisfaction (9579)

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ABSTRACT:
Background: Due to COVID-19 pandemic, all educational activities in Thailand have been affected including medical education. Distance online learning (DOL) has been immediately initiated to replace the class-based learning during the starting of academic year. This study aimed to evaluate the clinical-year students perspectives and satisfaction for this learning.

Summary of Work: DOL included lectures, clinical reasoning tutorial, case-based and team-based discussion has been initiated in the first two weeks in August 2020. This cross-sectional study is based on the electronic questionnaire that was delivered to the first and second clinical-year students. The students perspectives and satisfaction for this online learning were analyzed.

Summary of Results: A total of 149 students have completed the questionnaire, accounting for 56% responders. The overall satisfaction rate in DOL was only 18.8%. The main reason for unsatisfactory was time-gap between DOL and workplace-based learning, resulting in poor clinical correlation. Most of students (58.4%) had no experience in DOL. The benefits of DOL included flexible of class time (59.1%), time saving (57.0%) and more relax (49.0%). The drawbacks included poor interaction with classmates (75.2%), need more attention (63.1%) and poor interaction with instructors (59.7%). Poor internet coverage (71.8%), instructors unfamiliar with DOL (65.8%) and variation in learning platforms (57.0%) were the main barriers. The students agreed for lecture-based DOL (66.4%), but not for clinical skills session (89.9%). Blended approach (traditional class-based and DOL) was preferable for future learning methods.

Discussion and Conclusions: DOL has emerged as a new method of learning to continuity of medical education during the COVID-19 pandemic. It has been reported to easier and more effective access and allow personalized approach in learning. Lack of infrastructure, internet access, as well as limited technological knowledge of instructors are examples of barriers. Our study showed the results compatible with previous studies. Although students are unsatisfied with this method, they believe that a blended approach will be suitable for future medical training.

Take-home Messages: DOL is a new method of learning during COVID-19 pandemic. According to the advantages of this learning, it should be implemented in medical education. However, the barrier, particular, infrastructure, internet access and educators knowledge in technologies are major challenges in successful of implementation.
#EPOD-TL: Teaching & Learning

#EPOD-TL28 Adaptation of a campus-based microbiology course to a digital distance-based course due to the SARS-Co2 pandemic (9740)

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**ABSTRACT:**

**Background:** Due to the current SARS-Co2 pandemic many of the courses during the 2020 changed into distance-based learning. One challenge with the changes was the examination. The exams were done digitally on distance, to ensure that students were not cheating, the examination time was shorter and the possibility to go back and review the answers was removed. Both of these changes make it more difficult to cheat, but it may also cause more stress. Since the ability to endure stress is not an intended learning outcomes in most courses, instead a different approach was decided on. This approach was based on recorded lectures, detailed intended learning outcomes, quizzes and workshops and finally examined by a written take-home examination with an oral follow-up based on the take-home examination.

**Summary of Work:** The study compared the grades on the major course assessment for the students who performed the course in 2020 (n=43) with the distance-based format with the previous year 2019 (n=43) with the campus-based format. In addition, an extended course evaluation form was used to study the students’ satisfaction with the course format.

**Summary of Results:** The pass rate in year 2019 was 28% and the pass rate in 2020 was significantly higher (56%). The questionnaire showed the majority of the participating students appreciated the digital recordings and the web-based material and found this learning-model beneficial. Although some students found the take-home examination heavy and an oral examination stressful, others found the take-home examination very beneficial for their learning and the oral follow up as a learning opportunity.

**Discussion and Conclusions:** Combining digital lectures and quizzes enables the students to learn when and where it is most suitable for them. This may lead to more engaged students and a higher pass rate. A take-home examination achieves a deeper learning since the students themselves are forced to find the answers to the questions. To combine with an oral examination based on the take-home examination not only enables the students to further elucidate on their given answers but also provides a learning opportunity during the exam.

**Take-home Messages:** Combining take-home examination with oral follow up is a promising approach to achieve a more student-centered learning.
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ABSTRACT:
Background: Due to COVID-19, most universities have moved to hybrid or distance teaching. This study examined (1) how the shift to an online-based style was conducted at Jichi Medical University in Japan and (2) how this change worked.

Summary of Work: From April to July in 2020, almost all educational activities, including bedside learning, were replaced with on-demand teaching through LMS. Jichi Medical University utilized the Moodle LMS, but few faculties had used it before COVID-19 pandemic. Thus, a hands-on faculty development was conducted for faculties and staff to help them start Moodle-based teaching. In the two-hour faculty development, they learned to set up their own Moodle courses, including making quizzes and setting the activity completion. On-demand lecture videos were stored in Vimeo to avoid disk space storage problems. Online live lectures were also conducted via BigBlueButton, a Web browser-based, open-source web conference system. Since face-to-face lectures restarted in September, these learning materials have been used for self-learning.

Summary of Results: Many courses used a simple format, containing PDFs, videos, and quizzes or assignments. Some used a restriction option along with the activity completion for example, students can access detailed patient information only after submitting an initial assignment. The number of Moodle learning logs in 2020 increased 100-fold compared to 2019. Within 2020, there was a slight decrease in the use of Moodle after September compared to the period before August. No end-semester exams were conducted using Moodle.

Discussion and Conclusions: The functionality of Moodle did not completely replace current bedside learning; however, it did replace many lecture-based classes. Since September, when face-to-face lectures resumed, the use of Moodle has decreased slightly. Moodle stores multiple learning logs, which can be used for learning analytics and institutional research. One of the future tasks is to consider LMS-based exams.

Take-home Messages: Under the COVID-19 pandemic, Moodle-based education replaced traditional teaching practices, especially for knowledge teaching. Furthermore, increased use of Moodle may allow for more detailed learning analytics.
#EPOD-TL: Teaching & Learning

#EPOD-TL30 Exploring medical student experience of remote access teleconsultations in a district general hospital (9576)

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ABSTRACT:

Background: Medical students spend a significant proportion of clinical placements attending outpatient clinics. Covid-19 has resulted in many outpatient clinics being performed over remote access platforms.
There is currently sparse evidence regarding the experience and educational value of students attending clinics conducted over remote access platforms.

Summary of Work: This research study was undertaken to evaluate the experience of medical students attending face-to-face, video and telephone consultation clinics across different specialties in NHS Lanarkshire. Students were emailed a link to an online questionnaire, containing a mixture of questions in both Likert Scale and free text format.

Summary of Results: Data collection is ongoing. From the current data, 18 of 28 students attended virtual consultations during their clinical placement. 22 students attended face-to-face consultations. Preliminary thematic analysis has revealed a mixture of opinions. Students responded to Likert scale questions positively, agreeing that both video and telephone consultations were at least useful and 100% agreed that they were able to meet learning outcomes. Some students had extremely positive experiences and reported being able to learn about different medical conditions or observe good communication skills. IT difficulties were infrequently reported, however there was frequently a lack of speakerphones in outpatient departments, which meant students could not hear the patient. There was an overall feeling that virtual consultations were not as useful but better than none. Data collection with finish upon data saturation and a full thematic analysis will be undertaken.

Discussion and Conclusions: The surveyed medical students had mixed opinions on their experience of virtual consultations, ranging from excellent to not useful at all. This may be due to variation in both equipment available and the familiarity of the clinician with the remote access platform.

Take-home Messages: There is great learning potential through remote access consultations, however many students and senior doctors remain uncomfortable with this platform. Further education in teleconsultation is necessary as it will likely remain in clinical practice for the foreseeable future.
#EPOD-TL: Teaching & Learning

#EPOD-TL31 Teaching Lung Ultrasound for Respiratory Therapists: From Virtual Learning to the Bedside (9403)

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ABSTRACT:
Background: Point of care Lung ultrasound (L-POCUS) has been increasingly used in critically ill patients, integrated with physical examination and clinical reasoning for the diagnosis of acute respiratory conditions such as pulmonary edema, atelectasis, pneumothorax, pleural effusion and pulmonary consolidation. Despite Respiratory therapists (RTs) having a crucial role in respiratory strategies, especially in patients on mechanical ventilation, they are not yet widely trained to perform L-POCUS during patient care. We aimed to describe the implementation of a L-POCUS course for RTs and the acquisition and retention of knowledge and skills. We also assessed the agreement between RTs and supervisors for the semi-quantification of edema using a Lung Ultrasound Score (LUS).

Summary of Work: The course had on-line lectures, followed by face-to-face lectures, hands-on training (where they also learned to calculate LUS) and simulation with L-POCUS. A test was applied before accessing the virtual learning environment (pre-VLE), before and after the face-to-face course (pre-course and post-course). Then RTs collected real patients L-POCUS exams, which were remotely evaluated by the course supervisors, who also calculated LUS and gave virtual written feedback for the trainees.

Summary of Results: Nineteen RTs participated as trainees and collected 70 L-POCUS exams. Test results were 3.6 ± 1.3; 5.8 ± 1.6; 5.8 ± 1.6; 8.3 ± 1.0; 3.6 ± 1.3; and 8.3 ± 1.0, respectively, for pre-VLE vs pre-course; pre-course vs post-course, and pre-VLE vs post-course (p<0.001 for all). Intraclass correlation coefficient for the calculation of LUS were 0.755; 0.828; 0.714; and 0.823, respectively, for trainees and all three supervisors, for trainees and supervisors one, two and three.

Discussion and Conclusions: Trainees RTs showed increased short-term acquisition and retention of knowledge and skills, which seemed to be maintained, as observed by the agreement between trainees and supervisors in the evaluation of the LUS.

Take-home Messages: • Our study presents a blended-learning point of care lung ultrasound course aimed at respiratory therapists (RTs) • The combination of on-line lectures, face-to-face lectures, hands-on activities and simulation seems to foster RTs knowledge and skills on L-POCUS • After the course, RTs were able to perform bedside exams with good quality, as assessed remotely by the course supervisors
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ABSTRACT:
Background: Undergraduate medical education often utilises patients with chronic, long-term health conditions in the provision of medical student teaching. These expert patients voluntarily give up their time on a regular basis solely for the benefit of furthering the education of medical students and are a valuable teaching resource. The aim of this study is to help understand any impact that Covid-19 has had on their involvement in medical education and their thoughts on involvement in future medical student teaching.

Summary of Work: The University of Bristol maintains a database of local expert patients who assist in the provision of medical education. Our study involves sending these patients a short survey with both multiple choice and free-text questions, either by post or electronically, to ascertain their perspectives on the following: whether they have been involved in teaching during the pandemic and if not, what the reasons for this were, if they were involved what their experiences of teaching have been, how they feel about being involved in face to face and virtual teaching now compared to before the start of the pandemic and any suggestions they have for improving medical student teaching that involves expert patients both at present and in the future. The study has been granted ethical approval. Results will be analysed using a mixture of descriptive statistics and thematic analysis where free-text responses have been provided.

Summary of Results: Results from this study are currently pending at the time of abstract submission.

Discussion and Conclusions: This will be dependent on the results obtained.

Take-home Messages: This will be dependent on the results obtained. Our hope is that this study will provide an important insight into how Covid-19 has affected expert patients and how this may impact on their foreseeable future involvement in medical education.
#EPOD-TL: Teaching & Learning

#EPOD-TL33 RCSEds Regional Surgical Advisory Networks webinar series for Medical Undergraduates (8248)

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ABSTRACT:
Background: With the disruption of teaching at medical schools across the UK due to the Covid pandemic, the RCSEds Regional Surgical Advisory Network has created a national programme to offer teaching in the form of webinars. These webinars are aimed at medical students and have a variety of experienced trainers from around the UK, and have been running since April 2020. The aim is to augment the remote learning that medical students will already be receiving from their individual medical schools, and to inspire a new generation of surgeons.

Summary of Work: These webinars take place every Tuesday and Thursday at 4pm, with a 20 minute talk about an aspect of surgery, followed by a 10 minute Q&A session. The sessions have one main lecturer who is an expert in the field, providing an excellent summary in the first 20 minutes, and a second lecturer to look through the questions submitted, answering the questions throughout the lecture. In the 10 minutes at the end, the most interesting and informative questions are presented to the lecturer, with informative discussions ensuing.

Summary of Results: Over six months (April to August - 52 webinars), each webinar had on average 117 participants, and were very well received according to feedback collected at the end of each lecture. These lectures were commended by the participants for being clear, concise and very well organised. They also provided the opportunity for lecturers to still engage with medical students, provoking interest in their speciality, and allowing them to add this teaching experience to their appraisals.

Discussion and Conclusions: Overall, the RCSEds Regional Surgical Advisory Networks webinars have led the way in online education, sparking interest in surgical specialities, and providing innovative teaching to medical students.

Take-home Messages: Online webinars given by expert consultants, and moderated by expert consultants, provided a good and useful resource to students that was well received. They are available on demand, and many medical students have found them an invaluable contribution to their medical training and education, and has helped to foster interest in the surgical specialities.
#EPOD-TL: Teaching & Learning

#EPOD-TL34 Bringing teachers and students together in the COVID-19 pandemic - making online learning a reality at a Brazilian Medical School (8735)

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ABSTRACT:

Background: Due to COVID-19 epidemic, the Faculty of Medicine of the University of Sao Paulo suspended its in-person classes and had to transition the first four graduation years to online environments. Under these circumstances, students were eager to assist health professionals against this public health challenge in any way possible.

Summary of Work: In order to continue classes and avail students interest in helping, many volunteer projects were designed by The Center of Medical Education Development (CEDEM). They involved 223 medical students and included research, assistance to health professionals in the COVID-19 frontline and assessment of the medical education difficulties. The latter included 16 students who worked on: Aiding teachers in the digitalization of in-person classes and coordinating the virtual lectures from years 1-4 of our medical school, which included Problem Based Classes, online evaluations and group dynamics; Creating infographics about COVID-19, study methods, and mental-health Co-organizing the COVID-19 Evidence and Updates for Health Professionals course through the selection of scientific articles on the topic, formative test-making and participants support.

Summary of Results: The volunteering work mentioned above resulted in:
- The production and sharing of 24 Infographics, 8 tutorials and 7 informative videos
- The recording of 147 lessons and 242 live transmissions from 29 different Curricular Units for 712 students
- The development of the COVID-19 Evidence and Updates for Health Professionals course which included 77 pieces of educational content and had over 50,000 subscriptions from health professionals all around the world.

Discussion and Conclusions: The creation of a volunteering project not only dedicated to assistance enabled students to learn more about medical education while making it possible for our faculty members to incorporate a new set of tools in their online classes. This ensures virtual medical education will not be further impaired if classes remain online hereafter. Additionally, some students involved in medical education have even been assigned to Specialization Courses, keen to deepen their knowledge and pursue an education career.

Take-home Messages: The students work in CEDEM enabled virtual education for undergraduates, faculty and doctors on extension studies to become a feasible reality in our institution during pandemic and non-pandemic times.
ABSTRACT:
Background: Due to the suspension of presential activities as a precautional measure to face the COVID-19 pandemic and in order to promote learning and knowledge interchange between its students, the Curriculum Commission of the UCV Medical School, developed an infographics contest between March and April 2020 in which the COVID-19 was the main theme.

Summary of Work: The competition notice, contest rules and specifications for the infographics were made through different social networks platforms. A period of 31 days was set to receive them in a specific email address. A database was created for the registration of the participating infographics and a rubric for their evaluation. Both, infographics and rubric were assigned to the qualifying jury that was conformed. After receiving the evaluations from the jury, the scores obtained by each infographic were added and the winning infographics of the contest were determined.

Summary of Results: 43 infographics were received with a wide and varied areas of knowledge addressed: prevention measures to avoid contagion, use of personal protective equipment, physiopathology of COVID-19, epidemiology, clinical manifestations, diagnosis, therapy, etc. Up to fourteen infographics were selected as winners.

Discussion and Conclusions: The call to participate in an infographic contest motivated our students to research relevant aspects of COVID-19. The received infographics reflect significant learning and collaborative work among students. The contest activity also allowed the integration of teachers as advisers and guides of the learning process and promoted the use of digital tools by students.

Take-home Messages: The infographic contest was valued as an attractive and novel activity that promoted learning, knowledge sharing and collaborative work between students and teachers from different approaches around COVID-19.
ABSTRACT:
Background: The flipped classroom (FLIP) is a collaborative, learner-centered, active-learning curriculum-delivery model that encourages students to complete preliminary work prior to class in preparation for higher-level application during class. We have previously presented a FLIP model implemented across a main- (MAIN) and additional-campus location (ADD). This investigation aims to examine the impact on student performance and perception between an on-campus FLIP (PRE) and a COVID-19 driven transition to online FLIP (POST).

Summary of Work: The cardiovascular-system course FLIP included: foundational-concepts video lectures (VIDEO); True/False knowledge checks (KC); small-group flipped-classroom problem-set sessions (FLIP); large-group application sessions (BSC). Notable PRE/POST differences included: points earned for FLIP attendance (PRE) vs. for each passing KC (POST); ~1:40 facilitator-to-student ratio and independent MAIN/ADD sessions (PRE) vs. 1 facilitator in Zoom main-room for up to 300 students randomly assigned to Zoom break-out rooms, combined MAIN/ADD (POST). Notable similarities included: VIDEO content/hours; FLIP, KC, BSC content/hours, and assessment questions.

Summary of Results: Two-tailed t-test showed increased overall performance PRE to POST (p<0.0001) and MAIN PRE/ADD PRE to MAIN POST/ADD POST (p<0.0001). Within PRE, MAIN was greater than ADD (p<0.001). Within POST, there was no difference between MAIN and ADD (p=0.25). Chi square analysis showed increased honors (≥90.0%) from MAIN PRE/ADD PRE to MAIN POST/ADD POST (p<0.0001). There was an increase in positive, unprompted FLIP-comments PRE to POST in anonymous evaluation comments (PRE: 9.6%; POST: 55.9%).

Discussion and Conclusions: The utilization of Zoom breakout rooms to facilitate FLIP online was very simple, economical, effective and efficient. It was user-friendly, time-efficient for students and faculty, and did not require expensive technology. The collaboration, team-work, critical-thinking, problem-solving, active- and independent-learning goals of FLIP were supported. Typical inter-class variability notwithstanding, student performance and preference data support that online FLIP was a success compared with previous on-campus FLIP, and this was especially evident for students at an additional location campus.

Take-home Messages: While the online FLIP format was born out of necessity in this unprecedented time, we propose this innovation be considered as an effective model for FLIP implementation in the post-pandemic medical-education world, whether for a single-campus or additional-location model.
#EPOD-TL: Teaching & Learning

#EPOD-TL37 Application of constructivist framework to the assessment of Doctor of Physical Therapy students during oral clinical examination on a video conference platform in response to the COVID-19 pandemic (8498)

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ABSTRACT:
Background: The transition to online learning environments as a result of the COVID-19 pandemic required physical therapy (PT) programs with traditional face-to-face curricular models to identify new methods to create contextual learning experiences and assessment of student performance on the higher levels of the cognitive and affective learning domains. Authors have suggested that a hybrid learning environment should apply the Community of Inquiry (CoI) framework. This framework is a method for developing collaborative and constructivist learning experiences in an online-based environment.

Summary of Work: An instructor administered a 50-minute oral examination to a PT student via a video conferencing platform. Students applied existing knowledge to a patient scenario presented at the time of the exam. The exam required students to efficiently discuss their clinical examination and evaluation of the patient case. A modified version of a clinical reasoning and reflection tool served as an analytic rubric. Ratings were awarded based on the students responses and ability to address questions related to their clinical rationale. Throughout the exam, the instructor would guide the learning experience using the one-minute preceptor paradigm, which focuses more on the learners needs and participation in clinical reasoning versus merely treating the patient correctly.

Summary of Results: Students subjectively reported that this was a valuable 1:1 learning experience. Currently, an internal review board application is pending to collect qualitative data on student feedback.

Discussion and Conclusions: The CoI model in hybrid learning emphasizes social, cognitive, and teaching presence. Use of this framework facilitated the development of a summative assessment that engaged students in problem solving that was contextual, authentic, and adequately complex. Application of a constructivist approach enhanced collaboration between instructor and student to allow summative assessment and encourage a meaningful learning experience. Beyond the pandemic, oral clinical examination via video conferencing platforms may also increase opportunities to involve larger numbers of remote clinical faculty in summative assessments.

Take-home Messages: Constructivist education in distance learning should be personal and social. This model for 1:1 student/instructor learning assessment model could prove to be a valuable method to prepare students for professional communication, oral presentation of patient case findings, and reflection-in/on-action that students will need to perform in the clinical environment.
ABSTRACT:

Background: While on-line medical education was massively implemented worldwide, due to the need for social isolation for the COVID-19 pandemic, in developing countries, problems such as unequal access to a reasonable internet connection and lack of resources to obtain proper electronic devices increased social differences between students with good financial conditions and those with social vulnerabilities, mainly those supported by social inclusion programs. Digital inclusion aims to ensure that all individuals and communities, including the most disadvantaged, have access to information and communication technologies. This concept consists of five elements: robust internet service, internet-enabled devices, quality technical support, access to digital training and applications and online content designed to enable and encourage self-sufficiency, participation, and collaboration (National Digital Inclusion Alliance - US).

Summary of Work: To promote digital inclusion, it was mandatory to assist students in need. The School of Medicine of the University of Sao Paulo (USP) concerned with this reality, in partnership with students representatives, performed a survey that initially identified that 4% of 455 students could not attend the online activities. There were no similar institutional initiatives before the COVID-19 pandemics.

Summary of Results: The dean of medical school, in collaboration with students and the Center for Development of Medical Education, readily responded to this demand, preparing, and distributing about 60 Chromebooks and SIM cards to all students in need.

Discussion and Conclusions: It was observed, as short-term impacts, that all medical students were able to attend all online activities during the entire period of social distancing. Besides, the long-term impacts were the development of a digital inclusion plan, as well as increasing the sense of belonging and caring among students. All that is essential in times that virtual education will probably remain.

Take-home Messages: The University, in a developing country, needs to pay attention to students different needs due to social disparities. Any innovation will work, if people cannot attend because of lack of resources.
#EPOD-TL: Teaching & Learning

#EPOD-TL39 Experience of conducting an online neurovascular training course for PGY6 in pandemic (9261)

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ABSTRACT:
Background: Neurovascular training course is scheduled on the sixth year of residency by neurosurgical society in Taiwan. All residents must have participated in this training course to be eligible for neurosurgical specialist examination. The course introduces both surgical and interventional treatment modality for neurovascular disease. In the past, it take placed in a real classroom. However, it changes to online course during pandemic. Here we will share our experience in hosting this training course.

Summary of Work: There were 26 residents from 18 training neurosurgical training centers participated this online course. The online teaching plateform we used was Zoom. The course included ten topics presented by different teachers. Each lecture took place 60 minutes, including 20 minutes question time. Seven teachers got together and present their topics in the same place, and the other 3 had their lectures online at home. Each lecture had pre-and posttests to evaluate the learning status. Finally, we used overall satisfaction to access the entire course. The course was also opened for all specialists of Neurosurgical Society.

Summary of Results: All residents completed the online training course and answered the pre- and posttests. The correct rate increased from 63% (pretests) to 95% (posttest). The residents reported that the satisfaction of the overall course is 92%. The largest number of participants online was 98.

Discussion and Conclusions: Online teaching and learning became mainstream during the pandemic. Due to the advancement of video conferencing platform, the effectiveness of online teaching had been increasingly recognized. Beside teachers, other senior specialists could response the residents questions online. It was good for this small group (26 trainers) and all the residents were fully involved in the discussion time.

Take-home Messages: Online teaching and learning were effective for PGY6 advanced training course. Frequent, real time online small tests were suggested to make sure all the participates had focused on the lecture. In order to control time and prevent errors, we suggested that all teachers must pre-record the content of their talk.
#EPOD-TL: Teaching & Learning

#EPOD-TL40 Keeping medical education human: Develop medical students’ cross-cultural care through blended learning in times of COVID-19 (9423)

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ABSTRACT:
Background: Medical education has encountered unprecedented transformations globally in 2020 with the spread of COVID-19. On-line courses have been widely used, but concern remains about whether medical professionalism such as cross-cultural care (CCC) would be bypassed with the increasing trend of electronic learning. The study investigated the outcome of a blended-learning class on cross-cultural care during pandemic crisis in Taiwan.

Summary of Work: Traditional Renal block Team-Based Learning (TBL) was changed to lecture-based format and included options for online attendance via Google Meet. Students were given an article on Complementary and Alternative Medicine and Medical Ethics with discussions of different health beliefs, complementary therapy other than western medicine, and related ethics and shared decision issues. To strengthen their understanding of the topic, students independently viewed an interactive video post-lecture showing the case background of an elderly patient who took herbal medicine and then consulting physicians for renal issues. Students were asked to answer questions pertaining to various video clips and review relevant cultural tips, followed by explanation upon completing questions. Students also wrote a reflection at the end. Reflections were assessed using inductive thematic analysis.

Summary of Results: Of the students who completed questions, 94.6% of third-year undergraduate medical students (n=130) and 89.5% of first-year post-baccalaureate students (n=38) either answered all questions correctly or missed only one question. Reflections were collected from 136 (out of 141) undergraduate and 41 (out of 63) post-baccalaureate students. Thematic analysis showed students were able to (i) demonstrate understanding of how/why patients turned away western medicine, (ii) reflect on future interactions/communication with patients using CAM, and (iii) connect their own life experiences, such as a student relating the passing of their own family member who took alternative medicine rather than sought out western medicine.

Discussion and Conclusions: Although some institutions around the world are forced to engage in distant learning due to current crisis, continuing students training on humanities and cross-cultural aspects become more important as learning from in-person interactions are limited. Adopting on-line blended learning approach is effective in maintaining and strengthening students learning of cross-cultural care and stimulating in-depth reflections.

Take-home Messages: Using deliberately designed blended-learning could provide students learning opportunities of humanities and professionalism when global crisis poses challenges.
ABSTRACT:
Background: Evidence-based medicine (EBM), the conscientious, explicit, and judicious use of current best evidence to provide patients care, is the core of clinical practice. Therefore, implementation of EBM in regular training of healthcare professionals, including pharmacists, is crucial. Revolutionizing the methods to teach EBM is also important for motivating the students to learn EBM effectively. We aim to demonstrate the impact of an innovative method, gamification, on EBM learning in one teaching hospital in Taiwan.

Summary of Work: All fourth-year pharmacy students need to complete at least 16 hours of courses focusing on EBM in our hospital. We designed team-competitions for every aspects of EBM using different games to convey knowledge. For example, we used trivia, multiple-choice, role-playing, spot the symbol, and group debate battles for the team competition. The winners are rewarded with an incentive gift. At the end of the course, we evaluated their knowledge of EBM, course satisfaction, self-assessment, and their potentials to be pharmacists.

Summary of Results: A total of 148 pharmacy students finished our courses. Among them, 69 (46.62%) were males. The mean age was 23.14 [standard deviation (SD)2.7] years old. Their average EBM knowledge score was 86.31 [SD 2.7], and their score of self-assessment improved by 2.32 [SD 0.8] (P<0.001). Moreover, the satisfaction of pharmacy students within the course was 4.95 on a 5-point scale, and their potential to be pharmacists was 4.70 on a 5-point scale.

Discussion and Conclusions: We provided a new strategy for EBM learning. Using through the gamification process, we improved the pharmacy students learning experience and increased information retention in class. We also incentivized them to get good scores, better understanding the subject, and finally improved their daily practice. On the other hand, this process needs more well-trained teachers and more time for the courses. It might be a challenge to establish these methods as a standard teaching practice.

Take-home Messages: Using gamification can impart EBM knowledge more effectively.
#EPOD-TL: Teaching & Learning

#EPOD-TL42 Multidisciplinary Students Learn TeamSTEPPS through Gamification (9144)

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ABSTRACT:
Background: Gamification can evoke human nature of amusement thus increase active participation, and continue to invest in. It is to boost students autonomous learning and motivation, to make them engage more in the class. We apply gamification in Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS), which is an effective way to promote patient safety and teamwork clinically. This research aims to help students on learning TeamSTEPPS through gamification before they attend clinical practice.

Summary of Work: Four schools of students attend the course, including School of Medicine, School of Respiratory Therapy, School of Nursing, and School of Gerontology Health Management. Three objectives were applied in the class: Teamwork, Communication and Leadership. With gamification in mind, the course were carried out with games and competitions by group. Each objective links to certain game (Teamwork: single-handed ring toss relay; Communication: Whispers; and Leadership: Helium Stick), and all students are undifferentiated assigned into groups. In the end of the lesson, faculty encourages students to use these skills in clinical practice.

Summary of Results: 632 students enrolled the course and 626 satisfactory questionnaires (99.05%) received afterwards. The satisfactory of three objectives and the course scored at 4.39, 4.21, 4.17, and 4.26 separately (with full mark score 5). The evaluation results in the end of semester mark averagely at 95.

Discussion and Conclusions: 1. The research shows that gamification can increase students motivation and engagement. Although each students clinical skills are still in lack, it is effective for them to realize teamwork, communication and leadership through games. Through gathering multidisciplinary students, they are encouraged in teamwork with different types of professionals. 2. Educators need to face the fact that investment cant always paid back as expected. Students learning outcomes cannot be guaranteed through innovative teaching. 3. Since most faculty are used to traditional lecture, courses like this could result to an awkward situation with a close-minded faculty. We recommend arranging related course for the faculty first.

Take-home Messages: For those students who are not yet attend clinical practice, learning serious medical issues and TeamSTEPPS through gamification can increase their motivation and engagement, so to improve their teamwork skill.
#EPOD-TL: Teaching & Learning

#EPOD-TL43 The experience of on-line self-learning program of COVID-19 in one medical college of Taiwan (9074)

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ABSTRACT:
Background: Medical college students should have the social responsibility in this COVID-19 epidemic era. Good epidemic prevention measures can help oneself, and others, as well as strengthen the campus and community. The Medical College of Fu Jen Catholic University in Taiwan, designed an on-line learning program to equip the students knowledge of this emerging infectious disease in the spring semester of 2020.

Summary of Work: The faculty of medical college organized the appropriate learning materials. We integrated six subjects of COVID-19, (1) epidemiology, (2) research progress, (3) clinical features and diagnosis, (4) acute respiratory therapy, the supply and demand of respirator and ethical issues (5) epidemic prevention/screening issues, and (6) antiviral drugs and vaccine development. The materials were organized as short video and power point display formats with a total learning time around 140 minutes. Students of the college of medicine voluntary participated in this program and were able to access the leaning materials between May 25 and 28, 2020. An on-line evaluation with 48 multiple-choice questions were held on May 29, 2020. This program was also approved by FJCU IRB.

Summary of Results: A total of 347 undergraduate students from 6 departments of medical college completed the evaluation. The mean scores of each department were between 46.1 and 77.0. The top two departments were public health (77.0) and respiratory therapy departments (68.8) and significantly better than the other 4 departments (including junior medical students). The overall performance of senior and junior students performed better than the freshmen significantly.

Discussion and Conclusions: Students from departments of public health and respiratory therapy might have better incentive to catch more information of the emerging infectious disease due the inherence of their professional mission. In Taiwan, the trainings of the medical students from year 1 to 4 are focused on fundamental medical science, infectious disease might not be their major concerns at this stage. Infection control might never be included in the curricula of some departments. Equipping our students with update knowledge of emergency infectious disease should always be in time.

Take-home Messages: A college-wide on-line educational program with assessment is feasible and essential in the medical college for pandemic infectious disease prevention.
#EPOD-TL: eTeaching & Learning

#EPOD-TL44 Implementation of a virtual library resource during COVID-19 (9212)

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ABSTRACT:

Background: The closure of a physical library within the hospital during the pandemic has carved the path for a virtual proton library. Virtual libraries have many advantages. They promote economical and efficient delivery of information that can be accessed from diverse geographically areas safely and at any time. They serve as a gateway to enhanced methods of providing educational content through resources such as video, podcasts, along with traditional books and journals.

Summary of Work: The objective of the virtual proton library is to create a platform for continuing professional development and opportunities for virtual peer-learning. Input from the resident librarian and their staff were instrumental in the design and implementation of the library. In order to have as diverse an offering possible we engaged a multi-disciplinary group of professionals. The journal articles included are the source of our monthly journal club discussions, which will enhance evidence-based reciprocal peer teaching and learning. Recognising the need for shared learning from materials in the library, we are considering a potential virtual forum to facilitate this.

Summary of Results: The library resources include a catalogue of eBooks related to proton beam therapy, as well as four peer-reviewed journal articles posted monthly featuring clinical proton beam therapy (PBT); research in particle therapy; radiographer-specific articles on PBT treatment and physics of PBT. In addition, the proton library also features a range of short podcasts on wider topics such as leadership, education, well-being including a critical appraisal of each journal article. Topical teaching based video provides didactic education. The library will also be available on the hospital Edukit app with regular updates as content changes and diversifies.

Discussion and Conclusions: The virtual proton library with its features is the first-ever created that we are aware of. It has taken months to compile, discuss and implement, but is a much needed resource in the era of a pandemic where social-distancing and home-working are the new norm. There has been very positive feedback about this new resource which will only enhance the educational output that multi-disciplinary teams can gain from it going forward.

Take-home Messages: The opportunity for education and learning should not be limited by COVID-19.
#EPODTL-: Teaching & Learning

#EPOD-TL45 Implementation of HyFlex in task training and simulator rooms of the Simulation Hospital at Andres Bello University in Chile (9234)

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ABSTRACT:

**Background:** The COVID-19 pandemic forced to change the face-to-face activities to virtual environment, but several procedures need hands-on experience to complete the syllabus. Therefore, new strategies must be explored to solve this issue. Hybrid Flexible or HyFlex, emerges as a new way to adapt the activities performed in clinical simulation rooms, but technological adaptation of the facilities must be analyzed.

**Summary of Work:** A new audio/video system was included in the task training and simulation rooms, as well as in the outpatient simulated rooms in the three Simulation Hospitals at our three campus in Andres Bello University in Chile. Cameras and microphones were implemented in each room and connected with LMS (BlackBoard Collaborate). In all rooms, this new solution allowed activities with students both on campus and online with bidirectional communication. Five groups worked in the task training rooms, each group with three students on campus, and 3 students online. The new system allowed working with small groups in synchronous or asynchronous way using six multitouch screens with a corresponding PC, a PTZ camera, 6 webcam and 6 speakerphones in each room.

**Summary of Results:** HyFlex methodology was implement in 3,000 undergraduate students of Medicine, Nursing, Midwifery with 150 teachers. Using a 5 point of Likert scale (1 strongly disagree to 5 strongly agree) in 112 students (simulation room) and 640 students in task training room, show 4.1 in connectivity to BlackBoard, 4.1 in easy group work, 4.0 in this activity helped my learning. The general average was 3.6.

**Discussion and Conclusions:** The results demonstrate that students accept the HyFlex methodology to perform simulation activities

**Take-home Messages:** HyFlex system is a new strategy for students' training in clinical simulation
Undergraduate Medical Mentoring during the COVID-19 pandemic: Challenges and Successes (8728)

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ABSTRACT:
Background: A casualty of the COVID-19 pandemic not often discussed is that of UK undergraduate medical education. Limitations to teaching opportunities and cancellation of yearly assessments during the first-wave have caused medical students to feel underprepared and adrift from learning. Some have expressed growing anxiety surrounding the adapted curricula and progression through training in response to the evolving pandemic. Lockdown restrictions and social distancing measures have further compounded concerns, leading to feelings of disconnect with both personal and professional relationships.

Summary of Work: A preliminary survey of third-year medical students at the Royal Wolverhampton NHS Trust was undertaken. All respondents (n=23) agreed they would benefit from discussions regarding wellbeing, clinical practice and career aspirations with healthcare professionals outside of their undergraduate academy. A student mentorship and relevant targeted support scheme (SMARTSS) was designed and piloted. This blended initiative paired each junior doctor with a single medical student. Prior to starting, clinicians underwent a local training course aimed at developing their mentoring skills. Regular contact was maintained through socially distanced meetings and virtual interactions. Mentors were encouraged to facilitate conversations centred around the five elements of wellbeing, as posited by Rath and Harter (2010).

Summary of Results: In total 86 junior doctors volunteered as mentors with 40 chosen for the first academic semester. Qualitative analysis of feedback from the mentor focus-group (n=4) identified that clinicians felt well-supported in their role but highlighted a desire for additional wellbeing resources to supplement meetings. Mentee focus-groups (n=11) appreciated conversing in an informal setting and benefited from useful discussions regarding clinical conundrums, career networking and general wellbeing. Participants identified issues with maintaining regular contact due to undergraduate teaching timetabling and COVID-19 clinical pressures.

Discussion and Conclusions: Our SMARTSS initiative has successfully identified and helped to fill a gap for the formalised vertical integration of junior doctors into the undergraduate program with respect to medical student mentoring. This has been pertinent at a time when developing healthcare professionals have required ongoing support during an unprecedented global pandemic.

Take-home Messages: Pastoral support for undergraduate students in 2021 is of greater importance given the disruptions to medical education in light of the COVID-19 pandemic.
Providing a better holistic healthcare: Training of person-centred therapeutic relationship communication narrative skills in medical radiology technologist education (9109)

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ABSTRACT:
Background: Providing a better healthcare holistically, it is essential to develop a person-centred therapeutic relationship between health professionals and patients who might have particular and greater needs physically, psychologically, spiritually and socially. It is to promote patients' resilience and self-worth in care. This study has adopted Carl Rogers' person-centred theory and its conceptual framework as the training model of communication skills for medical radiation technologists. It aimed to develop the ability of narrative towards patients' needs at the clinical encounter.

Summary of Work: A pre-posttest study was conducted to evaluate the effectiveness of a communication skill workshop including dialectic lecture and practice. Two evaluations were taken: before (T1) and after (T2) the workshop. The participants were purposively recruited from the Department of Medical Imaging in Northern Taiwan. Each participant self-reported with the Holistic Care Competence Inventory. The results would be analyzed using paired t-test comparing the changes of developmental effect over time.

Summary of Results: Twenty-six medical radiation technologists were participated in the workshop. The results indicated a significant change in the narrative communication skills over time with a mean difference of 8.62 and standard error of 3.11 and p of .001. Surprisingly, there were significant differences of participants' narrative communication skills resulted in the psychological (p=.025), spiritual (p=.011) and social (p=.002) domains. It also indicated the maintenance of the skills in physical domain.

Discussion and Conclusions: This study has successfully evidenced one of the promising formats could be developed in medical radiation technologists education. Through the training on person-centered therapeutic relationship communication with narrative skills, the technologists have developed the competence of delivering holistic perspective towards patients significantly. The result has indicated the former medical radiation technologists education could be modified to meet the particular needs of patients in future. Further evaluations, for instance a cohort study, which could be conducted to investigate the training effect is recommended.

Take-home Messages: 1. The result has indicated the former medical radiation technologists education could be modified to meet the particular needs of patients in future. 2. To promote patients' resilience and self-worth in care, medical radiation technologists' therapeutic relationship of communication and narrative skills has taken an important role in holistic healthcare.
#EPOD-TL: Teaching & Learning

#EPOD-TL48 A narrative-based approach to learning an admission interview and writing of history of present illness (9470)

AUTHOR(S):
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ABSTRACT:

Background: In Taiwan, English is not a native language and medical students have to learn to write in English a history of present illness (HPI), i.e. the story of patients’ illness. They have to learn to describe patients physical appearance and emotion, and write health narratives about him/her. The basic training can be offered to medical freshmen.

Summary of Work: 14 freshman medical students in Taiwan wrote their own unforgettable health story, learned from a theater specialist how to observe others emotion and express themselves. They also wrote health narratives about their elder family members after interviewing them. A physician taught them what an HPI is, including chief complaint, past medical history, HPI, family and social history, and guided them to write an HPI for their family members. After viewing a video clip of another doctors interview with a patient, they wrote an English HPI for him. Their write-ups were analysed and compared with those by four-year students, who watched the same interview clip, using Linguistic Inquiry and Word Count (LIWC), software for text analysis.

Summary of Results: The freshmen wrote that they had learned how to observe other peoples emotion, and express their own emotion. Although the fourth-year students write-ups had the most total amount of words (7186 vs 5901), except in the categories of drives (4.39% vs 4.69%) and affect (3.49% vs 3.76%), the freshmens HPI writings showed higher percentage in the following categories: relativity, i.e. the change of motion, time and space (14.2% vs 14.16%), biological (12.61% vs 10.97 %), social (10.59% vs 9.39%), and cognitive (7.99% vs 6.68 %) processes, perception (3.71%), and personal concerns (2.84%).

Discussion and Conclusions: The freshmen achieved in writing some parts of HPI after the integrated training of emotion identification, interview practice, narrative writing and learning elements of HPI. More time and experience may be needed for them to be adept in writing the drives of a patient (e.g. his/her affiliation and achievement), and affect (i.e. happy and cried).

Take-home Messages: To prepare for the students medical writing, teachers can start having freshmen write their own health episodes and interview their beloved family members for their illness and write narratives for them.
#EPOD-TL: Teaching & Learning

#EPOD-TL49 Bringing the operating theatre to the classroom: Evaluation of an introductory surgical course in the COVID-19 era (8659)

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ABSTRACT:
Background: Surgical specialities have a history of being underrepresented within undergraduate education. The COVID-19 pandemic has exacerbated this. Most notably, third-year medical students have been completely restricted from attending theatres, significantly reducing surgical learning opportunities. Past data suggests that doctors choosing surgical specialities are likely to be motivated by inspiration from a single teacher or department. With increasing obstacles to gaining such experience, we must aim to spark this interest elsewhere.

Summary of Work: We arranged a mandatory introductory surgical course for 28 third-year medical students. This included practical skills (suturing, laparoscopy, gowning) and theory (pre-op assessment, patient positioning, WHO checklist). The programme was evaluated using pre- and post-course questionnaires. These assessed confidence in skills, interest in a surgical career and desire for further courses. The differences between each pre- and post-course item were evaluated using Wilcoxon Signed-Rank test. Further questions explored opinions on the courses compliance with social distancing measures and preferences for virtual versus face-to-face learning.

Summary of Results: Students reported significant increases in confidence with content taught during the sessions, both practical and theory (p<0.001). A significant increase was also demonstrated in students self-reported likelihood of attending theatre (p<0.01) and future non-mandatory surgical courses (p<0.01). There was a significant increase in students self-assessed interest in a surgical career (p<0.01).

Discussion and Conclusions: Our results perhaps suggest an unmet appetite for surgical teaching within our third-year cohort, with students more willing to consider surgical teaching and a surgical career after better exposure to trainees and basic surgical concepts. The data also encourages us that students can have a valuable surgical learning experience outside of theatres. With uncertainties in the current pandemic, this gives us possible future directions to mitigate students loss of exposure to surgery. A blueprint of the course was created to disseminate among other local trusts, encouraging the creation of a regional mandatory introductory surgical course.

Take-home Messages: • Surgical specialities are underrepresented in undergraduate education, exacerbated by the impact of COVID-19 • Socially distanced classroom learning can increase confidence in basic surgical skills • Exposure to such learning seems to increase interest in a surgical career • There is potential for replicating the course elsewhere
EPOD-TL: Teaching & Learning

EPOD-TL50 Instagram effectiveness as a virtual tool for Pharmacology mentoring during the COVID-19 pandemic (8593)

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ABSTRACT:
Background: Mentoring is a consolidated learning technic and tool used in higher education to stimulate the students autonomy and critical thinking. The COVID-19 pandemic and the rules of social distancing made face-to-face mentoring unviable and created the need for a virtual option. Within this scenario, social media presents itself as a major tool to fulfil such need of distance learning activities.

Summary of Work: We conducted a descriptive study in the Pontifical Catholic University of Paraná (Brazil) to transversally evaluate Instagram effectiveness as a teach/learn tool. A Sample of 172 students from health courses (Medicine, Nursing, Pharmacy and Dentistry) who had participated in a Pharmacology mentoring between July-2019 and December-2020 answered a questionnaire with closed and open-ended questions about their perceptions in the models effectiveness and its importance during the pandemic.

Summary of Results: The results showed a young population, with easy access to technology and with great adherence to the app. Our analysis show that 78% of the sample group engaged in the virtual mentoring at some point, with medical students reaching 82% adherence. Our aim was achieved when 98% of the students evaluated the project as having a significant impact on their learning during the pandemic. Instagram was selected as the best platform for the online mentoring by approximately 86% of the students. One of the major aspects reported in the open-ended questions was how essential the social media mentoring was during the social distancing rules.

Discussion and Conclusions: We can conclude with the present study that the strategy of Instagram virtual mentoring in a Pharmacology discipline was of notorious importance in a period of social isolation and implementation of distance learning for in-class courses. It is also possible to suggest that this complementary teaching methodology can be used beyond the turbulent period of the pandemic and in other disciplines, as shown by 93% of the students who stated their wish to expand the method.

Take-home Messages: Instagram can be used as an important tool in higher education mentoring, mainly because todays generation has social media inherent to their daily lives, simplifying and making access to educational content more flexible.
ABSTRACT:

Background: Effective use of online CPR videos can be a solution to optimizing the academic burden on emergency medicine faculties during the COVID-19 pandemic. This study investigated the effectiveness of using a pre-existing educational video on CPR to support preclinical resuscitation education for medical students.

Summary of Work: One hundred twenty-nine students who agreed to join this study selected to learn CPR using a pre-existing YouTube video or the conventional screencast video by their university faculties, based on their learning preference. We utilized two YouTube videos that are recommended by the Japan Resuscitation Council. All students responded to the pre- and post-training multiple choice questionnaire on the basic knowledge of CPR, and, based on their responses, an analysis of covariance (ANCOVA) was conducted to assess comparability of effectiveness across learning modalities.

Summary of Results: Of the 129 students enrolled, 49 (38.0%) students selected the YouTube video to learn about CPR and were treated as the intervention group. The mean pre-test scores and post-test scores of the YouTube and instructors video groups were 6.43 (standard deviation [SD] = 1.54) and 6.64 (SD = 0.92), and 9.06 (SD = 0.92) and 9.09 (SD = 1.37), respectively. After controlling for the pre-scores effect, the results of ANCOVA did not show statistically significant differences between the groups (p = .927), indicating comparable performance between groups that used YouTube and instructors videos.

Discussion and Conclusions: A YouTube video might be as effective as the medical school faculties screencast video to teach CPR to preclinical medical students. This suggests that utilization of YouTube videos is an effective teaching strategy for teaching CPR skills, which would reduce the burden on faculty of creating screencast lecture videos for online learning on resuscitation.

Take-home Messages: Application of quality-assured YouTube CPR videos for preclinical resuscitation training of medical students can be an alternative instructional strategy to reduce the academic burden on emergency physicians with academic responsibilities during the COVID-19 pandemic.
#EPOD-TL: Teaching & Learning

#EPOD-TL52 Evaluation of a Synchronous Online Interactive Session in Enhancing Musculoskeletal Knowledge Among Medicine Residents During a Global Pandemic (9050)

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**ABSTRACT:**

**Background:** Amid the COVID-19 pandemic, the Internal Medicine residents at the University at Buffalo had their in-classroom didactics transitioned to an online format. The program utilized a synchronous interactive online learning approach using the Zoom® platform to ensure continuity in education.

**Summary of Work:** The study’s aim was to determine whether this educational approach enhanced training for residents, specifically in diagnosing and treating musculoskeletal (MSK) conditions. Surveys assessed comfort with treating and diagnosing MSK conditions and attitudes towards online learning. Pre-tests consisted of 5 American Board of Internal Medicine-Certification Examination© style questions. Residents joined the online session, using the Zoom® platform. Live question polls, text-chats, and audio/video features were utilized. A post-session survey re-assessing comfort and attitudes was administered, as was a similar 5 question post-test. Comfort was measured on a 5-point Likert scale (1: not comfortable to 5: very comfortable). Satisfaction with the session, ease of attendance and participation were also measured.

**Summary of Results:** A group of 37 and 22 residents completed the pre and post-survey/test, respectively. Post-intervention residents felt more comfortable than pre-intervention residents at diagnosing (M = 3.77±1.02 vs 2.81±0.97, respectively; p < .001) and treating (M = 3.64±0.90 vs 2.76±1.09, respectively; p = .002) MSK conditions. Although post-intervention residents performed better on the post-test than pre-intervention residents (71.0% vs 67.1%), the difference was not statistically significant (p = .614). The post-intervention survey showed that 100% of residents liked the session and felt it increased MSK knowledge; 81.8% reported that it was easier to attend; and 68.2% reported that it was easier to participate than in-person. Also, 81.8% reported that polling and chat functions contributed positively to their learning.

**Discussion and Conclusions:** The session significantly increased confidence in diagnosing and treating MSK conditions. Residents found it easier to participate and attend the online-based model. Overall attitudes of synchronous online interactive learning were positive. Residents also performed better on the post-test; however, this was not statistically significant likely the result of Type II error.

**Take-home Messages:** Interactive synchronous remote sessions positively impact residents education and can be widely applied with little resources.
#EPOD-TL: Teaching & Learning

#EPOD-TL53 Does the flipped classroom approach improve interprofessional collaborative practice competency in simulation-based skill training for health professionals? A mixed methods study (8280)

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ABSTRACT:
Background: Interprofessional collaborative practice competency is key to safe, high-quality, accessible, patient-centered care. This research investigates the effectiveness of the flipped classroom approach, for improving interprofessional collaborative practice competency, in simulation-based delirium case management.

Summary of Work: A cross-sectional survey was designed to investigate the effects of the flipped classroom approach on health professionals performance during delirium management. The sample consisted of 9 health professionals (3 physicians, 3 nurses, and 3 pharmacists). They learned pre-class study materials about delirium management via a digital learning platform. Participants were randomly assigned to 3 teams. Each team participated in a simulation case scenario related to delirium. Faculty members were debriefed about the health professionals assessment and management of delirium. For the quantitative outcome measures, the Chiba Interprofessional Competency Scale (CICS29), a validated scale for measuring competencies of interprofessional practice, was used before, immediately after, and three months after the educational intervention. The qualitative component consisted of a post-training questionnaire and semi-structured focus group interviews.

Summary of Results: CICS29 measurements after the intervention and 3 months after were significantly higher than those before the intervention (105.8 ± 10.1 vs 120.9 ± 9.5, p=0.003; 105.8 ± 10.1 vs 115.8 ± 9.4, p=0.047, respectively). Content analysis revealed that the flipped classroom approach affected four levels of Blooms taxonomy (knowledge, comprehension, application, and analysis). The frequency of appearance at each level was as follows: knowledge (1 time), comprehension (9 times), application (22 times) level, and analysis (5 times).

Discussion and Conclusions: The flipped classroom approach can improve interprofessional collaborative practice competency not only immediately after educational intervention but also after three months. In the flipped classroom approach, a high level of cognitive activity is practiced in Blooms taxonomy, and the participants worked on an application-based case simulation that promoted higher-level learning and learners engagement in interprofessional collaborative practice. This learning program is considered to promote long-term retention in learners, related to interprofessional collaborative practice competency, by applying the knowledge acquired through advanced learning.

Take-home Messages: The flipped classroom approach is an effective method for improving interprofessional collaborative practice competency in simulation-based skill training for health professionals.
ABSTRACT:
Background: In 2020, the Department of Anesthesiology, First Affiliated Hospital, Sun Yat-Sen University was authorized by the state to become a training center for core faculty who play a main role in the anesthesia resident standardized training program. During the first training course, the Department introduced the concept of EPAs.
Summary of Work: We held a four-day Core Teacher Training Seminar in which 38 core teachers were participated. During the course, the Department introduced the concept of EPAs, and discussed the details of the application of EPAs in anesthesia training program with teachers. After the meeting, using questionnaire survey, teachers reached a consensus on the division of task units, the competency to be reached in each task unit and the target supervision level of each task in the program.
Summary of Results: For the setting of learning objectives, the teachers agreed that the framework of EPAs is more practical then the framework of competencies. As for the division of EPAs task units, the teachers supported the division method according to the current training program which include 11 items of clinical anesthesia skills and 16 items of anesthesia management. The teachers also reached a consensus on the clinical competency connotation of each task unit. And for the target supervision level at the end of the training program, most of the anesthesia skills are level 4, normal anesthesia management are level 3, and some complex specialty anesthesia management are level 2.
Discussion and Conclusions: It is seemed easy to understand and accept the concept of EPAs due to the characteristics of anesthesia clinical work, These teachers quickly reached an agreement on the division of task units and the connotation and goal of task unit competency, which is very helpful for homogenization of resident training. How to scientifically assess the supervision level is the focus of teacher training in the future.
Take-home Messages: EPA appears to have good feasibility in anesthesia resident standardized training program in Guangdong China. We believe that any initial training on the use of EPAs must include a very general exploration and training exercise to raise the confidence levels of the training faculty.
#EPOD-AICC: AMEE International Centres - China

#EPOD-AICC2 Barriers and facilitators for self-regulated English learning among anesthesia resident (8598)

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ABSTRACT:
Background: English is an international language. It was a useful tool for doctor to gain updated professional information on time. Anesthesia residents perform self-regulated English learning by themselves. What are the barriers and facilitators for self-regulated English learning among them is not clear. Therefore, the aim of this study was to investigate the situation of self-regulated English learning and find out the barriers and facilitators among anesthesia residents.

Summary of Work: Methodology Semi-structured interviews were conducted among 16 anesthesia residents. Based on self-regulated learning theory, the interview explored current situation of self-regulated English learning among anesthesia residents including their learning target, learning strategy, self-motivation, self-control, self-monitoring, self-reflection, self-evaluation, learning motivation and obstructive factors. A thematic approach was adopted to analyse interview data, codes used to analyze the data.

Summary of Results: From the interviews we found that if the interviewees have clear learning targets and progress targets, they could insist their self-regulated learning more easily. The motivation were vary, which might be English applying on daily life or clinical work, publishing a paper. Most of Interviewees would chose professional literature as their learning material. Most of them would choose a quiet place to reduce the interference and keep away social software. They would rely on mobile application to assist learning. Self-motivation, self-control, self-monitoring and self-reflection were the relatively weak section for interviewees. The barriers were vary, which could be aimlessness, stressful clinical work, lack of practice and lure of mobile phone.

Discussion and Conclusions: From the interview we could draw a conclusion that the most facilitator for self-regulated English learning is setting a clear target. The target might be passing a test, publishing a paper or gaining an ability. Insufficiency of self monitoring and self-reflection, stressful clinical work, lack of practice and lure of mobile phone might be the main barriers.

Take-home Messages: 1. If you begin your self-regulated English learning, a clear learning target is very important for you. 2. Keep your mobile phone far away from you when you set a time for learning. 3. Group study may help you overcome the barriers of English learning.
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#EPOD-AICC3 Can the translation of medical publications help develop an understanding of medical education? A small pilot study (8604)

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**ABSTRACT:**

**Background:** A long-established faculty development programme in mainland China has recently embarked on the development of a Chinese version of *Medical Teacher*, through an interprofessional approach. The aim is to improve the understanding of faculty in the area of modern medical education.

**Summary of Work:** An interprofessional teaching and learning community was formed, including 19 clinical faculty members, 37 students of Master of Translation and Interpreting (MTI) programme and one faculty, specialising in medical translation. Twelve articles were selected from *Medical Teacher*. Each was translated separately by the faculty member and the students, who were then brought together for comparative analysis and quality control. After five working sessions, a final report was generated, detailing the observed differences in translation, their possible reasons, and potential confusion in understanding key concepts and theories in medical education. A term list was also created to standardise the Chinese translation of key concepts in medical education to unify the language use and facilitate the precise implementation of relative theories and practice among Chinese medical educators. Course satisfaction and self-assessed changes in knowledge, skills, and attitudes in both medical education and translation among participants were measured via an online survey.

**Summary of Results:** The average rating for course satisfaction among faculty was 4.7/5. 82.35% strongly agreed that such experience improved their knowledge and skills in medical translation, and 64.71% expressed a better appreciation of the role and relevance of the medical translator. 47.06% strongly agreed that they had made progress in understanding the basic concepts and theories in medical education, whilst 64.71% expressed greater confidence in interprofessional cooperation and communication with translators, by a better comprehension of their thinking and working processes. Similar results were also observed among students in the MTI programme.

**Discussion and Conclusions:** To our knowledge, this is the first interprofessional teaching and learning experience between medical educators, translation teacher and student translators. We believe these findings may be transferrable to other contexts.

**Take-home Messages:** An interprofessional teaching and learning experience between medical educators and translators seemed to result in positive changes in the understanding of modern medical education, its theories and practices.
#EPOD - AICC: AMEE International Centres - China

#EPOD-AICC4 Can the use of a Wechat Learning platform be of help in integrating theory with clinical practice? (8626)

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ABSTRACT:
Background: In the current curriculum, Diagnostics is being taught among the 2nd academic year students who have not been in touch with clinical courses yet. And when these students go into clinical intern, Diagnostic knowledges are needed to be reviewed. We try to look for a teaching approach to build an integrated and relevant Diagnostics resources for students to review conveniently.

Summary of Work: Just like Facebook, WeChat is a flexible and applicable social app. A WeChat official account (WOA) of Diagnostics contains four sections such as test and inquiry, Q&A, Management, Statistics, and Teaching material & Information. Statistics provides detailed analysis on users, graphic text, visits to menus and published messages. Test and inquiry is an extended function by connecting to the third party apps which provide well-designed voting system, chat room, online examination, and automatic answering.

Summary of Results: Our WOA for Diagnostics has been running for 2 years, and now has 1650 users, which are from Sun-Yat-sen University. The teaching materials such as small videos, pictures, and micro-lectures have been uploaded, which can be repeatedly reviewed. What more, some teaching resources such as the notice, syllabus are also uploaded. The notice is the announcement of recent schedules and teaching activities. The syllabus and courseware exhibit the teaching plans and word/pdf files of the courses, assisting students to preview and review the courses. In a questionnaire survey among students in 2019, most of students (82%) use WeChat daily, 70% of students were willing to keep subscribing message from our WOA, 11% of students quit after they passed the final examination. Thirty-one percent of students thought VOA is very helpful, 55% of them thought the WOA is partial helpful and needs further improvement.

Discussion and Conclusions: WeChat provides a free, interactive, attractive, adaptable, portable, sustainable, and more participatory teaching styles. Further improvement of VOA could help to facilitate the excellent teaching resources sharing in the public.

Take-home Messages: WeChat official account (WOA) could provide an effective and reviewable educational platform for Diagnostics teaching.
ABSTRACT:
Background: To bridge the gap between medical laboratory science and clinical practice and give each greater relevance, we integrated a case-based learning (CBL) approach with traditional lectures and designed the new Clinical laboratory course.

Summary of Work: In two of the 16 seminars, the students were divided into two groups. In one seminar, group one was the CBL+lecture group (study in a tutor-led CBL session and followed by a lecture), whilst the other group was lecture group (study only in a traditional lecture). In the other seminar, crossover. A quiz was given to all students pre- and post-the educational sessions. Additional feedback was sought through questionnaires and interviews.

Summary of Results: The variability of quiz scores of all students was large before class. After the CBL sessions, the score of the CBL+lecture group had a significant increase (P<0.01), but the variability was still large. After the lecture sessions, the score of the CBL+lecture group had another significant increase (P<0.01), and the variability was relatively small. The scores of the lecture group had a significant increase (P<0.01), compared with the scores before class. The variability of the lecture group after the lecture session was small, which was similar to the final score of the CBL+lecture group, though significantly lower (P<0.01). Both teachers and students had a positive evaluation for the course.

Discussion and Conclusions: The CBL+lecture mode did improve the students performance in the quiz. The lectures after CBL sessions helped the students improve their quiz marks significantly and evenly. China has a long history of delivering courses through a traditional lecture approach. If it is to develop educationally it needs to introduce much more integration and relevance into its courses. This small research project is the beginning of a series of larger projects that aim to show how small changes that improve students motivation through active learning can result in better outcomes.

Take-home Messages: 1. The CBL+lecture mode did improve the students performance in the quiz; 2. The students ability to active learning was uneven; 3. The lectures after CBL sessions helped the students improve their quiz marks significantly and evenly.
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#EPOD-AICC6 Discussion on the factors related to improving self-directed learning ability of medical trainees during pandemic (9603)

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ABSTRACT:  
Background: In a resent assessment for the medical trainees after they finished first year residency, most residents were not yet competent while some performed excellently. This result is greatly different from usual. All of these trainees were kept self-directed learning at home for 5 months during the past one year because of pandemic. Self-directed learning is one of the six core competency required during residency training in China. In order to find out the factors related to improving self-directed learning ability, we signed out questionnaires.

Summary of Work: Trainees who had just finished their first year residency were asked to fill out a questionnaire to investigate the factors affect self-directed learning. And these factors are correlated with their assessment score.

Summary of Results: Our results provide evidence that factors such as independent learning time, self-management ability, learning purpose are closely related to the self-directed learning ability. Particularly medical trainees with clear learning purpose had higher assessment scores than others.

Discussion and Conclusions: The first year residents are experiencing the change from school education to a more complex learning environment. Cultivating the ability of self-directed learning is important for them at the beginning of their career. Shorten of their training time due to the pandemic means trainees should make extra effort to gain the competency there are supposed to acquire. As trainers, we might help them set up learning purpose and help to facilitate their learning.

Take-home Messages: Setting up clear learning purpose can help students improving self-directed learning which are essential in studying medicine and in clinical practice.
**ABSTRACT:**

**Background:** Pathological specimens reading is an essential part of pathology course for under graduate students, however, due to the limitation of the duration of the slices and difficulties to acquire certain tissue with typical and clear lesion, it is necessary to find an alternative way for the students section reading skill training.

**Summary of Work:** We searched in our archives room for files of diseases which the students would be learned in pathology course, we reviewed the slices and picked one to three typical cases with good quality of staining for each disease. An experienced professor would supervise our work and review the slices we have picked out. All the slices would be then scanned by a machine to create digital slices, which would be offer to the students as a supplement study material.

**Summary of Results:** Over 300 of digital slices were created, which covered most kinds of disease demonstrated in the textbooks. The students reflected that their enthusiasm of study was highly raised by the digital sections. And our teachers found it more convenient and effective to use these digital slices in classes.

**Discussion and Conclusions:** Compare with representative pictures of the lesion, digital sections contain much more information and details, which also make sure of a longer duration of the slices, and also the convenience in portability, in this case becomes an important study resources in pathology sections reading training.

**Take-home Messages:** Digital techniques has made evolutionally changed our way of students learning in sections reading skills.
ABSTRACT:

Background: Empathy is crucial to the physician-patient relationship and therapeutic effectiveness. Empathy training and assessment however is not yet a feature of Chinese medical education. We conducted this study to examine the empathy levels of Chinese medical students and to explore the factors associated with differences in empathy.

Summary of Work: The medical student version of the Jefferson Scale of Empathy (JSE-S) validated for Chinese students was used. A questionnaire containing JSE-S and possible factors associated with empathy levels was distributed (https://www.wjx.cn/wjx/design/previewmobile.aspx?activity=84384147&s=1). Interviews were carried out to explore the perspectives of the students regarding empathy training.

Summary of Results: A total of 143 medical students completed the survey. Twelve students attended the interviews. There is no difference of empathy scores regarding gender or economic status. The students with clinical exposure less than 1 year had the lowest empathy scores (106.7[12.7]), compared to students without clinical exposure (108.3[12.5]) and students with clinical exposure above 1 year (112.8[13.7]; P<0.05). The students frequently communicating with the patients had higher empathy scores than the students who rarely talked to the patients (113.6[12.3] and 108.6[14.7], respectively; not significant). The students who personally experienced the conflicts between doctors and patients had significantly higher empathy scores than the students who didn’t (112.4[13.3] and 104.7[12.7], respectively; P<0.05). Interviews showed that students with higher empathy scores (>110) were relatively more active in talking and expected more empathy training with the real patients than the students with lower scores (<100). With the influence of pandemic and the possible greater gap between doctors and some patients, some students believed that group meeting with the patients and online management will help improve empathy and communication skills.

Discussion and Conclusions: Not many medical students were aware of the importance of empathy in patient care. Empathy declines on the early stage of clinical practice, but it was up-regulated with more clinical exposure. There is a need to explore the reasons in depth and provide adequate role models for the students.

Take-home Messages: Empathy builds the doctor-patient relationship. More empathy training and new strategy is needed in the new era. This study has limitations- only one school but it could be applied to other schools.
Factors that influence learning in the operating room: Perspectives of first-year trainees (8806)

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ABSTRACT:
Background: Learning in the operating room (OR) is one of the integral parts of medical training in obstetrics and gynecology. As a dynamic, high-pressure setting, OR is challenging for first-year trainees. Therefore, it would be beneficial if we can identify factors that influence theater-based learning and then improve teaching and learning in this setting.

Summary of Work: Semi-structured interviews were conducted with 7 trainees with 1 to 3 months of OR training experience in Obstetrics and gynecology. Records were played back after each interview and transcripts were analyzed and coded, followed by theme identification using a thematic analysis approach according to the AMEE Guide(Kiger & Varpio, 2020).

Summary of Results: According to all interviewees, the variety of clinical tasks assigned to them is the most significant factor that influences their learning experience in OR, with diverse clinical cases facilitate more deep learning. Direct instructions from the attending gynecologists were reported to be frequent or occasional in different teams while no interviewees complaint about lack of instruction since active learning is higher valued by most of the trainees. On the contrary, the multiplicity of clinical teachers is commonly reported as a beneficial factor that helps overcome difficulties during the familiarization process. Two interviewees reported overload aggravated by accessional paperwork. The challenge posed by the physical environment, the emotional impact of teachers, and the learning atmosphere of the OR were rarely mentioned.

Discussion and Conclusions: Although first-year trainees just transit from the role of a medical student to that of a medical professional, they showed distinctly different behavioral patterns in OR learning, which is more active and independent. Factors that influence OR learning include organizational factors, socio-environmental factors, and factors of clinical learners. Organizational factors such as the variety of clinical tasks assigned to the trainee and accessional paperwork load are of most concern to first-year trainees, while socio-environmental factors are of the least importance.

Take-home Messages: Increasing the variety of clinical tasks assigned to the trainee with a structured outcomes-based approach and reducing the workload of accessional paperwork are likely more helpful to enhance trainee learning in the OR.
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#EPOD-AICC11 Structured intern training based on CBL implemented by the identified tutor promotes performance of interns in neurology (8816)

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ABSTRACT:
Background: The cases required for interns is hard to guaranteed, so is the protected time of supervisors, as well as their devotion. Therefore, the outcome of intern training varies greatly. This study aimed to investigate the effectiveness and feasibility of a structured intern training protocol.

Summary of Work: Interns were assigned to the structured group (S group) or conventional group (C group) randomly during their two-week neurology internship. The interns in S group received extra support from the chief resident as the identified tutor to facilitate clinical reasoning. The control group was trained by clinical teachers as usual. Then all interns in both groups took MCQs test and OSTE at the end of two weeks. Interns were interviewed and completed questionnaire voluntarily. Moreover, the chief residents and the clinical teachers were surveyed.

Summary of Results: 43 interns were enrolled in S group and 27 in C group. Interns in both groups performed well in the MCQs, but the interns of S group behaved better in OSTE (P<0.05). 13 interns in S group and 10 in C group were interviewed. Interns in S proposed more diverse and in-depth advices. Moreover, subjects in S group scored the basic training and case-based learning during internship significantly higher (p=0.012) than they did in C group. Besides, all 3 chief residents thought the additional devotion was worth doing for improving the attitude and competence of interns. However, 12 clinical mentors who were masked to the group assignment thought of insignificant superiority of structured training.

Discussion and Conclusions: The identified assistant mentor provided more focused and individualized supervision, leading to more reliable relationship and active interaction. The structured intern training provided more support and resource for learners and facilitated clinical competence.

Take-home Messages: 1. Conventional intern training has disadvantages of nonequivalent resources of teachers and cases. Structured training makes it up by providing available access to adequate cases resource, supervised teamwork and active interaction with the assistant mentor. 2. Interns received structured training with specific supervisor presented better performance in clinical decision-making, and more interest in the specialty. 3. The assistant mentors approved the training model in terms of intern performance and workload.
#EPOD-AICC: AMEE International Centres - China

#EPOD-AICC12 The consensus on the understanding of the teacher’s role model in clinical teachers - We need a schema in future faculty development. (8405)

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**ABSTRACT:**
**Background:** The development of clinical teachers is an important guarantee of high-level teaching quality. Since 2017, we have conducted a lot of training on teaching skills for our faculty. These training achieved good results in the initial stage and helped to build a team of clinical teachers. However, in the subsequent development, teachers seem to encounter a bottleneck. Teachers satisfaction gradually decreases, and they are confused about the direction of faculty development. Through individual interviews, teachers seem to have a hunger for a more systematic and structured theoretical schema.

**Summary of Work:** From November to December 2020, 239 physicians from two affiliated hospitals of medical colleges (tertiary hospitals) were selected, who had been engaged in clinical teaching for at least 3 years. A questionnaire survey was conducted, which focuses on the 4 core competencies and 8 roles of medical teachers. The understanding of this concept, self-perception, and the direction of future learning was evaluated.

**Summary of Results:** The majority of teachers considered 4-core competence to be very important (77.8%-89.1%). More than 75% will continue to study in four areas, especially weak areas (theory 84.5%, evidence-based and decision-making 85.8%). Recognition of the 8 roles of medical teacher was ranging from 82.0% (Guide and Tutors) to 33.1% (scholars and researchers). The majority of respondents will undertake intensive learning in eight roles: a maximum of 71.5% in curriculum design and implementation, and a minimum of 42.67% as a scholar and researcher.

**Discussion and Conclusions:** The teachers role model gives teachers a paradigm and more structured schemata. The introduction and understanding of this model among the faculty revealed the needs of faculty development. In that case, teachers role model may be a better theoretical schema, in the organization of a faculty development program, which should be a more structured, demand-oriented and theory-driven approach.

**Take-home Messages:** The consensus on the understanding of the teachers role model should be a better beginning in the organization of a faculty development program. However, this study still needs to be further verified in the subsequent implementation process.
The impact of a continued scenario-based resuscitation training program on cardiopulmonary resuscitation patient outcomes - A five-year regional observation study

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ABSTRACT:
Background: This study aimed to assess whether continued scenario-based cardiopulmonary resuscitation (CPR) training for medical staffs improved the in-hospital return of spontaneous circulation (ROSC) rates of cardiac arrest (CA) patients.

Summary of Work: This was a before-and-after study, evaluating continued educational intervention for medical staffs in 28 medical and health institutions, which was conducted in Panyu District, Guangzhou, China. Scenario-based trainer-training CPR course was conducted from March to June 2015, and peer-assisted CPR training for every medical staffs was conducted from July 2015 in the study area annually. The primary outcome was rates of in-hospital ROSC before and after the training period. Secondary outcome was the result of a survey, which solicited the opinion of the trainees about the method of scenario-based education.

Summary of Results: A total of 208 faculty finished trainer-training CPR course and passed the final test to be instructors in second-phase CPR training. An average of 5109 faculty participated annually in the peer-assisted CPR training during 2015-2019. Of the 2551 CA cases included, 693 (27.2%) and 1858 (72.8%) were categorized in the before- and after-training groups, respectively. The in-hospital ROSC rates were 8.3% in 2014, and a gradual improvement was observed during the after-training period, from 22.8% in 2015 to 55% in 2019. 90.2% (4787/5307) of trainers replied to the survey after the first training, 99.5% (4763/4787) felt improvement to perform correct CPR and 78.7% (3767/4787) wished continued scenario-based CPR training. In addition, medical disputes caused by improper rescues were reduced annually, from 6.1% (22/360) in 2014 to 0.16% (1/644) in 2019.

Discussion and Conclusions: This study supported the conclusion that all medical staffs needed to undergo regular training and assessment of their resuscitation skills. Improvements of efficacy were shown in the feedback of survey after scenario-based CPR teaching immediately, and the in-hospital ROSC rates were greatly improved with continued CPR training on long-term outcome.

Take-home Messages: All medical staffs needed to undergo regular training and assessment of their resuscitation skills every year.
ABSTRACT:

**Background:** There is scant evidence with respect to achieving the specific learning objectives and improving clinical reasoning skills during the supervised and structured elective in clinical-years learning. This study is designed through students feedback to demonstrate how the short-term supervised elective can improve students clinical reasoning skills at their clinical placement, skills of case report writing for journal submission and satisfactory achievement of academic performance.

**Summary of Work:** Daily discussions and weekly summaries on the demonstrated skills and cases collection were carried out and recorded with 6 Curtin Medical School students during a 19-days supervised elective in the First Affiliated hospital, Sun Yat-sen University. The daily clinical reasoning discussion, case collection and bedside clinical skill demonstration with the weekly summary in different disciplines become the main content of the reflections discussed in this study. The students performance in their ensuing academic year was followed up after their return. A semi-structure interview was conducted among the students and the content of their feedback and reflections were analyzed.

**Summary of Results:** The main themes of case-based clinical reasoning identified in the daily discussions and feedback were described by the students in two frameworks: Framework 1 SNAPPS includes Summarize briefly the history and examination problem lists, Narrow the problem lists, Analyse the problem lists by contrasting the possibilities, Probe the supervisor by asking questions, Pick the unique case and plan for the case writing for journal submission, Select learning points for both case reporting writing and ongoing self-directed learning. The students have used these clinical reasoning skills in their clinical placement learning during the ensuing academic year learning with excellent academic scores and performances. Framework 2 PICO includes Problem lists creation in history taking, physical examination and bedside investigation, Investigate for supporting evidence to integrate into clinical assessment, Correct mistakes, teach general rules and reinforce what was right, Outcome analysis to identify the learning points.

**Discussion and Conclusions:** These reflections provide insight into how this exchange elective may improve students clinical reasoning skills in ongoing medical training, enhance scientific writing skills and achieve excellent academic performance.

**Take-home Messages:** Pre-clinical Exchanged students; Supervised Elective; Bedside demonstration; Case reporting; Clinical reasoning
ABSTRACT:
Background: A well-established medical education and training systemic critical to a country's quality of health care. Although China has made remarkable progress in optimizing its medical training program in recent years, the pros and cons of the international postgraduate medical training system are worthy of study to offer experience and lessons for China's medical education reform.

Summary of Work: A pilot study was conducted to compare the postgraduate medical education in Obstetricians and Gynecologists (O & G) between China and the United Kingdoms (UK). Focus group interview and questionnaire were used to seek insights into different aspects of training pathway, training content, assessment and support system, in hope to identify some implications for China's medical education reform.

Summary of Results: Compared to the O & G postgraduate training in China, the UK's O & G training program proceeds longer periods of training, more comprehensive assessment approach and a rigorous surveillance system.

Discussion and Conclusions: The postgraduate medical education of the UK aims to develop a competent doctor worldwide via an elite education pathway characterized by longer periods, standardized management and strict professional accreditation which provide us a good model of the top elite education program. While the existing pattern of China's postgraduate medical education is well-adaptive to national conditions and historical legacy of China, by adopting a relatively abbreviated training way, which makes it easier and more efficient to meet the health needs of the world's most populous nation through a glocalization approach.

Take-home Messages: The UK's postgraduate medical education may provide a good model for elite education, while China's educational pattern is well-adapted to the national conditions and historical legacy. More details are to explore in further research.
ABSTRACT:
Background: The pandemic issue concerning COVID-19 is a major medical challenge. The coronavirus impends not only humans life, physical health, and economic well-being, but also it threatens individuals separately as well as societies mental health and psychosocial well-being. The current pandemic is one of the challenges that the education system is facing, as infected students have some impact on their learning ability and academic achievement. Determining the impact of COVID-19 on students learning ability and their academic achievement.

Summary of Work: Quantitative research was conducted at ATSU with the participation of students from the Faculty of Medicine. The research tool was elaborated, students infected by COVID-19 were selected and interviewed.

Summary of Results: 68 students from the Faculty of Medicine (36 Georgian and 32 foreign students) participated in the Research. 46% of students surveyed COVID-19 was confirmed 3 months ago, 42% - 2 months ago, 12% - 1 month ago. The majority of the total students surveyed state their learning ability before the pandemic was very good. Activity (maximum 30 points) for Georgian students ranges from 23 to 27 points and Midterm Exam (maximum 30 points) ranges from 21 to 26 points. As for foreign students, activity points range from 20 to 26, and Midterm exam points range from 22 to 27 points. But, at the onset of the pandemic after being infected there is a significant fall in their learning ability and academic achievement. Activity, for Georgian students, ranges from 15 to 22 points, and Midterm Exams range from 13 to 19 points. As for foreign students, activity points range from 14 to 19 and Midterm exam points range from 16 to 23 points.

Discussion and Conclusions: Considering all of these data, we can conclude that for the students of the Faculty of Medicine Covid-19 has a high impact on their learning ability and academic achievement.

Take-home Messages: In case of sick leave support continued access to quality education, this can include:
- Use of online/e-learning strategies
- Review/develop accelerated education strategies
#EPOD-AICG: AMEE International Centres - Georgia

#EPOD-AICG2 AMEE International Networking Center in Georgia: Ongoing activities during Covid-19 pandemic (8872)

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ABSTRACT:
Background: Despite Covid-19 pandemic, the AMEE International Networking Center in Georgia revealed the increased interest in medical education among Georgian medical professionals. The need to seek and share the experience obtained during pandemic was extremely high, as maintaining a high quality of teaching and learning was critically important for a small country like Georgia. The great interest in new approaches of teaching, learning and assessment methods was reflected in the rise of participants number from Georgian Medical Schools on AMEE 2020 Online Conference - 19 professors attended the conference.

Summary of Work: The AMEE International Networking Center organized the online ESME courses not only for those who had already undergone ESME basic and ESME Assessment but also for those who revealed the extreme interest in ESME courses and were waiting for the new cycle to attend. Due to high demand Professor Trevor Gibbs started the new cycle of ESME courses in November 2020.

Summary of Results: Despite Covid-19 pandemic, in October 2020 two ESME courses were organized in online mode: Research Skills in Medical Education and Evaluating the Teacher, both trainings were conducted by professor David Taylor. 28 participants attended the RESME course, among them 17 were Tbilisi State Medical University (TSMU) professors and 11 from other 7 Georgian medical schools. The second course was attended by 19 participants, of them 12 were TSMU faculty and 7 from 4 other Georgian medical schools. In November 2020 was launched the new cycle of ESME courses. ESME basic was attended by 29 participants, among them, 26 were TSMU professors and 3 from other medical schools. All participants successfully completed the course.

Discussion and Conclusions: Since establishing the AMEE International Networking Center in Georgia at TSMU in 2019, already 7 candidates are considered to be awarded with AMEE specialist certificate, which can be considered as a huge success.

Take-home Messages: AMEE Center in Georgia lives up to expectations as the hub for the improvement of medical education in the country and in the whole South Caucasus region.
ABSTRACT:
Background: The study was conducted in the Scientific-Research Skills Center of Tbilisi State Medical University. The aim was to assess knowledge, awareness and attitudes of the students towards the scientific research.
Summary of Work: The study was conducted by mixed quantitative/qualitative method, in three steps, using self-administered questionnaire (18 questions). First step was a pre-test conducted in 2019, among 4th semester students at the beginning of Basics of scientific research skills (BSRS) course. Post-test was conducted immediately after the completion of BSRS. Repeated post-test was conducted among the same focus group of students at the end of 2020.
Summary of Results: 177 students participated in the study. During the pre-test, 31% of the students said they had taken part in some kind of research. This number has increased to 40% at post-test and to 56% at repeated post-test. Participation in the scientific study was considered a very interesting or somewhat interesting activity by 30% of students during the pre-test, which increased to 73% at the repeated post-test. During the pre-test, only 65% of students thought that science is as important, as education; this has changed to 77% and to 86%. Percentage of students, who can see themselves as future scientists, has increased from 42% to 49% and to 60%. Students were asked to evaluate importance of the research for the humanity on 5-point scale. During the pre-test, only 45% assigned 5 points, which has changed to 52% at and to 73%. At the repeated post-test, 100% of students said research is indispensable part of development of medicine (compared to 82% and 92% at previous steps).
Discussion and Conclusions: Study outcomes demonstrate that BSRS learning course has significantly increased interest, awareness and motivation of students towards research. Several months after completion of the course, students still have a good knowledge of key issues of the scientific research, good understanding of the role and importance of science in their future professional career. Take-home Messages: Students happen to be interested in the scientific research and we should engage them more.
ABSTRACT:
Background: COVID-19 pandemic appeared to be an unprecedented challenge to run OSCE due to shortage of assessors, standardized/simulated patients, and high risk to contract infection. As an alternative for OSCE during a pandemic, we considered Workplace Based Assessment (WBA) as the most relevant assessment system for senior students comprising all three domains of competencies - knowledge, skills and attitudes. The study aimed to evaluate the effectiveness of modified WBA for fifth year students summative assessment compared to OSCE.

Summary of Work: The effectiveness of summative WBA on students perceptions was evaluated by conducting mixed (both qualitative and quantitative) study. Two focused groups of 5th year students taking summative examination in internal medicine clerkship at Tbilisi State Medical University were explored: Group I (n=16) - through modified WBA (3 Mini-CEX and 2 CBD cases); and Group II (n=12) - through OSCE with analogous tasks in 5 stations. Semi-structured questionnaires were elaborated to learn students and assessors perceptions. This study protocol is approved by an Ethical Committee Review Board at TSMU.

Summary of Results: Statistical analysis of the study demonstrates that students, as well as assessors, have found modified WBA a valuable tool for summative assessment during pandemic period. Assessors found WBA time-consuming and less standardized; Students found instant feedback one of the positive sides of WBA though indicate on their less self-confidence and a higher level of stress in the clinic with real patients.

Discussion and Conclusions: Summative modified WBA is effective and feasible for senior students assessment, considering the problems of conducting OSCE during COVID-19 pandemic also the fact of usual less preparedness of graduate students to work in a real clinical environment with patients. Furthermore, modified WBA can be used alongside OSCE in non-pandemic conditions too.

Take-home Messages: 1. Modified WBA can be used as a summative evaluation tool for senior students during pandemics in internal medicine clerkship. 2. Using WBA as a summative method needs more training for standardizing the assessment approach by different assessors.
ABSTRACT:
Background: The OSCE exam remains challenging for senior medical students. Accessing the scores, video recordings, and checklists as a supplement to the feedback is critically important to students. On the other hand, the flexibility of faculty to tailor feedback to the individual is crucial to make instruction more personalized.

Summary of Work: OSCE exams video recordings, checklists, feedbacks, and questionnaires of 20 fourth-year medical students have been analyzed twice (in two semesters, 2018-2019). A qualitative study design using a structured open-ended questionnaire was used. After the first OSCE, students were asked to indicate the difficulties they had been experiencing during the exam and the areas where they needed more training. Based on statistical analysis, the syllabus was modified for the next semester; an individualized approach (reviewing video-records and assessors responses together with the student for giving more structured feedback) was planned, and special training sessions were conducted for assessors.

Three individual structured training sessions with simulated patients were planned for each semester.

Summary of Results: As a result of the individualized approach, there was a statistically significant improvement (16.5%; P<0.005) in students performance during OSCE exams by the same group of students in the next semester. The main areas of improvement were history taking (21%; p<0.001) and physical examination skills (19%; p<0.001). Most students stated that they benefited from individualized training sessions and felt more comfortable during OSCE encounters.

Discussion and Conclusions: There is a lack of an individualized approach in the process of teaching and assessing clinical skills. Structured debriefing sessions and detailed analyzes of the exam results assist educators to meet the needs of each student and make teaching more competence- and student-oriented. Students are helped to be more confident during the exams. Naturally, an individualized approach in clinical skills teaching is time- and cost-consuming and needs more human resources.

Take-home Messages: Making clinical skills teaching more individualized for meeting the needs of student improves their performance in OSCE exams.
#EPOD-AICG: AMEE International Centres - Georgia

#EPOD-AICG6  Integration of Simulation-Based Learning in the Curriculum of the Faculty of Medicine: Difficulties, challenges and achievements (8784)

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ABSTRACT:
Background: Simulation-based learning (SBL) is an important element of medical education as it allows the practice of basic and more complex skills without harming the patient in a safe, controlled environment. Worldwide, the use of simulation-based learning in medical education has increased over the past three decades. Simulation-based medical education occurred relatively later in Georgia and was firstly introduced in Tbilisi State Medical University (TSMU).

Summary of Work: In 2014, given the importance of SBL, TSMU redesigned the curriculum for the Faculty of Medicine, which is designed for six years, and innovative mandatory Clinical Skills courses for the second, fourth, and sixth-year students were created by TSMU Clinical Skills and Multidisciplinary Simulation Department (CSMSD). Clinical Skills 1 involved learning of basic skills: injection, patient transportation, etc. Clinical Skills 2 included SBL to gain and improve skills in paediatrics and obstetrics&gynaecology using manikins and simulators. In the case of Clinical Skills 3, students could acquire skills in the examination, diagnosis, management and emergency care of adult patients. At the end of the semester, they were evaluated using the Objective Structured Clinical Examination (OSCE). During that time, we actively collaborated with the Department of Obstetrics&Gynaecology (Ob-Gyn). The process revealed the need for cooperation with other departments.

Summary of Results: The single cohesive vision of curriculum led to integrated syllabi with the Departments of Ob-Gyn, Pediatrics and Internal Diseases. And since the 2018-2019 academic year, the CSMSD has integrated syllabi with those Departments. At the end of the integrated training courses, the OSCE is carried out in Ob-Gyn, Paediatrics and Internal Medicine.

Discussion and Conclusions: Update syllabi better met modern requirements of competency-based curriculum with integration across disciplines, which makes objectives clearer and more understandable to students and increases their motivation and their academic achievements.

Take-home Messages: Educators should redesign the curriculum, which should be student-centered, enriched with modern teaching methods so that students were able to realize its fitness to practice.
#EPOD-AICG: AMEE International Centres - Georgia

#EPOD-AICG7 Introducing Geriatrics in medical schools in Georgia (8863)

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ABSTRACT:
Background: Georgia was the first country among post-Soviet countries which included recommendation on introducing Geriatrics course in undergraduate MD curricula in National Standards for basic medical education. However, not all medical schools teach Geriatrics at undergraduate level so far. Tbilisi State Medical University was the first medical institution that introduced Geriatrics for 6th year students and published geriatrics textbook in Georgian language. The study aimed to evaluate how attitudes of final year students towards elderly patients differ among medical schools in Georgia depending on the study of Geriatrics as a separate subject.

Summary of Work: Explorative qualitative study was conducted in 26 Georgia medical schools. Of them 8 taught Geriatrics as a separate discipline, while in the rest of them it was considered that Geriatrics issues traditionally were discussed during teaching other clinical subjects. We elaborated special semi-structured questionnaires related to Geriatrics education for final year MD students

Summary of Results: Results of the survey have shown that over 92% of graduating students at medical schools where Geriatrics was taught, were familiar with common geriatrics syndromes, specificities of diagnosis and treatment, ethical issues related to the care of elderly patients. On contrary, only 37% of final year students from medical schools with traditional, outdated curricula without inclusion Geriatrics (15 schools), and 51% of students from 3 medical schools where Geriatrics was taught as an elective subject demonstrated awareness of aforementioned geriatric problems.

Discussion and Conclusions: Geriatrics was not included in undergraduate curricula in vast majority of medical schools in Georgia as a poor tradition inherited from Soviet times when Geriatrics was not considered as a subject to teach in medical schools. Currently only 8 (30%) of medical schools in Georgia introduced Geriatrics in MD curricula. Significantly less attitude scores by final year students towards elderly patients from schools where Geriatrics was not taught indicate high risk for elderly population health due to insufficient knowledge of geriatrics problems among graduating students.

Take-home Messages: Geriatrics should be considered as a compulsory subject for undergraduate medical students to provide better medical services for elderly population in Georgia.
#EPOD-AICG: AMEE International Centres - Georgia

#EPOD-AICG8 Objective Structured Clinical Examinations in Obstetrics and Gynecology for 4th-year students of Faculty of Medicine: An experience of 8 years (8881)

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ABSTRACT:
Background: The Objective Structured Clinical Examination (OSCE) is considered as the best format for assessment of clinical competencies. Its advantage is it covers all the main elements of the subject and that all students go through the same stations and are assessed using the same marking schemes.

Summary of Work: As part of the reforms at Tbilisi State Medical University (TSMU), with the support of international experts and taking into account their recommendations, the Department of Obstetrics and Gynecology (OB-GYN) updated the syllabus and the Department of Clinical Skills and Multidisciplinary Simulation (CSMS) was additionally equipped with simulators. Since the 2013-2014 academic year, the OSCE in OB-GYN for students of the 4th year of the Faculty of Medicine has been held at the Department of CSMS. After OSCEs, students were asked to fill out a questionnaire to examine students impressions regarding the exam.

Summary of Results: For today 13 sessions of OSCE had been held (n=2,860 students). In the beginning, there were 8 stations, subsequently, the number of stations increased and today we have twelve 6-minutes stations. Only 0.57% of students could not pass the exam from the first try. 91% of students said that the exam was objective and 78% of them wished to have a similar type of exam format in other subjects. The model of successful cooperation between abovementioned two departments was shared by other Departments.

Discussion and Conclusions: Implementation of the OSCE requires a lot of effort in terms of time, material and human resources, but it ensures a real-world approach to learning and assessment. Preparing students for such type of exams and to cover all items which are ranked in mark sheets helps educators to structure their everyday activities according to learning outcomes.

Take-home Messages: The curriculum should include OSCEs, it helps to bridge the gap between objectives and outcomes of everyday activities, thus increasing the quality of education and make assessment more objective and engaging for students.
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ABSTRACT:
Background: Online education is quite popular, especially in postgraduate studies. It has not been adapted for bachelor studies until recently, due to the situation with COVID-19. At the Tbilisi State Medical University (TSMU) the subject of Epidemiology and Biostatistics has been always taught face-to-face in class, but recently the online mode of education was implemented. The aim of the study was to explore the opinion of the TSMU students regarding the online learning in general and specifically for the subject of Epidemiology and Biostatistics.

Summary of Work: The qualitative research method was used. 9 students that have studied epidemiology and biostatistics both in class and online participated in the semi-structured interview through Zoom. The students have been explained the purpose of the study and asked for permission to record the session. Afterwards the anonymized audio files have been transcribed and analyzed.

Summary of Results: In general, the students are happy with opportunities that online classroom has given them. Most of them work and they are able to adjust their working routine and find time to attend the classes at least to get marks. Of course, they miss the social aspects of the class attendance, but major advantages of the online setting are sparing of time and money. All respondents denied any health-related effects. They assessed teachers performance unchanged as well as own academic achievements. It is interesting that there was one respondent (male) who said that his motivation towards study has decreased because the special ambiance, characteristic to the in-class learning could not be recreated online and that was affecting his motivation to study, to attend classes. Indeed, his marks have deteriorated. Though, nobody else corroborated this stance.

Discussion and Conclusions: Observed results are in line with the global data. There are subjects that can be taught better in the class. We can not teach students how to palpate the patient at distance. But epidemiology and biostatistics can be taught online as well as in class to the more or less equal satisfaction.

Take-home Messages: Success of distance education depends on the topics covered in the study program.
ABSTRACT:

Background: The American MD Discovery course is based on prerequisites in biostatistics and epidemiology to teach modern approaches and basic principles of different types of medical research, to understand ethical and governance issues of medical research, practical skills to develop a research project, and to provide engagement with clinical research programs and research communities.

Summary of Work: Teaching is done through two-hour workshops in small groups that examine key concepts and develop practical skills. Students must write a mini review article, and develop a research project proposal. For the article, students work in 4-author groups and choose the review topic then grouped (3-5 students per project) to complete selected projects. Each student is provided their own work package to carry out. Students must submit their completed projects online to a review board 2 weeks prior the final exam and present their projects to the review board.

Summary of Results: 40 students are currently completing the course. We have received 10 review papers that have the potential to be published. From the individual projects we have chosen 10 for completion. These are either observational studies or retrospective cohort studies. Most observational research is related to the Covid-19 pandemic that students feel to be immediately relevant.

Discussion and Conclusions: During two years of experience providing this course, students have enthusiastically embraced the opportunity to develop research projects. This approach overcomes the limited opportunity to carry out experimental studies. The extensive review process is demanding but creates opportunities for national and international collaboration for data sharing, data communication and mentorship.

Take-home Messages: Regular communication of research findings with their course directors, project instructors, and peers helps medical students develop critical thinking through searching and discussing the topic of interest, necessary for life-long learning Students are excited by the possibility of contributing knowledge relevant to health issues in their own countries.
EPOD-AICG: AMEE International Centres - Georgia

EPOD-AICG11 Understanding the motivation of medical students during the era of COVID-19 in Georgia (8720)

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ABSTRACT:
Background: Motivation is an essential concept in Medical Education. It is known that motivation can influence students academic achievements and performance. Very little is known about what motivates students to study medicine in Georgia, how it changes over time during their study at medical schools, and how the covid-19 pandemic is impacting it.

Summary of Work: The aim of the study is to explore the motivational types and the impact of external and internal factors on medical students motivation, including the influence of the covid-19 pandemic. Quantitative Research methods have been used. Students from all medical schools of Georgia have been invited to participate in the study. A special on-line questionnaire has been designed. The Survey was conducted in December 2020-January 2021.

Summary of Results: In total 954 students participated in the study. In the sample 62.7% of the students were female (n=598) and 37.3% male (n=356). 27.2 % of the students reported that their families have a background in the medical field. The top two dimensions of motivation are: taking care of patient Health and Interest in medical activities. They are followed by motivation to help members of the society. On the question, has the Covid-19 pandemic affected your choice of the medical profession? most of the students answered that the pandemic reinforced their decision to become doctors, because society now needs more care from physicians. More than half of the students mentioned that their learning motivation has decreased since switching to on-line learning. Approximately half of the students mentioned that participation in medical services during the pandemics is a moral obligation, 30% of the respondents mentioned that involvement in medical care during pandemics would be important for improving the knowledge and skills.

Discussion and Conclusions: The recent study has provided insights into students primary motivations for studying medicine before and in the era of Covid-19. This study found out that students are more influenced by intrinsic motives.

Take-home Messages: The Covid-19 has just enforced students decision to become a doctor, whereas remote learning during the Covid-19 took a toll on students by decreasing their learning motivation.
#EPOD-AICR: AMEE International Centres - Russia

#EPOD-AICR: Academic Scientific Specialists Engagement Survey Study (ASSESS) of Internal Motivation Assessment in Medical Educators (8310)

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ABSTRACT:
Background: The satisfaction of faculty members depends on their internal motivation level and contributes to the overall efficacy of any educative organization.
Summary of Work: ASSESS is our first project seeking to identify factors with a negative impact on medical education efficacy. Another aim is to increase faculty’s satisfaction and engagement by attracting and retaining motivated human resources. Ninety full-time and part-time educators have answered to our GoogleForms-based ASSESS questionnaire (>120 questions) with post-analysis. Further, their satisfaction perception at work has been evaluated, regarding factors with a negative impact on engagement: cognitive and emotional attitudes (job satisfaction) and behavioral outcomes (contribution).
Summary of Results: We have found that 77.3% of faculty consider their activity to be a difficult. 18.4% dislike the curriculum quality, and 25.9% complain for their schedule. 31.1% report of low quality in communication with administration; the career advancement criteria are unclear for 33.5%. 20% believe they have no professional progress. Systems of tutors are weak according to more than 22.9%. 14.2% think there is not enough feedback with chiefs. 10.4% indicate dissatisfaction in work; 4.2% claim that their university is an undesirable place for work. 21.9% consider to have a job burnout. 16.1% are going to leave teaching in next two years.
Discussion and Conclusions: Although only a few participants mention the unsatisfaction of their universities, every fifth of them feels a job burnout. Almost all educators are overloaded with activities. The faculty are often not satisfied with education organization and career development.
Take-home Messages: We believe that the education should be well-scheduled. The career advancement criteria should be transparent to improve the internal motivation and to decrease the job burnout. Among various reasons we have selected those that have a negative impact on the internal motivation. We mean to increase the amount of questionned up to ~600 and to publish a big data research.
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ABSTRACT:
Background: The COVID-19 became a challenge for all in-person academic activities. Fundamental curriculum required changes. The aim of this study was to assess the effectiveness and acceptability of online active learning through flipped-classroom technique in clinical pharmacology.

Summary of Work: A randomized control study involved ninety-eight sixth course medical students who were scheduled to get a clinical pharmacology course between March and June 2020. Traditional learning group (TLG, n=50) with a grade-point average (GPA) 4.4 had 90-minute lectures and after-lecture classes, both via ZoomTM. Outside of classes, TLG-students were free to self-study any recommended literature. Active learning group (ALG, n=48) with a GPA 4.3 was guided to use pre-recorded 30-minute video-lectures with post-quizzes, short tutorials, clinical cases within Google Classroom before their Zoom-class with interactive discussions in small groups with a teacher. End-of-course assessment in a form of the oral virtual exam was used to evaluate academic outcomes. Additionally, all ALG-students were invited to respond to the online questionnaire to assess feedback on active learning method.

Summary of Results: A total of 98 students finished the course and passed a final exam. ALG and TLG did not differed significantly in their end-of-course scores (4.6±0.5 vs. 4.4±0.6, respectively), but ALG-students have significantly improved their average GPA in comparison to TLG-students. Forty-six completed questionnaires were received from ALG: 94.6% students noted that active learning approach was helpful in terms of problem-solving and analytical skills development, 96.4% felt increased learning motivation despite of COVID-19 anxiety, 92.9% favored to use active learning mode for other academic disciplines.

Discussion and Conclusions: Though academic outcomes of traditional and active learning groups were similar in this study, active learning approach had an extremely positive effect on students engagement with the course, their satisfaction, self-motivation and critical thinking development, even online.

Take-home Messages: Online active learning mode can engage students in learning process and find its own niche in the academic curriculum.
ABSTRACT:
Background: Even before the COVID-19 global pandemic, the medical community has already recognized the need to change medical education to meet students and employers expectations. While the ongoing pandemic revealed various problems in the field, simultaneously, it offered a unique opportunity to champion this change.

Summary of Work: The study's primary goal is to explore students satisfaction with the platform-based curriculum augmented approach during virtual classes; the secondary goal is to compare the final examination results of the virtual learning vs. offline learning in the pre-COVID-19 era. From February to January 2020, a one-year observational study was carried out at the Department of Internal Medicine. Overall, 80 students participated in an anonymous voluntary student satisfaction survey. Upon completion of the virtual course, the average final mark was compared with the results of the 2018-2019 courses using independent samples equal variances t-test.

Summary of Results: 88.2% admitted that online access to the preparatory materials helps better understand class discussions; 53.2% noticed that they need additional information following class discussion to perform better; 89.5% of respondents agreed that they achieved the program's learning outcomes; 92% of students reported improvement of clinical reasoning in identifying the links between the ideas. Students who studied in virtual classes in 2020 performed significantly better on an exam than those studied in traditional lecture-based classes in 2019, t(165) = 1.974, p = 0.013; and 2018 t(158) = 1.975, p = 0.006.

Discussion and Conclusions: While many respected professionals claim that online education will never be as good as face-to-face teaching, the resistance is partly because the online platforms' learning resources are limited. We can clearly see that students' exam marks at the end of the virtual course were significantly higher than the previous years' examination results showing students' readiness and maturity for eLearning. The platform-based approach facilitates students' support and learning preferences.

Take-home Messages: Professionally constructed learning platforms are to reshape traditional offline education into a blended approach by offering students positively-reinforced, personalized, self-paced learning of the clinical disciplines theoretical part. In contrast, the practical part shall be taught face-to-face.
ABSTRACT:

Background: Emotional intelligence (EI) is an indispensable part of professional competencies of a medical student and a doctor. It is known, that high level of EI in doctors correlates with an increased patient satisfaction, better clinical outcomes, improved teamwork and lower rate of burn-out.

Summary of Work: Aim of this work was to evaluate and to compare (EI) and its separate components in senior students studying at General Medicine and Pediatrics programs in Medical Universities. 132 senior students, 107 (81.1%) female, mean age 23±1.1 y.o., 89 (67.4%) students from General Medicine Faculty (GMF), 43 (32.6%) from Pediatric Faculty (PF). Groups were compatible in terms of gender, age, and social conditions (p>0.05). Hall Emotional Intelligence Test was performed for evaluation of EI.

Summary of Results:

Cumulative emotional quotient was higher in senior students from GMF in comparison with PF: 32 [7; 51] vs 26 [-2; 35], p=0.031. In general EI was low in 52.8% and 81.4% students from GMF and PF respectively. Students from GMF demonstrated better results in such components of EI as emotional awareness (11 [4.5; 15] vs 8 [0; 12], p=0.023), self-motivation (7 [-1; 10] vs 3 [-2; 7], p=0.035) and managing the emotions of others (9 [-0.5; 12] vs 5 [-1; 8], p = 0.011); The differences in empathy (9 [3.5; 14] vs 9 [-3; 12]) and managing of own emotions (1 [-7; 6.5] vs -1 [-5; 3]) between GMF and PF were statistically insignificant (p>0.05).

Discussion and Conclusions: It should be noted that a low level of EI prevailed among all students, regardless of faculty, with particularly poor results shown by the respondents in terms of managing their emotions. It is advisable to include relevant psychological training in the curriculum for both faculties to improve the level of EI in medical students.

Take-home Messages: EI was higher in students from General Medicine faculty in comparison with Pediatric Faculty. Most students had a low level of EI irrespective of faculty. This problem should be improved with special trainings.
#EPODA-ICR: AMEE International Centres - Russia

#EPOD-AICR5 Medical Education in Russia during the COVID-19 Pandemic from the students’ perspective (8050)

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ABSTRACT:
Background: In the face of Covid-19 pandemic medical schools have experienced a challenge of modifying curriculum in order to protect students health. There are still many questions and uncertainty regarding the effectiveness of distance learning.

Summary of Work: 13,040 medical students from 46 institutions of Russia have been surveyed on the subject of evaluation of training during the Pandemic using the original questionnaire validated by 6 experts. Criterion and construct validity were determined in a pilot survey (n = 46). The study design was based on the use of Internet survey technologies. Visual Analog Scale from 1 to 10 was used to assess the level of knowledge acquired by the students.

Summary of Results: As stated by the respondents, 95.31% of the medical universities in Russia transferred to distance learning during the Pandemic. For 2.75% of the students only lectures became remote, 1.82% - declared no changes. 39.8% of the trainees noted that the time to prepare for the class has increased twice and 19.9% - by one third, 26.6% - did not notice significant changes. Self instruction time decreased by half for 5.8% and by 1/3 for 7.8% of the respondents. 38.4% of the surveyed stated that they are happy with certain elements of remote training, 27.5% - like such format, 22.9% - do not like it and 11.2% - found the question difficult to answer. The average scores for the knowledge assessment were 5.9 for the humanities, 6.1 for fundamental science, and 6.0 for clinical training.

Discussion and Conclusions: According to almost 2/3 of the respondents, transition to remote training has leaded to the considerable increase of the time for self studying. Regardless of the field of studies the students have rated the level of knowledge gained after the modification as relatively poor. There is a significant variability in terms of satisfaction with the distance learning.

Take-home Messages: According to the medical students in Russia, distance learning is characterized by the increased self instruction time as well as by insufficient knowledge gained. Only certain elements of the new normal should be considered for the future practice.
ABSTRACT:

Background: One of the main goals of modern education is the formation of professional thinking of students, development of creative, problem-oriented approach. The purpose of this study is to study perception of problem-oriented learning (POL) methods by students of Pharmacy.

Summary of Work: The study was conducted in 2019 at Sechenov University using mixed methods of sociological research with participation of 423 students. The results of focus group discussions were processed using thematic analysis and questionnaire data by means of variation descriptive statistics.

Summary of Results: The results indicate a high interest of students in POL. Among these methods, problem cases are most actively used in the Department. Problem lectures, when the teacher creates a problem situation and involves students in its analysis, are used less often, but students want to see them in their curriculum. This creates additional opportunities to modernize the curriculum according to students wishes. More than half of students think that real-life situations provide credibility to material being studied, which enables a future professional to adapt faster in different professional spheres. Differences in opinions of senior and junior students were identified. The most important advantage for junior students was considered the fact that POL contributes to a better understanding of the topic. Main for them is process of learning and assessment that follows, in contrast to senior students, whose most important characteristics are validity of material and improvement of communication skills.

Discussion and Conclusions: POL is based on real life situations, which ensures validity of acquired knowledge and prepares future professionals for different aspects of professional life, while improving students life and communication skills. Thus, results of this study may help in introducing new educational approaches based on students needs.

Take-home Messages: Problem cases are the most interesting for students. The main advantage of POL is credibility of the material studied, based on reality of life situations. POL methods contribute to a better understanding of topic and help to develop communication skills of students.
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ABSTRACT:
Background: Emergency medical care is commonly delivered by teams. These clinical teams can deal with situations that are highly dynamic and situation can rapidly change. The team members are under a time pressure, and the consequences of making a wrong decision or undertaking the wrong action may lead to further injury.

Summary of Work: The Simulation-based teamwork was introduced at the Medical University in November 2019. Once the fundamental principles and main ideas of the work are aligned and separated, residents can independently assign roles and take responsibility for their actions as a leader and team members. The effectiveness of the teamwork was assessed on the basis of a post-training survey and results of education.

Summary of Results: Every resident was a leader of team, a team member and received a feedback from the teacher. Team improves motivation and cooperation between members - 100% of residents (n=68) found the program helpful, marks in the post-training survey increased by 34%. The results of the simulation training system in the form of a questionnaire, as well as intermediate control during training for three terms, show that students practical skills better by working in a team (pre-training, 5.4/10; post-training, 7.3/10), where each of them is responsible for his actions (pre-training, 6.8/10; post-training, 7.9/10). Moreover, the psychological and emotional criterion is also higher (pre-training, 5.8/10; post-training, 8.1/10), since each team member feels more responsible, but moderately relaxed and free, as his fellow mates study with him.

Discussion and Conclusions: Simulation allows the same scenario to be repeated multiple times and improve communication, leadership and group decision-making. Training in teams will likely become more common in the future, and may even become a mandatory requirement for ongoing practice in some areas.

Take-home Messages: Effective teamwork is a quality tool for building a more effective teaching environment. 2. Working in teams, residents control the actions of themselves and their teammates, better acquire practical skills.
#EPOD-AICR: AMEE International Centres - Russia

#EPOD-AICR8 Learning effective doctor-patient communication skills: Online challenges (8032)

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ABSTRACT:
Background: The COVID-19 pandemic has pushed digital education and medicine forward from eLearning platform development to telemedicine practice. In light of these rapid changes, we have confronted the lack of doctor-patient communication skills in an online environment.

Summary of Work: We identified three types of online communication between doctors and patients: videoconference, audio calls, and chat rooms. We have developed communication skills training program including each of these three forms based on the OSCE structure. The training sessions were held among junior doctors and residents who had to start communicating with patients online. Each session was conducted online in small groups of 5-7 learners and included a short theoretical part and an extended practical session with simulated patients. After practice, trainees have received 360-degree feedback from the trainer, the simulated patient, and the group members.

Summary of Results: After a while, we collected feedback from the learners on the impact of the training sessions on their clinical practice and online communication. The trainees highlighted the following results. It was easier and more familiar for them to start communicating with patients online, since they already had this experience; the training helped them avoid conflicts or misunderstandings with patients faster and more effectively; overall, interaction with patients took less time and was more productive.

Discussion and Conclusions: We found a pattern that video conferencing is the most familiar and closest to offline practice option since it allows non-verbal signals and reveals patients emotions. Conversely, communication through chat rooms caused the most difficulties, because it is hard to identify the patients feelings, show empathy, and use the skills of facilitating and summarizing. Also, we identified several important aspects and skills adapted for chats. For example, the skill of clarification is undergoing robust changes. It is impossible to discuss urgent situations online in chats.

Take-home Messages: The pandemic forced us to move faster to what was already ahead of us. We are convinced that effectively built online processes will facilitate and reshape the future of clinical practice and medical education.
#EPOD-AICR: AMEE International Centres - Russia

#EPOD-AICR9 Game-based learning approach in higher pharmaceutical education to engage students in study process. Experimental study (8151)

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ABSTRACT:
Background: The present lecture-seminar-based education system in Russian higher pharmaceutical education creates stakeholders’ dissatisfaction of graduates’ skills. Lectures and seminars/practical classes focused on developing students’ knowledge also requires skills based on a competency model. Lectures develop basic knowledge, seminars/practical classes strengthen basic knowledge but establish minor skills. This approach often results in poor attendance and lack of motivation. The objective of this experimental study is to develop and test a game-based learning approach, aimed at increasing students interest and involvement and to compare that with the traditional educational model.

Summary of Work: Traditional method of learning and Game-based learning were compared in two different groups of students. At the end of the course both groups were asked to respond anonymously to the question: How likely is it that you would recommend the way learning material was delivered to you, to other students?. Net Promoter Score (NPS) (https://hbr.org/2003/12/the-one-number-you-need-to-grow) was then calculated for each group. The game-based learning group scored higher in recommending this form of learning.

Summary of Results: The survey demonstrates that Game-based learning is perceived better than traditional methods. Moreover, NPS of game-based learning comes close to the NPS of industry average that encourage us to further explore this area.

Discussion and Conclusions: Results of experimental study demonstrates students preference to game-based learning that reflected in NPS result close to education & training_industry_benchmark. Further research is needed to test these findings on bigger scale and involve in assessment other measurers and stakeholders.

Take-home Messages: Based on our findings, medical teachers adopting traditional learning approach might be encouraged to enlarge their skills and along with traditional approaches, incorporate elements of game-based learning to meet students need and possible improve performance measures.
ABSTRACT:
Background: The COVID-19 pandemic has resulted in drastic changes to many aspects of medical education and practice, including the major shift in publication and communication trends. However, little attention has been paid to the use of proper terminology, especially in non-native English speaking medical students. Knowledge of specific terminology is important for communicating with both medical colleagues and lay people who need accurate and up-to-date information about COVID-19 situation. The aim of our work was to evaluate the educational game that could serve as a tool for better vocabulary acquisition.

Summary of Work: Two groups (N=20) of Sechenov University students (General Medicine, 4th & 5th years) with B2 CEFR English language proficiency level participated in the experiment. The first group (n=10) was invited to take part in an educational game: simulated translation agency work session. The task was to translate a review article on COVID-19 from English into Russian. Participants were provided with all necessary instructions during pre-session briefing. The group was also asked to draft their own glossary of COVID-19-related terms. Following a one-week session the participants were asked to fill out a questionnaire. The other group (n=10) served as control: they learned terms by memorizing the glossary of 50 core terms that was compiled from a number of relevant open access review articles by word frequency analysis.

Summary of Results: Overall, analysis of questionnaires showed preference of simulated session over traditional vocabulary learning techniques and high level of student satisfaction due to collaborative approach to the task. The vocabulary retention assessed one month after the experiment was higher in the experimental group than in control group (94% vs. 84%, respectively). Drafted glossary of terms showed high degree of matching with the core vocabulary (78%).

Discussion and Conclusions: Our findings suggest that translation agency simulation games can facilitate quick and effective themed terminology learning and better vocabulary retention, as was the case with COVID-19 terminology. The technique studied could potentially be extrapolated to other relevant biomedical themes. However, the scale of our study requires further investigation of the subject on a larger population.

Take-home Messages: Translation-aimed educational games can facilitate themed vocabulary learning.
Can student-centered interprofessional sequential simulations enhance students’ teamwork and knowledge of other professions and teaching? (9371)

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ABSTRACT:
Background: Simulation learning has been found to be effective tool for healthcare education.
Summary of Work: A student-centered voluntary interprofessional sequential simulation course was designed to find out whether students would benefit from interprofessional sequential simulations and be able to create and operate this type of simulations. Medical, nursing, paramedic, biomedical laboratory science and radiography students were enrolled. The assignment for all three groups was to create and operate a simulation for another group. The simulations should provide a role for every discipline. The simulation learning objects were teamwork and interprofessionalism. The students filled two short questionnaires during the planning and post-simulation phase. The questionnaires featured multiple Likert-scale strongly agree-strongly disagree and open-ended questions. In both questionnaires there was a question about the effect of COVID-19 pandemic, because due COVID-19 social distancing and remote learning platforms had to be implemented and the actual simulations were postponed from May until the fall of 2020.
Summary of Results: 23 students (74%) answered the first questionnaire and 20 (65%) the second questionnaire. There was no evident bias in response rate by profession. The students attitudes towards interprofessional simulations were overwhelmingly positive. In both questionnaires they felt that the group was functioning well, their opinions had been heard properly, that it was easy to work in an interprofessional team and they were able to contribute to the process the way they wanted to. They also perceived that the course was well organized and interprofessional work in an electronic environment was successful. Overall the students felt that COVID-19 did affect the course but that remote learning and simulations themselves were successful.
Discussion and Conclusions: Students are able to create and operate a complex interprofessional sequential simulation if guided by professionals. Interprofessional simulations induced positive experiences and attitudes in healthcare students and promote interprofessional teamwork. This type of simulation learning promotes active learning. Study asserts also that successful interprofessional simulations are possible to run amidst the global pandemic and it is possible to integrate parts of the processes into electronic environment.
Take-home Messages: Students are able to create and operate interprofessional sequential simulations in guidance of professionals. Interprofessional simulations enhance collaboration and knowledge of other professions.
#EPOD-FD: ePOD - Faculty Development

#EPOD-FD2 Census of employment and volunteer status of clinical clerkship interns and students of the Faculty of Medicine of the University of Chile during the COVID-19 pandemic (9514)

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ABSTRACT:
Background: The COVID-19 pandemic has brought unprecedented conditions for work, volunteering activities and informal care situations to the Universidad de Chiles School of Medicine. The study's aim was to characterize the experiences of those undergraduate students and clinical clerkship interns involved in one or more of these three tasks.

Summary of Work: An online survey was implemented through the Survey Monkey platform during the months of May and August 2020. This convenience sample allowed us to capture trends of the apparently reduced but intense group of students in this situation.

Summary of Results: The students who participated the most in these topics were senior students, and they tended to develop their volunteer activities in healthcare centers associated with the university. Paid labor and volunteer work were concentrated in working hours of 48 hours a week or more. The most common tasks were supporting the administration of healthcare centers, monitoring patients remotely and assisting COVID-19 or non-COVID-19 patients. Finally, care activities were provided mainly to at-risk patients who lived with the students, not suspected of COVID-19. They generally performed tasks of supervision, accompaniment and support in activities that require being away from home.

Discussion and Conclusions: The majority of students involved in volunteering followed the logic of professional practices. This indicates that volunteer work as such is mixed with other concerns, but that continues to play a role in those spaces.

Take-home Messages: Volunteering is presented as a path to development and practice for students of the health sciences. It increases their experience in the clinical field and could have a positive impact on their training.
#EPOD-FD: ePOD - Faculty Development

#EPOD-FD3 Educating Health professionals according to WFME Global Standards: A systematic review (9698)

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ABSTRACT:
Background: The demand for internationalization of medical education increases with the growing mobility of students and health professionals as well as with the rising demands for medical care. Therefore, international accreditation of medical education is a priority for many countries.

Objectives:
1. Detecting where are being implemented the WFME Global Standards for Quality Improvement in medical education.
2. Identifying main actions needed for the accreditation of medical education programmes when using as reference standards the WFME model.
3. Analysing strengths, limitations, best evidence, innovations, student's perceptions and, resources needed for preparing International Medical Graduates (IMG).

Summary of Work:
The demand for internationalization of medical education increases with the growing mobility of students and health professionals as well as with the rising demands for medical care. Therefore, international accreditation of medical education is a priority for many countries. Objectives: 1. Detecting where are being implemented the WFME Global Standards for Quality Improvement in medical education. 2. Identifying main actions needed for the accreditation of medical education programmes when using as reference standards the WFME model. 3. Analysing strengths, limitations, best evidences, innovations, student's perceptions and, resources needed for preparing International Medical Graduates (IMG).

Summary of Results: From 209 potential studies, 23 have been selected using an advanced search strategy and analyzed qualitatively according to the objectives of this review. Showing the current challenges when implementing the WFME global standards including technical, methodological and strategic aspects for basic and postgraduate medical education.

Discussion and Conclusions: The WFME standards are being implemented at all levels of medical education, basic, postgraduate and continuing professional development. Also by Quality Assurance Agencies (QAA) to carry out international accreditations of basic medical education programs. A significative greater interest exists in developing countries and adaptation challenges can arise when implementing these standards depending on the local context and their socio-sanitary needs. Conclusion: Using WFME standards influence the development of curricula as well as assessment and licensing procedures. Although the current 2020 revision would facilitate their implementation however, the QAA recognition process by WFME implies a costly-time-consuming process involving multiple tasks at different levels, political, institutional, among many others

Take-home Messages: Students must play a key and active role in the accreditation processes, since many of the studies in this review confirm this positively role of Medical students when they are an active part of the international accreditation process.
#EPOD-FD: ePOD - Faculty Development

#EPOD-FD4 Ensuring effective anatomy teaching during the pandemic (9685)

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ABSTRACT:
Background: An array of new measures introduced to cope with Covid-19 pandemic challenges. Such challenges included shifting to online instruction, restricted physical contact during anatomy lab sessions and shortened dissection time. Measures included online self-assessment modules introduced via Canvas, online anatomy learning sessions utilizing 3D models; and online lectures included polling questions to ensure interactive instruction. Students progress was closely monitored and their use of the online self-assessment resource was evaluated with narrative feedback sent to students. A survey administered to assess satisfaction with the new measures showed that the measures have been useful in enhancing understanding and facilitating better performance.

Summary of Work: New measures introduced include: weekly online self-assessment questions posted on Canvas; Zoom-based lectures with 3-4 polling questions to stimulate discussion and interaction; focused lab dissection sessions with two students per table using complete PPE; use of pre-sected and plastinated specimens; peer presentations and online evaluations followed by narrative feedback; and weekly faculty-driven online reviews. Students performance was closely monitored on Canvas and compared with their grades in weekly quizzes. An anonymous survey was administered to assess students satisfaction.

Summary of Results: Class overall anatomy average of 17 weekly quizzes was 84% (±9.7), about 3% higher than the average for the previous three years. Eighty two percent of the students agreed that the new measures helped them understand anatomical concepts, appreciate clinical relevance 77%, and improve performance 72%.

Discussion and Conclusions: The higher average grades recorded this year is largely attributed to the wider range of measures introduced and to the intense monitoring and follow up of students performance. We believe that variety of the new measures suited students study habits. There might have been other factors that contributed to this years higher performance. Such factors may include a different cohort of students; students studying off-campus with more time at hand. Assessment tools have been consistent with last years. We conclude that the new measures have been effective in ensuring better performance and satisfaction despite the curricular challenges faced during the pandemic.

Take-home Messages: The thorough design and introduction of new measures coupled with diligent monitoring of students performance would most likely yield a positive outcome.
#EPOD-FD: ePOD - Faculty Development

#EPOD-FD5 Faculty development in PBL facilitator at Prince of Songkla University (9752)

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ABSTRACT:

**Background:** Problem based learning (PBL) is one of the important learning process in preclinical year of medical students at Faculty of Medicine, Prince of Songkla University (PSU). Facilitator is one of a key factor in effective PBL process. Thus, training course How to be good PBL facilitator integrated with various medical education modules for new faculty was assigned for 1 month.

**Summary of Work:** The training course for PBL facilitator was designed by integrated learning process with lecture, PBL observation, and being facilitator in real situation. The reflection and feedback were performed along all processes.

**Summary of Results:** Total of 24 participants were enrolled in the training courses under supervision. There were 9 members completed the survey. The average self-rating score of prior knowledge and skill in PBL was at 2.44 ± 0.88. After first PBL observation, the increasing score of 4.22 ± 0.44 in PBL knowledge and skill was retrieved. The reflection and feedback were conducted in order to share and learn their individual experiences in PBL observation. Q&A was also included in the session to clarify the specific issues. All participants seemed to have more understanding and confident for being PBL facilitator in the preclinical courses.

**Discussion and Conclusions:** This results suggested that the proper PBL training course was required for new faculty in order to standardize the PBL facilitator. The reflection and feedback was also the major learning process.

**Take-home Messages:** PBL is still being use in preclinical year of medical student at PSU. This learning process leads learner to achieve the higher competency including integrating skill, critical thinking, communication, teamwork and time management.
#EPOD-FD: ePOD - Faculty Development

#EPOD-FD6  Familiar Faces (8436)

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**ABSTRACT:**

**Background:** Good teaching of communication skills improves patient outcomes. It has been suggested a safe, respectful and co-operative environment fosters the best teaching experience. One way to teach communication is through modelling, which students find helpful and has been shown to improve their skills. However, it is inconclusive whether the use of a familiar tutor as the model improves the learning environment.

**Summary of Work:** We compared two tutor groups of third-year students from Bristol Medical School participating in separate communication tutorials, involving 19 students in total. Group one watched a communication video featuring a clinician and actor unknown to them, and group two a video featuring an actor and familiar tutor. After watching the videos, the groups were encouraged to participate in separate fishbowl style communication sessions led by their tutor. Following this, all students were given a questionnaire exploring if the familiarity of the tutor in the video impacted their learning and overall experience.

**Summary of Results:** All 19 students completed the questionnaire, with 94% finding the videos useful as a teaching tool for communication. Of the 9 students that watched their tutor in the video, 100% strongly agreed that this familiarity improved their ability to identify key points of successful communication. Additionally, they all felt they were more readily able to relate the communication skills demonstrated in the video to the fishbowl scenario. Furthermore, 88% of this group identified that by watching their tutor, they were more comfortable participating. In comparison, 90% of the second group suggested that watching their tutor would have increased their participation, and it was observed that this group participated 3 times less than their counterparts.

**Discussion and Conclusions:** We have demonstrated that using a students tutor as a model for communication skills improves both student participation and their ability to identify and incorporate these skills into their practice. Furthermore, the use of videos in communication teaching could allow this session to be adapted for remote delivery, making it favourable for use in the current teaching climate of COVID-19.

**Take-home Messages:** Tutors should be encouraged to actively participate in communication teaching as the use of a familiar model positively impacts student learning experience.
Medical staff knowledge of Advanced Care Planning (ACP) affects their attitude but not their self-competence in death work (8510)

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ABSTRACT:
Background: The Patient Right to Autonomy Act was passed in 2015 and implemented in 2019 in Taiwan. Through advance care planning (ACP), which should be conducted by licensed medical staffs, patients could sign advance direction (AD) and exercise the special right to refuse treatments. There were numerous courses and advertisement about ACP toward medical staffs in Taipei City Hospital. To assess the effect, a survey was initiated to investigate the relationship between ACP knowledge, attitude toward advanced directives and self-competence in death work in medical staffs.

Summary of Work: Numerous training courses and advertisement about ACP was started in Taipei city hospital since 2016, to help medical staffs get the license for ACP. The study sampled 116 medical professionals (24.1% physicians, 34.5% nurses, 36.2% social workers) in Taipei City Hospital in 2017. The survey included basic demographic characteristics, 15 questions about the knowledge of ACP, the decisional balance score for ACP, and the Self-Competence in Death Work Scale (SC-DWS).

Summary of Results: The score in ACP knowledge showed significant negative correlation with the overall score ($r = 0.21, p = 0.001$), and Value/Belief ($r = -0.023, p = 0.008$) and Cons part ($r = -0.26, p = 0.003$) of the decision balance score. However, no significant correlation was found between the score of ACP knowledge with the overall score ($r = 0.0026, p = 0.5$), existential sub-score ($r = 0.050, p = 0.3$) and emotional sub-score ($r = -0.093, p = 0.2$) of the SC-DWS.

Discussion and Conclusions: Increasing the knowledge of ACP in the medical staffs change their attitude toward ACP by clarifying ideas and reducing negative thoughts. However, Gain knowledge about ACP did not affect their competence in dealing with the issue about death. Programs other than introducing the idea/knowledge about ACP, such as simulation program or real participation in ACP, should be incorporated into the program to make our staffs more competent in discussing ACP with patients and helping them about the issue of death.

Take-home Messages: Medical staffs knowledge of Advanced Care Planning affects their attitude but not their self competence in death work.
ABSTRACT:

Background: Increasing diversity in medical student populations includes growing numbers of students attempting to balance medical training with parenthood. Conceivably, future medical workforce sustainability may depend to some degree on support available to parents during undergraduate, graduate and postgraduate medical training. Recently, Weinstein et al in the New England Journal of Medicine urged teaching institutions to promulgate family-friendly policies for trainees and to facilitate access to parenting resources citing increasing concerns over physician burnout.

Summary of Work: This mixed methods study enquired into the level of support student parents received at a New Zealand undergraduate medical school, alongside evidence for, and student and staff perceptions of, the organisation and effectiveness of available support and institutional attitudes held toward medical student parents. The university website was searched to establish publicly accessible information on parenting support, documentation and policy regarding medical student parent support was requested from Student Affairs Offices, and medical school staff and student parents were surveyed using Likert scales with free text options. Additional quantitative data was also obtained from medical student databases.

Summary of Results: Results revealed males and females consistently formed a sub-group of parents and expectant-parents studying medicine, yet formal policy relating to medical student-parents was lacking and limited information existed regarding parent-specific student support. Support was provided on a case-by-case basis, but required student initiation. Although some student parents had positive experiences with this approach, others, both male and female, were critical of a perceived lack of assistance, with 67% of those surveyed stating there was no support or that they lacked knowledge of available support. By contrast, staff generally viewed available support positively, not always aware of the issues some students faced.

Discussion and Conclusions: Balancing parenting and medicine during the medical training is stressful. Medical schools can benefit medical student parents by adopting formalised policies and procedures, maximising access to parenting support resources, educating staff on the specific needs of medical student parents and introducing greater flexibility in medical curricula.

Take-home Messages: Although representing a challenge, future sustainable workforce planning in medicine should include faculty embracing parenting in the medical training.
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ABSTRACT:
Background: We have provided Basic Life Support (BLS) lessons including CPR for our university students based on a common lesson protocol. The development of the faculty and lessons over the years was already reported. We modified and developed the BLS course yearly to enhance the educational outcome. The latest update based on the outcome of the previous year in 2019-2020 is reported.

Summary of Work: For our medical, pharmacy, and medical technology school BLS lessons were designed with an objective skill evaluation test. At the end of each BLS class, learners’ competency is strictly assessed by instructors and the measuring devices. An objective assessment of chest compression by the Q-CPR(TM) system is enhanced by the combination of the checklist and non-binary chest compression overall score (CCOS). The goal of skill was set, the lesson is modified toward the mastery learning concept. The skill test was performed up to three times until all students pass.

Summary of Results: In the 2019 study, we set the goal of CCOS score at 95(%) in the 3 hours lesson for 130 medical school students. The rate of students who passed by the first test, the second test is 65.7%, 97.8%, respectively and 3 students failed in this protocol. By reference to this result of medical school, the CCOS goal was optimized and set to 90(%). In the 90 minutes lesson in 2020 for 292 pharmacy school students, students outcome of chest compression was assessed until all students pass the 90% goal. The rate of students who passed by the first test, the seconds test, and the third test were 79.5 %, 91.8 %, 100%, respectively. All students passed the lesson at the level of the expected goal.

Discussion and Conclusions: Learners assessment was optimized by the previous students outcomes. For the concept of mastery learning of university students, skill check with CCOS 90(%) criteria is acceptable in the updated BLS training.

Take-home Messages: BLS standard lessons have been transformed into goal-oriented learning strategies over years. The last updated style is downsized, goal-oriented, and mastery lesson applied with the combined assessment of direct observation and machine scoring.
#EPOD-FD: ePOD - Faculty Development

#EPOD-FD10 Blended learning approach for faculty development workshops during COVID-19 (8501)

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**ABSTRACT:**

**Background:** The COVID-19 pandemic has led to strict measures limiting large group gatherings. Hence, from April 2020, the Centre for Medical Education (CenMED) shifted from face-to-face workshops to a blended learning approach. In this study, we aim to evaluate the participants feedback on blended learning and compare it to previous face-to-face workshops.

**Summary of Work:** Participants were given access to CenMED scholar to complete their self-learning online modules. This was followed by 3 to 5 hour long interactive webinars via Zoom with resource persons and participants. After which, participants had to complete an online 10-question questionnaire comprising of open-ended and closed-ended questions. The results were compared to those of a similar questionnaire conducted in 2019.

**Summary of Results:** From the 6 workshops identified, a total of 111 and 100 responses were obtained in 2020 and 2019 respectively. In both years, more than 75% of participants rated the workshops content presented and usefulness as excellent or good. Across the workshops conducted via a blended learning approach, more than 70% of participants rated the online interactive session as excellent or good. Qualitatively, there were positive comments on the breakout rooms, stating that it was interactive and promoted small group discussion. Ratings on the participants perceived confidence in skills obtained from the workshop were varied. Comparing 2019 and 2020, confident or very confident ratings increased by 27% in Technology Enhanced Learning (TEL) workshop but decreased 31% in the Use of Portfolio in Assessment and Learning (Portfolio) workshop.

**Discussion and Conclusions:** Our findings suggested that the switch to blended learning approach made minimal changes to the participants satisfaction levels. The breakout sessions were well-received as they served as a form of interaction. Our findings also suggested that the blended learning approach is relevant and appreciated for some workshops. However, for others, face-to-face interaction is preferred as it allows for review of work done.

**Take-home Messages:** The blended learning approach works well for most CenMEDs faculty development workshops except the Portfolio workshop.