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1A1 Don’t bother me, I’m learning!
Marc Prensky (Games2train.com)

Video and computer game playing is beneficial to today’s “digital native” students who are using them to prepare themselves for life in the 21st Century. They are learning about important “future” things from collaboration, to prudent risk-taking, to strategy formulation and execution and to complex moral and ethical decisions. Many adults are sadly misinformed about the potential and value of game-playing. There are also however “digital native” teachers who understand how gaming can, among other things, teach advanced problem-solving, language and cognitive skills, multi-tasking and parallel processing.

1A2 Enhancing the development of professional performance: some insights from expert performance and deliberate practice
K Anders Ericsson (Department of Psychology, Florida State University, 1107 West Call St, P O Box 3064301, Tallahassee, Florida, 32306-4301, United States)

The theoretical framework of expert performance is extended to the measurement of professional performance and its development. The key issue is how one can modify professional activities so their quality can be regularly evaluated to provide detailed and reliable feedback to practitioners along with recommendations for suggested deliberate practice in designed practice environments. Insights into the causal learning mechanisms that mediate improvements of measurable performance are now better understood. It may soon be possible to estimate the amount of time of deliberate practice needed to attain certain levels of performance and thus quantify the cost of attaining and maintaining specific levels of performance. Implications of efforts to measure professional performance and its development and maintenance are discussed.
‘Playing the game’: structured educational experiences

Chairperson: Lynne Allery (School of Postgraduate Medical & Dental Education, Cardiff University, Heath Park, Cardiff, CF14 4XN, United Kingdom)
Panelists: Mark Prins (GamesTrain.com), Michael Begg (University of Edinburgh, United Kingdom), Janet MacDonald (Cardiff University, United Kingdom)

Educational theories support the use of variety and interaction in order to stimulate learners and support learning. Educational gaming can be a valuable and useful addition to the medical educator’s repertoire and yet it remains a relatively underutilised resource in this setting. Gaming and simulation provides structured learning experiences. Rather than affording students exposure to a passive, didactic, teacher led session, they provide participants with opportunities to become engaged with the process of active learning, in a range of different ways and in a variety of different learning environments. From the learners’ perspective, educational gaming can assist skills development; provide insight into behaviour and aid self awareness, in a relatively risk free environment. For the medical educator, gaming adds to the versatility of their teaching, providing strategies for attention grabbing, changing the pace of a session and concluding with a memorable summary of the learning that has occurred. However, if any educational benefit is to be derived from the session, it is essential that games are well structured, with well defined rules and clear learning outcomes. So what educational value, if any is there in gaming and how can this be evaluated? Crucially how can they be utilised in a health care context? How do trainers ensure that gaming becomes elevated from mere items of curiosity, with a strong novelty value, but little else to commend them? Crucially how can facilitators ensure that the learning can be transferred to the clinical context and how can they prepare to address unplanned and uncontrolled outcomes that are inherent in the gaming experience? It’s all about ‘playing the game’; this symposium will consider these and other aspects of the structured gaming experience.

Deliberate practice in medical education

Chairperson: William C McGaghie (Northwestern University Feinberg School of Medicine, 3-130 Ward Building, 303 E. Chicago Avenue, Chicago, IL 60611-3008, United States)
Panel: Diane B Wayne (Northwestern University Feinberg School of Medicine, United States): Deliberate Practice and the Acquisition and Maintenance of ACLS Skills; Roger L Kneebone (Imperial College London Faculty of Medicine, United Kingdom): Deliberate Practice and the Acquisition of Surgical Skills; Ross J Scalese (University of Miami Miller School of Medicine, United States): Use of Simulation Technology and Deliberate Practice for Education in Cardiology
Discussant: K Anders Ericsson (Conradi Eminent Scholar and Professor of Psychology, Florida State University, United States)

The deliberate practice (DP) model was introduced by the pioneering scholarship of K. Anders Ericsson in the 1980s. It has since been amplified and extended in scores of research reports in many professional domains including medicine, sports, and the performing arts. Deliberate practice has become a powerful idea that shapes educational program design and research on the acquisition of expertise. In brief, DP has at least eight linked elements: (a) highly motivated learners with good concentration, e.g., medical trainees; (b) learner engagement with a well defined objective or task; at an (c) appropriate difficulty level; with (d) focused, repetitive practice; that leads to (e) rigorous, precise measurements; that yield (f) informative feedback from educational sources, e.g., simulations, teachers; and where (g) trainees also monitor their learning experiences and correct errors, strategies, and levels of understanding, engage in more DP; and continue with (h) evaluation to document expertise or to a mastery standard. Learners may then advance to other objectives or tasks.

This symposium will address the application of the deliberate practice model to medical education. Specifically, panelists will present data and discussion about DP for skill and knowledge acquisition for three medical competencies: advanced cardiac life support (ACLS) skills (Dr. Wayne), surgical skills (Dr. Kneebone), and clinical cardiology (Dr. Scalese). Professor K. Anders Ericsson will discuss the three presentations and provide summary remarks.

MedEdPORTAL and the “Impact Factor” of educational resources

Chris Candler (Association of American Medical Colleges, 16403 W Spring Valley Rd, Gavette, Arkansas, 72736, United States)

Background: The Association of American Medical Colleges has developed MedEdPORTAL to serve as a prestigious publishing venue through which faculty might disseminate their educational work. MedEdPORTAL was designed to promote collaboration and educational scholarship by facilitating the exchange of peer reviewed educational materials, knowledge, and solutions. However, at many medical schools, promotion and tenure committee members are unsure how to “count” an educational work developed by faculty. Even though committee members recognize the value of peer reviewed educational resources, they do not understand how to measure the relative scholarly impact of such work.

Work done: To help authors gauge the scholarly impact of their educational resource, the editorial staff now offer usage reports that provide a detailed report of users that have viewed the full abstract of their published resource on the MedEdPORTAL website. These usage reports may be used by authors to determine, in part, the impact that their MedEdPORTAL publication has had within the medical education community.

Take-home messages: This project is significant in that it will provide a new way of viewing the relative scholarly contribution of educational resources. Heretofore, educational resource development has typically not been considered a bona fide scholarly contribution unless a manuscript describing the project or resources was published in a traditional print-based journal. By showing that successfully peer-reviewed educational resources are subsequently used within the scholarly community we will be able to make a compelling case for the scholarly impact of educational resources developed by medical school faculty.
Short Communications

Teaching and learning evidence-based medicine

2D/SC1 Integration of evidence-based medicine into a PBL curriculum

H Tamim*, M Magzoub (King Saud bin Abdulaziz University for Health Sciences, College of Medicine, Riyadh, 22490, Saudi Arabia)

Background: The College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia adopted a four year PBL web-based graduate medical program. Evidence Based Medicine (EBM) is taught as a stand-alone course in the first year and well integrated throughout the whole curriculum in following years. EBM contents are distributed such as concepts are given in the first year, critical appraisal is covered in the second year, and EBM application in the third year. The objective of this study was to elicit faculty and student satisfaction with this approach in addition to identifying the impact of the course on their attitudes and potential for future utilization in medical practice.

Work done: Data on student evaluation of EBM sessions were analyzed. Focus group discussion was conducted with students to ascertain their satisfaction and future utilization of EBM into their practice. Additionally, student achievement on EBM activities was recorded.
Results: Students were more satisfied with the integrated approach compared to the stand-alone course. They stressed that the integrated course influenced their attitudes positively towards EBM and they showed willingness to utilize EBM in their future medical practice.

Take-home message: Integration of EBM through the curriculum is more effective than a stand-alone course.

2D/SC2 Attitudes, practice and educational preferences towards evidence-based medicine among physicians in a large teaching hospital
Zubair Amin, Marion Aw, Ross Soo, Shirley Ooi, Pary Sivaraman, Yeo Jin Fei, Edwin Chan, Lim Seng Gee (National University of Singapore, 10 Medical Drive, #01-08 Clinical Research Center, Deans Office, 117597, Singapore)

Background: Evidence-based medicine (EBM) is an emerging must-know topic. Present literature is inadequate in identifying the attitudes, practice, and educational needs and preferred interventions of EBM. The objectives of this survey were to identify a) attitude and practice of EBM among physicians, b) perceived benefits of EBM in daily practice, c) barriers to EBM practice, and d) preferred educational interventions.

Work done: Questionnaire-based cross-sectional survey of physicians in a large teaching hospital.

Results: 56% of the physicians described attitude towards EBM in their institute as positive. A similar number of physicians also reported the attitude of their colleagues towards EBM as favourable. 67% physicians believed EBM is useful in daily management of patients. In contrast, only 45% of physicians actually practiced EBM in their daily patient management. The factors that discouraged them from actual practice include a lack of time, lack of exposure to EBM during undergraduate curriculum, lack of endorsement, and fear of criticism by seniors. Physicians preferred less time-consuming and less rigorous educational interventions such as clinical practice guideline, journal club, and case review and discussion for teaching and learning EBM.

Take-home message: There are disconnects between belief and actual practice and between preferred and ideal educational interventions of EBM among physicians surveyed.

2D/SC3 Evidence based clinical teaching in respiratory medicine
Helen Stone*, Rahul Mukherjee (University Hospital Birmingham, Raddlebarn Road, Selly Oak, Birmingham, B29 6DJ, United Kingdom)

Background: Evidence-based medicine is the process of evaluating and optimising patient care, based on current research. This applies to history-taking and examination, and not just to therapeutics and interventions following randomised controlled trials.

Work done: The need to make clinical teaching generally more evidence-based has already been discussed (Mukherjee R. Teaching Evidence Based Clinical Skills. Proceedings of the AMEE (Approaches to Better Teaching) 2002; 9: 4.123). Here, we take the example of respiratory medicine and review the evidence behind items of history and clinical examination techniques. The accuracy of various history and examination interventions and the precision (by Kappa values, i.e. agreement beyond chance) are used to determine the reliability and reproducibility of clinical signs. For example, whispering pectoriloquy has a kappa value of 0.11, whereas dullness to percussion and wheeze have values of 0.52. If history and examination are combined, a greater degree of certainty can be attained.

Conclusions: Evidence-based clinical teaching can be effectively practised in respiratory medicine.

Take-home messages: It is as important to teach medical students the rationale and the evidence base for items of history and examination, as it is for drug therapies because it is relevant to clinical practice and promotes in-depth learning.

2D/SC4 Long-term effects of a standardized course in Evidence Based Medicine (EBM)
K Müller, S Biller*, A Pohl, C Müller, Y Falck-Ytter, J Forster (University Hospital Freiburg, Department of Education, Elsässer Straße 2 m, 79110 Freiburg, Germany)

Background: Little is known about behavioural changes following a final year EBM course in medical school.

Work done: Randomized controlled trial: medical students were assessed during 1st year residency with a standardized pharmaceutical representative (SPR) in a blinded fashion. The SPR presented drugs based on 3 pharmaceutical product dossiers using predefined key words to residents of the intervention (IG) and control group (CG). Their answers were graded on a pre-validated 6 point scale. In addition, interest, alertness and time pressure were recorded.

Results: Five participants in the IG and 8 in the CG could be assessed. Twenty-four participants were completely lost to follow-up and 8 worked in hospitals that could not be reached without disproportional expenses; 4 refused the assessment. Mean scores were continuously higher in the IG compared to the CG but this difference did not reach significance level. However, overall scores were significantly correlated with interest and alertness (Spearman = 0.776/0.726; p = 0.01).

Conclusion: Participants in a final year EBM course appeared to fare better in a real life test using a standardized pharmaceutical representative compared to a control group. Follow-up during career start will have to be optimized to allow for a more definitive conclusion.

2D/SC5 Evidence-based medicine curriculum: impact on medical students in a resource limited setting
C A N Okoromah*, A O Adenuga, F E A Lesi, B B Afolabi, M O Odetola, C I Esezobor, A Ibegwam, C I Okwundu (College of Medicine of the University of Lagos, Department of Paediatrics, Idi-Araba, Lagos, PMB 12003, Nigeria)

Background: In sub-Saharan Africa, evidence based medicine (EBM) is rarely part of training programs. Training in EBM is an efficient strategy for promoting self-directed learning and best practice before and after graduation. We explored the feasibility of a course aimed to improve students’ EBM competencies and their learning in a Nigerian University.

Work done: Clinical and library faculty developed and taught a voluntary, non-credit EBM course that ran concurrently with a three-month paediatrics clerkship. Fifty-four (90%) fifth year students (of a 6 year curriculum) enrolled. A validated EBM competency self-assessment questionnaire was applied to determine changes before and after the course, using appropriate statistical tests.
Results: Students’ self-reported knowledge, skills and attitudes regarding EBM increased significantly. Mean scores for their understanding of EBM concepts increased from 2.20 ± 0.85 to 3.17 ± 0.80 on a 4 point rating scale (P<0.001). Scores for knowledge about effective literature search in EBM practice were similar and high before and after (3.24 ± 0.71 and 3.33 ± 0.89 respectively). Textbooks remained students’ major information resource, but their use of alternative resources increased significantly: Internet (P=0.0003), Cochrane database (P=0.0001) and secondary EBM resources (P=0.045). Reported limitations to EBM practice included lack of training (77.8%) and role models among their teachers (60.9%). Perceived course benefits included enhanced learning style (74.1%) and lifelong learning skills (90.7%). Majority (90.7%) supported the inclusion of EBM course in their undergraduate curriculum.

Conclusion/take-home messages: An EBM course, even with resource constraints, is a feasible, beneficial and desirable educational program associated with significant benefits among medical students.

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Short Communications

2E Curriculum: The education environment

2E/SC1 Validity and reliability of the instruments measuring educational environment in the health professions education: a systematic review

Diantha Soemantri*, Arnoldo Riquelme, Manuel Espinoza, Sue Roff (Faculty of Medicine, University of Indonesia, Salemba Raya 6, Central Jakarta, 10430, Indonesia)

Background: Educational environment as perceived by students has proven to be related to the students’ achievement, satisfaction and success. Many instruments have been developed to measure educational environment in different situations. A review on the validity and reliability of the instruments will suggest the suitable instruments for various fields of health professions education.

Work done: A literature search was performed using Ovid MEDLINE and Timelit databases. Hand searching was also performed by reviewing the references of the retrieved articles. Two independent raters reviewed the retrieved articles. Studies which employed quantitative instruments to measure educational environment in health professions education were included. Following the search strategy, 165 full text studies were reviewed.

Results: Seventy-two studies met the inclusion criteria (with the Kappa coefficient of 0.79). Thirty instruments were identified from those studies, which include 10 instruments for undergraduate medical education, 8 for postgraduate medicine, 7 for nursing education, 4 for dentistry education and one instrument was used for undergraduate and postgraduate medical education, nursing and chiropractic education. The instruments’ psychometric features were analysed and the strongest instruments were identified for different context of health professions education such as undergraduate medical education, postgraduate medical education, dentistry education and nursing education programme.

2E/SC2 Why clinical learning climates differ: participation is vital

Klarke Boor*, Elvira den Breejen, Fedde Scheele, Pim Teunissen, Albert Scherbier (Sint Lucas Andreas Hospital, Postal Box 9243, Amsterdam, 1006 AE, Netherlands)

Background: The clinical learning climate is an important factor in work-based learning.

We evaluated: 1) Whether differences exist between different departments; 2) If so, how these differences can be explained.

Work done: A combination of quantitative and qualitative research was used. We used the Postgraduate Hospital Educational Environment Measure (PHEEM, a validated questionnaire) to evaluate 11 obstetric-gynecologic departments (6 university hospitals, 5 general hospitals). Per department 14 clerks filled out this questionnaire. The two departments which differed the most were further evaluated using qualitative methods. We held individual semi-structured interviews with 7 clerks per department.

Results: The PHEEM showed variation across hospitals: both university as well as general hospitals received high as well as low scores, although the university hospitals in general received lower scores. The semi-structured interviews yielded ‘participation’ as a denominator for variations between clinical learning climates.

Conclusions: We found that clinical learning climates differ using a validated questionnaire. These differences can be qualitatively understood using the ‘participation’ metaphor from socio-cultural discourse on teaching and learning.

Take-home messages: 1) Clinical learning climates differ; 2) These differences can be explained in terms of participation.

2E/SC3 Does the first cohort at a new medical school perceive the educational environment differently from later cohorts?

Susan Miles* and Sam J Leinster (University of East Anglia, School of Medicine, Health Policy and Practice, Norwich, NR4 7NH, United Kingdom)

Background: The first cohort of students at the new medical school at the University of East Anglia (UEA) commenced their training in September 2002. We investigated whether their perceptions of the educational environment were different from those of later cohorts. Till (Med Teach 2004;26(1):39-45) found that the first group of students to go through a new curriculum saw themselves as ‘guinea pigs’, and their DREEM scores were correspondingly lower than subsequent years.

Work done: As part of a standard end of year evaluation all UEA MB/BS students completed the DREEM (Roff et al, Med Teach 1997;19(4): 295-299). The Year 1 DREEM scores of Cohorts 1, 2, 3 and 4 were compared.

Results: Cohort 1 held more positive academic self-perceptions at the end of Year 1 than Cohorts 2, 3 and 4. There were no other differences. Overall DREEM scores were good (143-148 out of 200).

Conclusions and further research: We will continue to investigate student perceptions to ascertain whether perceptions held by later cohorts change after the first cohort have successfully graduated, as it is possible that in these early years of the new course all incoming first year students view the educational climate in a similar way.
2E/SC4  Educational climate during curriculum transformation at a traditional medical school

Nils Danielsen*, Ann-Christine Haftling, Sue Roff, Sean McAleer and Gudrun Edgren (Lund University, Medical Faculty, BMC F10, Lund, SE-221 84, Sweden)

Background: The medical curriculum at Lund University has undergone several changes since 1991. The goal has been to transform a traditional curriculum to an integrated outcome-based curriculum including systematic training in various professional skills. The reforms have been driven by a group of enthusiastic university teachers with support from student organisations and faculty-leadership. The support for change among doctors employed by teaching hospitals has been problematic during certain time periods. The objectives of this study were to measure educational climate in a medical school undergoing change where students meet a mixture of enthusiastic teachers and hospital doctors more relating to their own previous education.

Work done: The DREEM questionnaire was distributed to 240 students in three different terms.

Conclusions: The perception of education climate at our institution was very satisfying. The total score result (72%) and the results on all subscales were very good when compared internationally. The differences between male and female students were few. Some individual questions related to constructive criticism/feedback generated low scores. Our institution also needs to improve the support system for stressed students.

Take-home message: It is possible to generate a good educational climate during curriculum change despite lack of full support from all teachers.

2F/SC1  Implementing standards-based assessment in medical education

William Wrigley (The University of Queensland, Centre for Medical Education, School of Medicine, Herston Road, Herston Qld, 4006, Australia)

Background: The use of standards and criteria to grade the quality of student learning has been a dominant model of assessment in higher education, most often referred to as criterion-referencing. However, in medical education as elsewhere, there is considerable variation and confusion in conceptualizing and applying standards and criteria to measure quality, and limitations in assessment tools have compromised effective valid and reliable measurement. As a result, this model has encountered difficulties in fulfilling accountability requirements and promoting student learning.

Work done: To address these difficulties, this paper describes principles and procedures involved in the development and implementation of a new standards-based assessment paradigm in an Australian medical school. The model placed the determination of standards of quality conceptually at the heart of grading practices. Rating scales consisting of dimensions and criteria of competence that were measured by qualitative standards replaced the use of grades, percentages, weightings, and traditional standards-setting assessment procedures.

Conclusions: Results of statistical analyses of the rating scales from four clinical disciplines are presented. Improvements in feedback methods to aid student learning are described. Current constraints and future improvements are discussed.

Take-home messages: A standards-based assessment model can offer improvements in the conceptual clarity and measurement of the quality of students’ competencies in medical education.

2F/SC2  A comparison of statistical-based approaches to setting a standard for a high stakes MCQ examination

Timothy J Wood*, Robert S Lee, Yves Lafortune (Medical Council of Canada, 2283 St. Laurent Blvd, Ottawa, Ontario, K1G 3H7, Canada)

Background: The Medical Council of Canada’s (MCC) Evaluating Examination (MCCEE) is a multiple-choice question examination that International Medical Graduates must pass before attempting the MCC’s Qualifying Examination Part I (MCCQE Part I). The MCCEE is in the middle of a multi-year project to convert the examination from a paper and pencil-based examination to a computer adaptive examination. A critical issue is how to choose a standard for the new examination.

Work done: Three statistical approaches were identified as possibilities: a Contrasting Groups approach, using a Receiver Operator Characteristic (ROC) curve, and using logistic regression to map probabilities of passing the MCCQE Part I to the MCCEE.

Conclusions: The Contrasting Groups and ROC methods produced cutscores that were considerably higher than the current MCCEE cutscore. Using the logistic regression approach, the current cutscore corresponds to a 25% chance of passing the MCCQE Part I but is it unclear from this approach what probability would be optimal.

Take-home message: All three statistical methods demonstrated that their use was feasible but produced different cutscores than is currently used. Before implementing one of the methods, the MCC must consider the purpose of the examination and the importance of minimizing errors in awarding a pass/fail standing.

2F/SC3  Consistency of standard setting using the Ebel method within the faculty of one UK medical school

Adam Feather*, Paola Domizio, Godfrey Pell, Katharine Bouriscot (Barts and the London, Queen Mary’s School of Medicine and Dentistry, University of London, Centre for Medical Education, 2nd Floor Robin Brook Centre, St Bartholomew’s Hospital, West Smithfield, London, EC1A 7BE, United Kingdom)

Background: The Ebel standard setting procedure is used widely in higher education institutions to set reliable and defensible cut scores. We wanted to examine the consistency of standard setting within one institution.

Work done: Five groups of clinicians from different specialities, with 4 to 7 people in each group, were convened. Two groups consisted of clinicians from the main teaching hospital while the other three consisted of clinicians in district
general hospitals associated with the same medical school. All were currently involved with the design and delivery of the curriculum. Each group independently used the Ebel method to set the pass mark for a high stakes, graduation level, written examination. Their scores were collated and analysed.

Results: There was no statistically significant difference in the pass marks set by each of the five groups of judges.

Conclusions: Faculty involved in the design and teaching of medical students at the same medical school set very similar passing standards for a written examination at graduating level, despite being located in geographically diverse places for their professional practice work.

Take-home messages: The experience and judgements of a range of faculty members, regardless of their clinical backgrounds or geographical distribution, should be utilised for standard setting.

Short Communications

2G

Assessment: The final exam

2G/SC1 Variety is the spice of life: UK medical school finals

Peter McCrorie*, Lesley Southgate (St George’s, University of London, Centre for Medical and Healthcare Education, Cranmer Terrace, London, SW17 0RE, United Kingdom)

A survey of all 30 UK medical schools showed that no two have the same exit examinations (Finals). Styles vary from regular portfolio-based reviews, with no exit exam whatsoever, to lengthy written and clinical examinations, including a 44-station OSCE to 500 MCQs via 3 Progress Tests plus six 45-minute clinical examination stations. A detailed summary of the range of assessments used will be presented, together with views expressed about a national assessment of competence and about sharing assessments among medical schools.

2G/SC2 Assessing medical knowledge – some lessons from progress testing

Chris Ricketts* (Peninsula Medical School, University of Plymouth, Drake Circus, Plymouth, PL4 8AA, United Kingdom)

Background: Although tests of medical knowledge are ubiquitous, it is not always clear what principles should be used in their construction and analysis.

Work done: We have performed detailed analyses of a number of progress tests. Factor analysis of responses suggests that any latent trait model is probably inappropriate for tests of medical knowledge. Assessing medical knowledge could simply be regarded as a problem of estimating the proportion of a domain of knowledge which a candidate has mastered. This has led us to revisit the literature.

Conclusions: Tests of medical knowledge are best regarded as domain-referenced tests and statistical approaches based on item-sampling should be used. This may lead to different estimates of parameters such as the standard error of measurement, which is often used in standard setting.

Take-home messages: When constructing and analysing any test of medical knowledge a clear understanding of the theoretical framework is essential. Which framework is used may affect the way in which standards are set.

2G/SC3 Developing and using a computer-based clinical case study in summative examinations

Martin Veller, Lionel Green-Thompson*, Prof Prozesky (Centre for Health Science Education, Wits Faculty of Health Sciences, 7 York Rd, Parktown, 2190, South Africa)

Background: The ‘formative assessment case study’ technique was communicated to us by the Chinese University of Hong Kong in 2005. Our Department of Surgery investigated the method and, in collaboration with the Chinese University, decided to use it as a ‘summative assessment case study’ (SACS) at the end of each final year clinical rotation.

Summary of work and results: The tool assesses clinical reasoning step by step, and allows integrated assessment of clinical, basic and social science – thereby supporting key elements of our problem-based programme. The series of multiple choice questions in each SACS is supported by relevant images and laboratory results. We have also developed and used SACSs for the final integrated examination at the end of the final year of the undergraduate medical programme, for which is was peculiarly suitable – making it possible to assess material from all the years of the programme in an integrated way.

Analysis of student scores shows good correlation between the SACS and practical clinical examination marks, as well as the overall rotation marks.

Take-home message: Each SACS is based on a real clinical case. It makes it possible to assess the clinical reasoning process in a valid and reliable way, as well as integrated assessment of a wide range of disciplines.

2G/SC4 Mock exams – a sure winner?

K Hurt*, A J Morris, J Hawkins, J Fisher, B Askew, W Ifield, P Lee, BV Prathibha (William Harvey Hospital, Kennington Road, Willesborough, Ashford, Kent, TN26 1HX, United Kingdom)

Background: The third year medical students at Kings College, London, undertake a timed clinical examination at the end of each 13 week rotation. The students are anxious about this and this can interfere with learning during their rotation and hamper their performance at exams. Whilst there are many courses for post-graduate exams, there are no formal mock exams for medical students. We undertook a structured mock exam for these students 2 weeks prior to their final exam.

Work done: The exam was held during week 10/11. This was then scored and the students given individual feedback about their performance. The following week, teaching was concentrated around areas of weaknesses. The students then took their final exams. The median score achieved by our students was 90.63%,(with 3 students achieving 100%) against a class median of 75%. Feedback from the students about the mocks was sought.
Workshop 2H  Use of Generalizability Theory in designing and analyzing performance-based tests

David B Swanson (National Board of Medical Examiners 3570 Market Street, Philadelphia, PA 19081, United States)

Background: Performance-based testing methods (e.g., OSCEs, oral exams) are commonly used for assessment of clinical competence. Because these methods involve multiple sources of measurement error (e.g., rater stringency, task difficulty, and content specificity), classical test (true-score) theory does not furnish the tools needed for investigation of their psychometric characteristics. In this workshop, participants will learn to view assessment situations from the perspective of generalizability theory, which does supply the necessary conceptual and statistical tools to estimate the reproducibility of scores on performance-based tests and evaluate alternate approaches to test design and use of testing resources.

Structure: Interactive, seminar format that includes discussion of results of statistical analyses of performance-based testing methods commonly used in the health professions.

Intended audience: Medical school faculty and others involved in assessment in the health professions.

Level of workshop: Intermediate. (The workshop will not assume any familiarity with generalizability theory; however, participants must be comfortable with analysis of variance for multifactor designs with repeated measures.)

Workshop 2I  Developing and evaluating item-based assessment tools: applying new concepts in validity to medical education

David A Cook*, Thomas J Beckman (Mayo Clinic College of Medicine, Div. of General Internal Medicine, 200 First St SW, Rochester, Minnesota, 55901, United States)

Background: Item-based assessments (knowledge tests, observer ratings, surveys, etc) are ubiquitous in education, research, and clinical practice. To be meaningful, scores from these instruments must be reliable and valid. The paradigm for validity has evolved recently such that the unitary model of construct validity has replaced the fractionated model of face, content, and criterion validity. This workshop will review a step-wise approach to developing and evaluating item-based instruments. Using practical cases and examples from our own research we will illustrate how the validity argument is carefully structured based on five sources of evidence: content, response process, internal structure, relations to other variables, and consequences. We will also discuss the critical relationship between reliability and validity, and review various methods to measure reliability.

Intended outcomes: Learners will be able to a) differentiate five sources of validity evidence; b) plan the development and evaluation of a hypothetical Item-based instrument; c) critically appraise the validity of an existing instrument’s scores; and d) contrast different methods for measuring reliability.

Structure: Highly interactive combination of didactics, discussion, and hands-on exercises

Intended audience: All educators and researchers who assess learners (nearly everyone!)

Level of workshop: Beginner/intermediate.

Workshop 2J  How can workplace teaching and learning be illuminated by contemporary sociocultural theory?

P W Teunissen, T L Dornan, K V Mann (VUmc, institute for medical education, Van der Boechorststraat 7, Amsterdam, Postbus 7057, Netherlands)

Background: Learning in workplaces is of pivotal importance in undergraduate (UGME) and postgraduate (PGME) medical education. A new understanding of how workplace experience helps clerks and specialist registrars develop is emerging from sociocultural research. This workshop will consider how such research can illuminate clinical teaching and learning.

Intended outcomes: Participants will: (1) identify components of the developmental processes of clerks and specialist registrars; (2) use sociocultural insights to interpret workplace learning as a process embedded in, and shaped by, a human context, and understand similarities and differences between UGME and PGME; (3) develop ways to turn descriptive models of learning into instructional strategies.

Structure: The workshop will be interactive and include small group work. We will outline sociocultural theory then illustrate it with examples from our own research, considering similarities and differences between UGME and PGME. Participants will consider, first in small groups then in a plenary group, practical implications of sociocultural learning theory including strategies to address the educational environment. Role modelling and reflective learning will be considered.
Workshop 2K

A practical introduction to assessing the CanMEDS competencies

Jonathan Sherbino, Denyse Richardson, Jason R Frank (Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, Ontario, K1S 5N8, Canada)

Background: Competency-based education is an emerging approach in the health professions, however many educators struggle with how to assess certain domains of competence.

Intended outcomes: By the end of this session, participants will be able to: (1) Identify the spectrum of assessment tools; (2) Describe the major strengths and weakness of the tools; (3) Identify assessment gaps of CanMEDS competencies; (4) Adapt an assessment tool to a specific educational context.

Structure: This workshop is a practical, evidence-based approach to assessing the CanMEDS competencies. Based on a systematic review of the education literature, a spectrum of common assessment tools will be presented with a case-based discussion on the modification and application of these tools to specific programs and educational contexts. Each workshop participant will perform a brief competency-based evaluation of a program of their choice to identify assessment gaps. Participants will be coached in the adaptation of an assessment tool to fill one identified gap. Finally, workshop facilitators will lead a group discussion of common competency-based assessment challenges. Using real world examples, a problem-solving approach will be emphasized and potential solutions discussed.

Intended audience: Medical educators with an interest in competence assessment and competency-based education.

Level: Beginner/Intermediate.

Workshop 2L

The student in difficulty

John Cookson¹, Norma Saks², Subha Ramani³, Nigel Bax⁴ (¹Hull York Medical School, University of York, YO10 5DD, UK; ²Robert Wood Johnson Medical School, United States; ³Boston University School of Medicine, United States; ⁴The University of Sheffield, United Kingdom)

Background: Every medical school has experience of students who encounter a range of academic and professional difficulties. Additional support for such students will often see them overcome their problems, but there are times when this is not successful and difficult course progression decisions have to be made, often considering "mitigating circumstances". This workshop will address issues relating to such decisions by reviewing the evidence base and by discussing the related experiences of the presenters and participants.

Intended outcomes: Participants will have a greater understanding of issues relating to students in difficulties and the wide range of possible solutions, both personal and institutional.

Structure: Participants’ previous experience of students in difficulty will be briefly explored. There will then be two short presentations on the evidence base and possible solutions to students’ difficulties. Participants will then discuss in groups a number of real but anonymous scenarios. Possible solutions will be brought together in a plenary session at the end.

Intended audience: Staff who make decisions about student progression and those who counsel students in difficulties.

Level of workshop: Intermediate/Advanced.

Posters 2M

Admissions/Selection

2M/P1 Academic and non-academic predictors for acceptance to medical studies at Witten/Herdecke University – findings of a QUEST-analysis

M Hoffmann*, M A Rieger, T Ostermann (University of Witten/Herdecke, Faculty of Medicine, Alfred-Herrhausen-Strasse 50, D-58448, Germany)

Background: For more than 20 years the University of Witten/Herdecke has adhered to its own concept and procedure of selecting students. Since 2005 this application procedure consists of a written and an oral application phase (assessment center). Within this study a retrospective classification of all applicants in the year 2005 was conducted, with the objective of finding academic and non-academic predictors for acceptance at Witten/Herdecke.

Work done: All 172 applicants of the assessment center received a questionnaire asking for: age, gender, high school graduation mark, type of school, main school subjects, intended career and attendance at open house. All duly completed questionnaires were classified according to the QUEST model from the viewpoint of acceptance versus refusal to medical studies at Witten/Herdecke. The QUEST model classifies the items of the questionnaire in sequence of declining power and in coherence to the targeted variable (acceptance).

We report on the rank order as well as on sensitivity and specificity of the predictors identified by the QUEST analysis. Furthermore statistical findings will be illustrated and it will be discussed in how far these results confirm and support the expected quality criteria of the admission process at Witten/Herdecke University.
2M/P2  
Analysis of academic achievement of transferred medical students in Yonsei University Medical School, Korea  
Seung-Hee Lee (Yonsei University, Department of Medical Education, School of Medicine, Seoul, 120-752, Republic of South Korea)  
Background: Yonsei University Medical School, South Korea is about to adopt a new admission system in 2009 for postgraduate medical school, in which 4-year college graduates apply to it, instead of high school graduates applying to undergraduate medical school. To prepare for the new system, an admission policy is being intensively investigated. In the present admission system in Yonsei Medical School, college or university graduates with diverse majors such as pharmacy, biochemistry, engineering, social science and so on other than a medical major can be transferred into the undergraduate medical course when a vacancy for enrollment is available. This study was performed to analyze the academic achievement of the transferred students for establishing a new admission system.  
Work done: In this study, the Grade Point Averages (GPA) of 94 medical students transferred for years 1998 to 2006 were analyzed regarding academic and personal background, and compared with those of untransferred medical students.  
Results: The results showed some features. Particularly, the GPAs of transferred students with the majors of art and social sciences were not lower than those with the major of natural sciences while transferred students with majors of pharmacy, veterinary science, nursing science, and biotechnology had their high academic achievements during the undergraduate medical courses.

2M/P3  
Effect of a pre-University orientation course on applicants’ ranking in the medical admission test  
P Falaschi*, M L Morisani, L Brienza, M R Belcunti, R Baldini, R Heyn, F Cicone, E Gaudio, V Ziparo, G Familiari (II Faculty of Medicine, University of Rome “La Sapienza” and Regional School Office of Latium (Public Education Ministry), via di Grottarossa 1035, via Ostiense 131/L, Rome, 00189, Italy)  
Background: A pre-University orientation network has been activated between the University of Rome “La Sapienza” and 105 high schools of Rome (www.orientamentoinrete.it). The aim of this project is to prepare high-school students to pass the medical admission test supplying the applicants with the minimal knowledge required in the health and biomedical areas.  
Work done: An evaluation of the effects of a pre-University orientation course on student admission in the medical school at the University of Rome “La Sapienza” in the academic years 2003-2004 and 2004-2005 was developed. A preliminary statistical analysis was carried out on a sample of 120 students.  
Results: Our results show that students who attended the pre-University orientation course had a higher ranking when compared to the control group who did not attend any preparation course.  
Conclusion: The higher scores achieved by students who attended the pre-University orientation course support its efficacy in terms of minimal knowledge acquired in the health and biomedical areas.  
Take-home messages: The e-learning cooperative network between Universities and high schools enhances basic science preparation of medical applicants. Therefore, the pre-University orientation course has a positive effect in terms of students’ ranking.

2M/P4  
Are personality characteristics related to academic success and could they be used as part of a selection procedure?  
Glynis Pickworth (University of Pretoria, Pretoria, 0002, South Africa)  
Background: In the selection of students to undergraduate veterinary training, the students’ previous academic performance, as well as the results of an interview, are often used. This study investigated the relationship between personality and academic success.  
Work done: Students from three entry cohorts to the second year of study of a six-year veterinary undergraduate programme at the University of Pretoria completed the 16 Personality Factor Questionnaire. A meta-analytic approach was used to estimate the relationship between academic performance in two major final year subjects, and academic performance on entry, an interview score, and the personality factors.  
Conclusions: The study confirmed the value of previous academic performance and the interview in the selection process. The value of various personality characteristics in good study and examination performance was highlighted by the results. These personality characteristics were being conscientious, emotionally stable, socially adept, self-disciplined, being practical rather than imaginative, and being relaxed rather than anxious.  
Take-home messages: It appears worthwhile to consider the inclusion of an appropriate personality questionnaire in the selection process. A sound personality make-up will not only be beneficial in the achievement of academic success, but should also be beneficial in the successful management of a veterinary practice and enjoying veterinary science as a career.

2M/P5  
Comparative study on academic achievement  
Wanida Saeung*, B Warachit (Hatayai Hospital, 182 Ratakern Road, Hatyai, Songkhla, 90110, Thailand)  
Background: Hatayai Medical Education Center (HMEC) and Faculty of Medicine, Prince of Songkhla University (PSU) are collaborating to produce medical students for rural areas of whom the first batch graduated in 2004. This study was to compare the academic achievement of sixty-one 6th year medical students at Hatyai Hospital, consisting of 3 categories: knowledge, clinical and problem solving skills and professionalism.  
Work done: The methods consisted of authentic assessment using rubric score. The assessment was taken after completing training in 5 major departments. Obstetrics-Gynaecology, Surgery, Medicine, Pediatric and Orthopedics. Student were divided into 2 groups of HMEC and PSU.  
Results: The score in every competency category showed no significant difference between the 2 groups. Among the subjects no significant difference was found in 4 departments except Pediatrics department in knowledge (P=0.008), clinical and problem solving skills (P=0.02) and overall score (P=0.019). However there was no statistical significant difference in professionalism (P=0.073).
Conclusion: Even though the curriculum of two institutes is the same but the teaching and learning methods are different, the academic score at the 6th year indicated no significant difference in four departments except in Pediatrics. The higher cumulative GPA of PSU medical students may affect difference in knowledge, clinical and problem solving skills.

Take-home message: Medical students from HMEC were recruited from rural areas, got a lower entrance examination score and GPA but could graduate as competent physicians.

2M/P6 Association between interviewee's background and the outcome of Multiple Mini-Interview (MMI)
Keh-Min Liu*, Yi-Hsin Yang, Min Liu, Jwu-Lai Yeh, Chung-Sheng Lai, Chun-Hsiung Huang (Kaohsiung Medical University, College of Medicine and Graduate Institute of Oral Health Sciences, No. 100, Shin-Chuan 3rd Road, Kaohsiung, 807, Taiwan)

Aim: The purpose of this study was to investigate the relationship between interviewee's personal background and the outcome of Multiple Mini-interview (MMI).

Work done: The Multiple Mini-Interview, was first adopted to select graduate-entry medical students at Kaohsiung Medical University in 2006. There were ten 7-minute stations in the MMI tests. Scores (0-25) of 10 stations and their average were outcome variables (0-25), and analysis factors included gender, age, and undergraduate background of the interviewees. The ANOVA tests and general linear models (GLM) were used to evaluate the simple and multiple effects.

Results: Eighty applicants who passed the written test participated in the MMI. The average scores at the ten stations ranged from 15.3 in "ethical consideration" to 20.3 in "reasons for studying medicine". After all the effects were mutually adjusted in GLM models, none of the 10 outcomes was significant between male and female students. The age effects in "presentation of autobiography" and "critical appraisal", and overall average were found significantly different. In addition, the undergraduate background was also found significantly (p-value=0.0292) related to "communication skills".

Conclusions: Age and undergraduate background may be more favorable in the MMI tests, because they appear to result in higher scores.

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2M/P7 A comparison of stress levels, coping styles and psychological morbidity between graduate entry medical students and mainstream medical students in the UK
R Zwua*, F Oyebode, L A Jones (Medical School, University of Birmingham, Education Unit and Department of Psychiatry, University of Birmingham, UK, B15 2TT, United Kingdom)

Background: In common with several medical schools in the UK, Birmingham University Medical School has set up a four year Graduate Entry Course (GEC) to run alongside the traditional five year medical degree course. All GEC students at Birmingham have at least an upper second-class (usually a first-class) honours degree in a life science discipline. We hypothesised that levels of stress and psychological morbidity would be higher among the GEC students compared to the mainstream medical students, and that coping styles would differ between the two groups.

Work done: All first and second year GEC and mainstream medical students were invited to take part in the study. Response rates were 75% (64/85) from the GEC students and 46% (346/750) from the mainstream students.

Results: Perceived stress levels and rates of psychological morbidity were high among both groups of students, but the groups did not differ significantly on the measures administered. There were significant differences in the coping styles of the two groups. The GEC students were more likely than the mainstream students to use active coping (p=0.02), substances (p<0.001), positive reframing (p=0.03) and planning (p=0.05), and were less likely to use religion (p=0.01). Implications for student support will be discussed.

2M/P8 Admissions criteria and success in medical fields of study
A Syed Ali, S Gentsch, F Nuernberger, J Schulte* (Office of the Dean, Medical Faculty, Johann Wolfgang Goethe-University Frankfurt/Main, Theodor Stern Kai 7, D-60590 Frankfurt/Main; Institute of Educational Psychology, Senckenberganlage 15, D-60325 Frankfurt/Main, D-60590 Frankfurt/Main, Germany)

Background: Since 2006, German medical faculties are allowed to select 60% of their own criteria. German High School examinations, called Abitur, enable the students to enter Universities. By no means are these examinations standardized, since high school students can choose among diverse disciplines.

Work done: To obtain significant predictors for a successful medical university education, all applicants were asked for their high school grades and their electives. Preclinical and clinical grades based on examinations of various courses were obtained from the institutes and clinical branches.

Results: All together, we have collected high school grades and all available university grades for 800 preclinical and 650 clinical students. General high school grades (Abitur) explain about 35% of study success, specific subjects are better predictors, i.e. grades in math and foreign language.

Conclusions: High school grades as a single predictor are no optimal predictors for study success, likely due to major differences between both high school electives and grades.

2M/P9 Study progress of graduate entry medical students
Erika Österholm*, Olli Jääskeläinen, Anna-Lisa Kolviolto, Pekka Kääpä (Medical Education Research and Development Centre, University of Turku, Lemminkäisenkatu 1, FIN-20520, Finland)

Aim: To assess the experiences of graduate entry medical students on their studies and study progress.

Work done: During a 4-year period (2003-06) 85 graduate entry students were admitted to the Medical faculty of the University of Turku, Finland, after graduation from a polytechnic school and two years of practical training in health care professions. Two-thirds (66%) of these students responded to our questionnaire survey dealing with challenges and progress of their studies.
2N/P1  Evaluation of communication/consultation skills (2nd year medical students and 3rd-4th year nursing students) using simulations with role-players/standardised patients an interdisciplinary approach

Nuala Walshe, Tony Ryan, Rob Gaffney, Connie Wiskin* (UCC, School of Nursing & Midwifery, Brookfield Health Sciences Complex, Cork, Ireland)

Background: The co-location of the Nursing and Medical School UCC provides opportunities to develop interdisciplinary learning activities and projects. This study is reported as the first step in achieving the overall goal of developing an Interdisciplinary Communications Module using role-play as instructional and assessment methodologies.

Work done: This study evaluated the communication skills of 2nd year medical students and 3rd-4th year nursing students and determined the number requiring enhancement using the paradigms of skills and attitudes. Staff from the University of Birmingham were retained to introduce students and staff to role-play and train faculty staff in the use of the validated assessment descriptors. Experienced role-players from the same faculty were retained to role-play the agreed scenarios and concurrently train a group of potential Irish role-players. Students were independently graded by the experienced role-player and assessor. All role-plays were digitally recorded using an integrated AV system. Student feedback by role-player was immediate. Focus group interviews post role-play indicates favourable response to role-play and feedback by students.

Results: In total 64 nurses attended, 18.75% referred for enhancement, 46 medical students attended 25% referred (19% not Irish born). Comparisons between role-play and assessor in progress. Student and faculty feedback positive.

Conclusions: Role-play is effective methodology in identifying students requiring support. Interdisciplinary approach effective.

2N/P2  A model of training on physician-patient communication skills of medical students

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Background: Acquiring good communication skills has been acknowledged to be an essential component of medical education.

Work done: A physician-patient communication module for the 6th year medical students has been initiated for the first time in Turkey in Cukurova University Faculty of Medicine in 2005. The purposes were that, the students will be able to initiate, maintain, and terminate the interviews with their patients properly and also lead their staff appropriately. The module was conducted for four days, by two to three trainers in groups consisting of 10-13 students. The main topics were basic communication skills, leadership, challenging situations in physician-patient relationships, opening the visit, empathizing, enlisting the patient as a partner, cooperation, discussing the treatment regimen and closing of the interview. The training methods were questions and answers, discussion, role playing, imagination, slide presentations, brain storm, student scenarios, group works and discussion of a related movie on the topic.

Conclusions: The evaluation was made on the basic assessment forms. The feedbacks of the module were excellent. Modifications were planned on proposals regarding timing, contents, and suggested practices.

Take-home message: A physician-patient communication module should be regarded as an indispensable part of medical education. 
**2N/P3**  
**Assessment Of communication skills in clinical students and correlating it with cumulative grade (GPA) in King Faisal University**  
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**Background:** Understanding the patient verbal and nonverbal cues is pertinent to imparting the proper treatment for cure of disease.

**Work done:** Rating communication skills in 6th year female medical students. Studying the correlation of communication skills scores with GPA. Thirty-six 6th year students were observed by two different raters during the long case final clinical examination for medicine and pediatrics for assessment of their communication skills using a modified 5-point-Likert scale checklist. Scores on each skill and overall scores were correlated with the GPA of these students.

**Results:** Students had low scores in general. They showed significant deficiencies in some communication skills (introducing themselves to the patient, putting a summary at the end, and showing respect to the patient). Significant negative correlation was found between GPA and showing empathy to the patient ($r = -0.387$). Although five communication skills (listening to the patient, r = 0.39, establishing rapport $r = 0.36$, giving explanations $r = 0.42$, organizing the conversations $r = 0.36$, and not using medical jargon $r = 0.37$) had significant positive correlation with GPA, no correlation was found between GPA and the overall scores.

**Conclusions:** It was concluded that our medical students need training to communicate well with patients and that students’ GPA does not reflect their level of communication.

**Take-home message:** We cannot rely on standard assessment tools to evaluate communication skills.

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**2N/P4**  
**Teaching and assessing the way of breaking bad news**  
Eeva Pyörälä (Research & Development Unit for Medical Education, P.O.Box 63, Haartmaninkatu 8, 00014 University of Helsinki, Finland)

**Background:** Breaking bad news is an essential communication skill in medicine.

**Work done:** In an 8-station-OSCE at the end of the 5th study-year, one station focused on communication skills, particularly on breaking bad news about breast cancer. The students had a course on breaking bad news in the 4th study-year.

**Results:** The overall level of the students’ OSCE performance was relatively good. Their average mark was 14/20, and only 5 out of 116 failed. Nearly all students told the bad news in an understandable way. All students explained the forthcoming treatment plan. Their performance was lowest in the following aspects: informing about the patient support groups (19%), using a lead-in before breaking the news (24%), asking about family history of breast cancer (40%), seeking patient’s consent for treatment plan (41%), and offering a sick leave (42%).

**Conclusion:** A course on breaking bad news including guidelines for this kind of encounters and rehearsals with standardized patients led to a relatively good performance in OSCE. However, OSCE results also pinpointed challenges for further teaching.

**Take-home messages:** A communication skills program requires both systematic teaching and assessing the way of breaking bad news. Learning goals should be updated using assessment data.

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**2N/P5**  
**Foundation for communication skills in year 4 medical students at Saraburi Regional Hospital, Thailand**  
Pania Mukeepong*, Aree Subsombat (Saraburi Regional Hospital, Saraburi Medical Education Center, 18 Tedsaban4 Rd, Muang District, Saraburi, 18000, Thailand)

**Background:** Communication skills are essential and critical for physicians. Teaching of these particular skills needs to be explicit and well structured. Since 2003, Saraburi Medical Education Center had developed a program for teaching of communication skills for year 4 medical students during their introduction to clinical medicine course. The program aims to provide students with a foundation of the values, knowledge and skills used to communicate in their clinical learning and professional work context.

**Work done:** Saraburi Medical Education Center had conducted a foundation program for communication skills for year 4 medical students since 2003. The program comprises of didactic lecture of basic communication skills, problem-cases, small group activities, role play and group discussion. Evaluation of the program and student opinion was obtained for further improvement. The students’ opinions are highly positive toward the program and they feel confident to apply it in the future.

**Conclusions:** The foundation program for communication skills successfully prepares the students and enables them to develop skills in their clinical learning context.

**Take-home message:** While foundation for communication skills aids student preparation, longitudinal integration of the teaching is required to boost for their skill development.

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**2N/P6**  
**Communication skills training by video feedback method**  
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**Background:** Effective communication is essential to the practice of high quality medicine. There are methodological challenges in communication skills training. There is compelling evidence that experiential methods of communication skills instruction are superior to more traditionally didactic approaches.

**Work done:** 40 medical students were involved in this study. We had 20 medical students in each group. Both groups first participated in communication skills classes and then their clinical skills were evaluated with objective structured clinical examination (OSCE1). Then group one participated in a video feedback workshop and then their clinical skills were evaluated by OSCE2 after two months. Also clinical skills of group two without any intervention after OSCE1 were evaluated by OSCE2 after two months. The score of OSCE1 and OSCE2 of both groups were compared to each other.
Results: The mean score of clinical skills in OSCE1 of both groups were compared and the results showed that there was no significant difference between both groups. Group one had significantly higher clinical skills scores in OSCE2 after video feedback workshop compared to the clinical skill scores of group one without video feedback workshop.

Conclusion: Despite the potential difficulties, video recording remains a most valuable tool for communication skills training.

2N/P7 Introducing communication skills course in the undergraduate medical education curriculum of School of Medicine of Tehran University of Medical Sciences
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Background: Communication skill (CS) is a core clinical skill essential to clinical competence. There is nearly nothing about it in MD curriculum of School of Medicine of Tehran University of Medical Sciences. We have designed and implemented a 7 day course for teaching and learning CS to our medical students just before entering the clinical phase.

Work done: The content of the course covered interpersonal skills communication skills with patients (Calgary-Cambridge Guide) and 8 specific issues in CS. Students discussed about parts of CCG in small groups (10-12 in each group), then saw a video clip of patient physician relationship and found the related aspects of that part of CCG in the film. Each student had the opportunity to interview one standardized patient. The SPs had been used in a CSt course for the first time in Iran. The course has been evaluated by a daily evaluation form, final evaluation form and a focus group discussion with 10 students.

Results: The course has been delivered during February 2006 for 130 students. The satisfaction rate was as follows: overall 68.72%, input 70%, process 66.87%, and outcome 71.18%. 87.7% believed that the course is necessary for other students, 93.7% of them stated that they will use skills they have gained in their relationship with patients.

Conclusions/Take-home messages: The course was successful in its intended outcomes. There is an urgent need to expand CS teaching in medical students’ curriculum.

2N/P8 How do osteopaths use their senses in an osteopathic clinical examination?
Jorge Esteves*, John Geake, Charles Spence (Oxford Brookes University, Westminster Institute of Education and School of Health and Social Care, 40-42 Windmill Road, Headington, Oxford, OX3 7BX, United Kingdom)

Background: Osteopathic clinical examination is a multisensory experience that requires the integration of visual, tactile, and proprioceptive information regarding the assessment of tenderness, asymmetry and restriction of motion and tissue texture changes in the context of presenting symptoms and history. Diagnostic information arising from the senses can, however, sometimes be incongruent, hence delaying its classification and even, on occasion, leading to misdiagnosis. Understanding multisensory integration may provide an explanation for the poor reliability of diagnostic tests in osteopathy.

Work done: We explored how osteopaths use their senses in an osteopathic examination. Three participants at different levels of expertise examined eight subjects with chronic back pain twice. Two camcorders supported analysis. The osteopaths had to diagnose a somatic dysfunction in the spine and pelvis. The expert spent significantly more time than both the intermediate (p=0.04) and novice (p=0.00) using vision and touch simultaneously. Higher levels of expertise examined eight subjects with chronic back pain twice. Two camcorders supported analysis. The osteopaths had to diagnose a somatic dysfunction in the spine and pelvis. The expert spent significantly more time than both the intermediate (p=0.04) and novice (p=0.00) using vision and touch simultaneously. Higher levels of intra-examiner agreement were also observed for the expert.

Conclusions: Preliminary results suggest that during the development of expertise in osteopathy the integration of visuotactile information becomes central to the diagnosis of somatic dysfunction thus contributing to increased reliability.

Take-home messages: Investigating multisensory integration in clinical examination may illuminate the debate regarding the reliability of diagnostic tests in osteopathy and appropriate teaching strategies may therefore be developed.

2N/P9 Skill lab in new curriculum of Shahid Beheshti Medical School
A Rajaie*, F Bitajian (Shahid Beheshti Medical School, Evin, Chamran Highway, Tehran, 19395-4719, Iran)

Background: Skill lab as a safe environment for well planned clinical learning experiences has been considered in all phases of the new undergraduate medical education (UME) program in Shahid Beheshti Medical School for the first time.

Work done: In the basic science phase the normal physical exam is taught in the skill lab. The main goal in this phase is to integrate surface exam land marks with students’ knowledge of anatomy. The major part of clinical skills training begins in the second phase of the program. First of all students learn the physical exam and history taking principles in the skill labs and then will have some supervised experiences in the wards with real patients in more than 110 hours of the semiology course. Abnormal physical findings and specific procedures are planned to be taught in the skill lab concurrent with relevant clinical rotation in clerkship phase (Phase III) and a practical objective structured exam of these skills is given at the end of the course. Some more critical skills such as CPR will be reviewed again in the internship phase in the skill lab.

Conclusion: Students’ surveys found a high rate of satisfaction and most students believe in the efficiency and effectiveness of such training.

Take-home message: Planned use of skill lab enriches clinical skill training in the UME program.

2N/P10 Why clinical skills with indigenous languages in the MBChB programme at the University of Cape Town
Jason Marcus*, Rae Nash (University of Cape Town, Faculty of Health Sciences, Anzio Road, Observatory, Cape Town, 7925, South Africa)

Background: Indigenous languages are incorporated into the undergraduate MBChB clinical skills programme. The Constitution of South Africa guarantees access to health services as a fundamental right. Diagnostic reasoning as well as the health education received by patients as a result of adequate history taking in the language of the patient would be improved.
Work done: Anecdotal evidence suggests that patients receive less than what they rightly can expect in terms of health care as promised in the country’s Constitution. This has implications for the patients’ experience of the health care encounter, adherence to treatment, and subsequent recovery from illness. Furthermore the “cultural competence” of health providers is achieved by improving the skill of medical students in their communication with health care users.

Conclusion: Weaving language into the Clinical Skills Programme, both of which are new skills to most of the students, provides the opportunity to produce doctors that are able to break down the barriers in providing effective health care within the South African context. Furthermore the right to health care access is promoted.

Take-home message: Equipping students with the language of the patient allows for a better practitioner who is able to improve the health encounter experience for their patients as well as him/herself.

**2N/P11 Patients teaching clinical skills: a review**

Mais Al-Hity*, Vikram Jha, Naomi D Quinton, Trudie E Roberts (University of Leeds, Medical Education Unit, Level 7, Worsey Building, Leeds, LS2 9JT, United Kingdom)

Background: Traditionally patients had a passive involvement in medical education with disease symptoms or signs utilised as a teaching tool. Patients now have a more active role in educating doctors, including involvement in the teaching and assessment of clinical skills.

Work done: This paper discusses the results of a literature review exploring the various roles of the patient in teaching clinical skills. The review provides a description of the range of clinical skills taught by patients in medical education and evaluates the validity and effectiveness of these teaching methods.

Conclusions: The involvement of patients teaching clinical skills is an important and ongoing area of research within medical education. Teaching of clinical skills by patients may be the initial aim; however, many authors suggest that other educational outcomes, pertinent to training as a doctor, for example interpersonal skills and communication skills, are satisfied.

Take-home message: The value and effectiveness of patients teaching clinical skills is still unclear despite many years of research. Facilitation of the development of appropriate attitudes and behaviours toward the patient encounter may be an additional and welcome by-product of patient involvement.

**2N/P12 The MDI technique of medical students in asthma management**

Chakarin Wattanamongkol (Department of Internal Medicine, Prapokkla Hospital, Leabern Rd, Watmai, Mueng District, Chantaburi Province, 22000, Thailand)

Background: The MDI technique is an important factor for successful asthma management. The study objectives are to identify the proportion of medical students who have a good MDI technique and contributing learning factors.

Work done: All clinical-year medical students were asked to perform MDI technique (scored as MDI scores, 0-8 points), explain the objective of inhaled asthma medication (scored as Asthma Management Scores or AMS, 0-4 points) and answer the questionnaire about MDI technique learning.

Results: Forty-four students were enrolled, 97.7% had ever attended patients with obstructive airway diseases and 31.8% had never taught their patients to use MDI. Mean for MDI scores was 5.09 ± 1.75 points. Only 27.3% had good technique (MDI scores > 6.5 points). Factors associated with good technique were AMS > 3 points (p=0.035), demonstration experience at more than one service area (p=0.017), self-learning (p=0.003) and self-reported reliability of their technique (p=0.016). By logistic regression analysis, self-learning was the only independent factor associated with good technique (p=0.02) and adjusted odd ratio was 11.53 (95%CI: 1.48 – 89.67).

Conclusions: Only a small proportion of medical students had a good MDI technique and an important factor contributing to good technique was self-learning.

Take-home messages: Students should be motivated towards self-learning about MDI technique.
2O/P2 Use of an electronic stethoscope in clinical veterinary training
Karen MacEachern (University of Glasgow Veterinary School, Bearsden, Glasgow, G61 3EZ, United Kingdom)

Background: The electronic stethoscope has two major advantages in clinical training: (i) sound is amplified up to 30X aiding the discrimination of faint sounds; (ii) sounds can be stored and replayed at a later date allowing a library of physiological and pathological sounds to be accumulated for teaching and reference purposes.

Work done: At the University of Glasgow Veterinary School, undergraduate veterinary students participated in a trial to assess the value of accessing digital stethoscope recordings of equine auscultation. Digital recordings were made of normal and abnormal sounds of the heart, lung fields and four quadrants of the gastrointestinal tract. Half the students (40) were given access to these recorded sounds before listening to live animals, the other half of the group not.

Results: Using a standardised assessment scale, students with access to the recorded sounds were more confident in the clinical use of a stethoscope when compared to the control group. The student group that did not have access to the recorded sounds were given access to the recordings after listening to live animals. All the students recognised that the material would have aided their clinical examination of the horse.

Conclusion: The electronic stethoscope is a valuable learning tool for students in veterinary education.

2O/P3 Understanding and managing learner distress in simulation and debriefing
Andrea E Waddell*, Georges Savoldelli, Vicki R LeBlanc (Wilson Centre, University of Toronto, 200 Elizabeth Street, 1ES-565, Toronto, Ontario, M5G 2C4, Canada)

Background: Health professions’ education is witnessing an undeniable growth in the use of simulation for training and evaluating medical trainees. By recreating some of the stressors and challenges of the clinical environment, educators can trigger emotional reactions and stress responses in the learner. While moderate emotions can facilitate the learning process, strong emotional reactions and/or distress can both interfere with the learning process and create discomfort for both the learner and the educator.

Work done: Based on a review of the simulation, cognitive and social psychology literature, we will discuss how institutional, cultural, facilitator and individual learner factors can contribute to a learner’s emotional reaction to challenging simulation scenarios. We will also discuss key issues and recommendations for the prevention and management of student distress prior to, during, and following simulation sessions.

Take-home messages: Learning under stress is not a negative experience to be avoided; however, high levels of distress need to be identified and mediated. Simulation educators have an important role in designing the simulation session, and in shaping the learner’s experience. As such, they need to consider the broader context of the learner’s experience and use this knowledge to prevent, reduce and manage student distress.

2O/P4 Acquisition of practical skills in endoscopy: Does age matter?
J E F Fitzgerald*, A Simpson, C Maxwell-Armstrong (Department of Surgery, Nottingham University Hospital, Derby Road, Nottingham, NG7 2UH, United Kingdom)

Background: Graduate entry medical courses are offered at 14 UK medical schools and significant numbers of older graduates are entering clinical practice. Recent studies have sought to identify factors influencing acquisition of practical skills for endoscopic procedures yet none have explored age.

Work done: Students undertook simulated flexible sigmoidoscopy (AccuTouch Endoscopy simulator). Thirteen undergraduates (4 male, 9 female, average age 24) and seven graduate entry students (5 male, 2 female, average age 37) completed six procedures (total: undergraduates 78, postgraduates 42). None had previous experience. Three simulations were basic, followed by three of increasing difficulty.

Results: Mann-Whitney U test analysis showed graduate entry students performed better in the second procedure with marginally significant total time (P=0.013) and time to full advancement (P=0.0063). No significant differences were otherwise demonstrated. First attempt took average 13 minutes, attained depth of 50cm and visualised 51% of mucosa. Red-out time was 20% and maximum force 1.5N. By the third procedure average time was 11 minutes, depth 60cm, and visualised mucosa 63%. Time in red out was 15% and maximum force 1.3N.

Conclusions: Performance of older graduate entry students was comparable to younger undergraduates. Their initial faster performance on procedure two was matched by undergraduates in subsequent procedures. Overall, age did not affect individual performance.

Take-home messages: Graduate entry students are comparable to undergraduates in their acquisition of skills for endoscopy. No specific learning requirements or training needs for graduate entry students were identified in this study.

2O/P5 Development and evaluation of acute care high fidelity simulation course for foundation trainees
Indu Sockalingam*, Guillaume Alinier (Department of Anaesthesia, Lister Hospital, Stevenage, Hertfordshire, SG1 4AB, United Kingdom)

Background: It is essential to train foundation year trainees (FY) to become competent in assessing acutely ill patients as laid out in the foundation curriculum. The European Working Time Directive and the restricted protected time for on-the-job learning, limits training.

Simulation technology could be used to improve doctors’ clinical skills in a controlled safe environment. The aim of this study was to introduce and evaluate a new acute care high fidelity simulation course using SimMan for FY1 & 2 trainees. This course aims to improve their ability to manage acutely ill patients.

Work done: 80 trainees participated. Emergency scenarios were formulated integrating the curriculum needs. A fully facilitated feedback was given at the end of each scenario.

Data collected by a pre and post simulation questionnaire using 5 point Likert scale was analysed.

Results: All trainees commented that it was an excellent course (5.0), the scenarios were realistic (4.8), improved their clinical knowledge (4.2), skills (4.5), and increased their confidence in managing emergencies. Further results will be presented.
2O/P6 The experience of laparoscopic simulation by surgical residents

Yun-Chen*, Pei-Chun Lin, Shu-Hsun Chu (Division of Medical Education, Far Eastern Memorial Hospital, No 21, Sec 2, Nan-Ya South Rd, Banciao, Taipei, 220, Taiwan)

Background: Surgical skills are required by a wide range of professionals. Laparoscopic surgery is a new trend. However, surgical residents find it hard to learn the skills merely by transitional teaching practices. We introduced a virtual reality (VR) simulator to improve the surgical skills of laparoscopic appendectomy.

Work done: The simulation was conducted by 5 junior surgical residents at Far Eastern Memorial Hospital in Taiwan. Simulation was done by using a portable VR simulator in learning laparoscopic appendectomy, such as looking for the appendix, grasping the tissue, suturing and cutting. The residents were evaluated by performing a laparoscopic appendectomy on patients with simple appendicitis before and after simulation training under supervision by a tutor. Main outcome was evaluated by the operation time and blood loss. Results: The results show significantly decreased operation time and blood loss after simulation training and improved the laparoscopic surgical technique.

Conclusion: Residents can improve their skills on laparoscopic surgery through training on a VR simulator. Thus, VR simulation could be useful for shortening the learning curve of surgical residents on laparoscopic surgery.

Take-home message: VR simulators can provide safe, realistic learning environments for repeated practice and facilitate the laparoscopy skills training of surgical residents.

2O/P7 The impact of simulation on simulated patients

Henrike Hoelzer*, Annette Froehmel, Johanna Kretschmann (AG Reformstudiengang, Charité-Universitätsmedizin, Charitéplatz 1, 10117 Berlin, Germany)

Background: Simulated patients (SPs) have been used to teach and assess communication skills at the Charité-Universitätsmedizin Berlin, Germany since 2000. Many complain about occasional stress symptoms related to their simulation work. On the other hand they report great benefits from their occupation. The goal of our study is to find out, how the SPs themselves cope with stress, what stresses them and how to avoid stressful situations.

Work done: To assess how SPs deal with their task and its strains two focus groups (n=15) were conducted in 2005. SPs discussed, which situations had been especially stressful and whether and how they managed to deal with them. In addition to that the SPs were asked to fill out questionnaires (n=74) asking them about stress symptoms related to their performance in Objective Structured Clinical Examinations (OSCEs) with especially demanding roles in 2006 and 2007.

Results: The greatest difficulty for the SPs seems to be to establish and maintain a clear cut division between the case and their own personality. The interpretation of the focus groups' discussions indicated that previous experiences with physicians as well as cultural stereotypes about the medical profession influence the way SPs perform.

Conclusions: Various suggestions will be made how to alleviate the SPs' task.

2O/P8 Adolescent Standardized Patients’ simulation of suicidality: is it safe?

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Background: Adolescent Standardized Patients (ASPs) perform suicidality simulations. Theoretically, ASPs with a background history of suicidality are at risk of suicide contagion with these simulations. This poster reports a study evaluating the safety of ASPs’ simulation of depression and suicidality.

Work done: ASPs were randomly assigned to suicidality or pediatric roles. Measures of simulation effects included the Suicidal Ideation Questionnaire (SIQ) and Reynolds Adolescent Depression Scale-2 (RADS-2), both of which were completed pre/post study. ASPs scoring in the clinical range were eligible for study participation with clinical monitoring. Implicit behavioural effects were measured because adolescents may not be fully cognizant of effects associated with stressful simulations as humans maintain an “adaptive unconscious”, a mental system that guides emotions and behaviours yet is unavailable to introspection. Implicit behavioural measures included the Implicit Association Test.

Results: Three of twenty-four ASPs had clinical RADS-2 and/or SIQ scores. ASPs’ mental status, in particular suicidality did not deteriorate with participation. ASPs in the suicidality role showed implicit behavioural effects suggestive of a transient depressive reaction.

Conclusions/Take-home messages: ASPs participated in a suicidality simulation without evidence of suicide contagion. Caution with ASP suicidality simulations is warranted for ASPs’ implicit reactions suggested a transient depressive reaction.

2O/P9 Comparison of clinical skills centers in the United States and Russia: The East Carolina University/Kazan University experience

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Background: Kazan State Medical University realized the value of adding standardized patients to an already established simulated learning experience for medical students. East Carolina University realized the value of adding simulation (mechanical) to an already established standardized patient program. Collaboration on a project to train faculty, standardized patients, and develop curriculum in Russia provided the groundwork for developing the first clinical skills center in a Russian medical school at Kazan.

Work done: Russian faculty and United States faculty visited to plan and develop a clinical skills assessment program in Russia. Lessons learned by the United States faculty have resulted in inclusion of mechanical simulation in an established clinical skills program. Training and assessment materials from East Carolina University were shared with Kazan, a site visit from East Carolina University began to train standardized patients and Russian faculty in utilizing training concepts and materials.
Conclusions: Both rewards and challenges exist in international collaboration on a large scale. United States medical schools can benefit from International examples of mechanical simulation training and assessment protocols. International medical schools can benefit from United States examples of human simulation training and assessment protocols. Collaborative experiences can provide opportunities to learn lessons from both mechanical and human simulation.

Take-home message: Opportunities are arising for integrated mechanical and human simulation education and assessment in Simulation Centers across the globe. International collaboration while challenging, provides expertise and opportunities for advancing simulation on both fronts.

2O/P10 Development of an e-curriculum for the “practical year”
Hubert Liebhart*, Stephanie Brachmann, Susanne Abele, Bernhard Böhm (Kompetenzzentrum E-Learning in der Medizin Baden-Württemberg, Albert-Einstein Allee 11c, 89081 Ulm, Germany)

Background: The practical year is divided into 3 Educational Chapters: Internal medicine, Surgery, and Electives. During this time a student should gather knowledge, medical skills and ethics under supervision and direct control of experienced doctors at the bedside.

Work done: Quality e-learning cases were defined and developed in the Institute. The cases were checked for usability, content correctness, and didactic and technical quality. The cases and consequently all of the content have been placed in the IVA (Integrated, Virtual Education) Learning Management System and provided to the students.

Results: The students have the opportunity to deepen their knowledge with the help of electronic media and to apply it practically. The main goal is to improve the medical education.

2O/P11 Development of online learning tools to improve the knowledge and skills of primary care professionals in Geriatrics
Kieran Walsh (BMJ Learning, BMA House, Tavistock Square, London, WC1H 9JR, United Kingdom)

Background: BMJ Learning is an online learning website for health professionals. It produces interactive learning resources to enable them to update their knowledge and skills. One of its main target audiences is primary care professionals. These users have consistently requested learning resources in Geriatrics to better care for such patients in the community. To help meet these needs, BMJ Learning produced a series of learning modules in Geriatrics.

Work done: BMJ Learning produced a series of 8 modules on common Geriatric conditions in primary care. These included overactive bladder, Parkinson's disease, influenza, heart failure, gastrointestinal bleeding, deep vein thrombosis, myocardial infarction and tuberculosis. All the modules were interactive cases – these involved a pretest, a number of cases and a post-test. A total of 2063 users completed these modules.

Results: Doing the modules enabled learners to improve their score from the pretest to the post-test by a statistically significant amount (p < 0.001). Qualitative feedback was positive.

Conclusions: We feel that the results show that online learning modules are effective at helping primary care professionals learn about Geriatrics.

Take-home messages: We encourage other providers of online learning to increase the amount of learning resources that are available in this area.

2O/P12 Use of a Computer Assisted Learning package to consolidate postgraduate practical procedure training in renal biopsy
M Williams*, D King, S Carr (University Hospitals of Leicester NHS Trust, John Walls Renal Unit, Leicester General Hospital, Gwendolen Road, Leicester, LE5 4PW, United Kingdom)

Background: Following introduction of “The European Working Time Directive” and “Modernising Medical Careers” the number of hours a Specialist Registrar (SpR) spends in training is reduced.

Work done: To address this challenge, we produced a CD-ROM to augment experiential teaching of renal biopsy. 12 SpRs evaluated the package using Kirkpatrick’s model. We assessed reaction and confidence - using Likert scales (1-6) and learning by pre and post course assessment.

Background: Knowledge scores increased 13% after use of the package and showed reduction in correlation between prior experience and assessment scores: pre to post-test (0.727 v 0.306). Less experienced trainees increased score more than experienced (20 v 2%). Trainees found it effective for revision, consolidation (5.125) and for learning (4.333).

It was useful for learning patient selection (4.8) and preparation (4.9) but less useful for learning to perform the skill (4.01). Ratings were high for presentation (5.5), relevance (5.2) and use of time (5.1). More experienced trainees did not find it challenging (4.1).

Conclusions: This evaluation demonstrated that use of a short package in the work place with text, questions, video, and commentary is a useful tool to consolidate knowledge required to achieve competence in a practical skill for specialist trainees, especially early in training.

2O/P13 “Clinical Skills Online” – who uses it and why?
Arnold Somaundraem, Terry Poulton, David Cleverly (St. George’s University of London, e-Learning Unit, Centre for Medical and Healthcare Education, London, SW17 0RE, United Kingdom)

Background: Teaching clinical skills has traditionally been an entirely face-to-face encounter. Students are now increasingly encouraged to participate in self-directed learning to facilitate their understanding of these skills.

Work done: The Clinical Skills Online (CSO) project developed a series of videos demonstrating core procedural skills, freely available online for all students and teachers.

Results: Analysis revealed the majority of users were medical students (49%, n=31200), followed by staff (12%) and nursing students (13%). An online study (n=590) indicated 50% of students used the videos as a revision aid and 37% to pre-familiarize themselves with the procedure. There can be differences in medical opinion on the best way to perform a clinical technique. Further data to be presented will answer important questions on the perceived value of these resources. Would each video be acceptable to every clinician involved in teaching? Are there regional considerations that limit the reuse of these resources? Do students value mobile access to videos on clinical placements?
2O/P14 eViP: An EC-funded project to create a bank of multilingual, multicultural, virtual patients

Terry Poulton*, Emily Conradi, Uno Fors, Martin Fisher, Soeren Huwendiek, Rachel Elaway, 6Bas de Leng, David Davies, Valentin Muntean, Piotr Laidler (St George's University of London, London, SW17 0RE, United Kingdom; Karolinska Institutet, Sweden; Ludwig-Maximilians-Universitaet, Munich, Germany; Hidelberg University, Germany; MEDBiquitous; Universiteit Maastricht, Holland; University of Warwick/IVIMEDS, England; Universita 'Iuliu Hatieganu' Cluj-Napoca, Romania; Universtyt Jagielloński, Poland)

Background: Medicine and healthcare face the problem that opportunities for student-patient contact, which is at the heart of clinical competency, is declining in European Union (EU) states. Training is hampered by healthcare budget constraints that limit clinical teaching, and the reduction in the time that patients stay in hospital. Electronic virtual patients (VPs) are effective tools for developing clinical reasoning. However, VPs are time-consuming and expensive to produce, and even leading e-learning institutions cannot produce enough to give full coverage of the medical or healthcare curricula.

Work done: In 2006, several major European e-learning centres in medicine and healthcare submitted a bid to the EU to create a shared online repository of the partners’ VPs, for the improved quality and efficiency of healthcare education across the EU. Their large collection of electronic VPs is to be pooled, adapted to a common technical standard, and repurposed for multicultural, multilingual access. The bid, now in its final stages of negotiation, catalysed the emergence of a community of practice in VP development, which linked with major US developers of healthcare education standards, MedBiquitous, to begin to define a standard for the interoperable use of VPs. Some of the intended uses for these VPs will be described.

2O/P15 Building faculty infrastructure in an academic simulation center

Sara Kim*, Brian Ross, Tom Benedetti, Carlos Pellegrini (University of Washington, Department of Medical Education, Box 357240 1959 NE Pacific E312, Seattle WA, 98195, United States)

Background: Retaining faculty devoted to training is a common problem in simulation centers. This problem is frequently attributed to the lack of support for faculty promotion. We describe several measures being implemented at ISIS (Institute for Surgical and Interventional Simulation) for creating and retaining a dedicated pool of faculty members.

Work done: We report five processes. First, Department chairs are asked to identify faculty members, who are assigned at least 10% protected non-clinical time with responsibilities in simulation-based teaching. Second, an education specialist assists recruited faculty members with curriculum development in their specialty areas. Third, the curricular materials undergo formal internal peer-review processes involving 2-3 peer reviewers. Fourth, data collected from simulation sessions are regularly analyzed for improving future sessions. Lastly, ISIS prepares and houses faculty portfolios containing key educational activities and scholarly products. This portfolio has been designed to meet the requirement for academic promotion. Currently we have 8 faculty members recruited from 4 departments for ISIS simulation training.

Conclusions: Building a faculty infrastructure dedicated to educational activities is integral to the ISIS core mission. Take-home messages: Sustaining and strengthening faculty infrastructure in a simulation center depend on on-going support for faculty members’ career development.

Posters

2P1 Clinician-educators reflect on what has changed and what remains essential in medicine and medical education

Justin Jagosh (Simon Fraser University, School of Communication, 8888 University Ave, Burnaby, British Columbia, VSA 156, Canada)

Background: North American medical culture has been significantly transformed over the past 30 years. This research explores the idea of good doctoring by asking medical teachers to reflect upon what has changed and what aspects remain essential in the field of medicine.

Work done: Qualitative research methods were used to ask 20 clinician-educators to reflect upon (a) changes that have taken place in the profession during their career span, (b) factors that ensure medical excellence and (c) what curriculum planners should consider when planning undergraduate medical training programs.

Results: Physicians spoke about a number of changed aspects including the change in demographics and morbidity, the evolution in technology, the proliferation of medical information, the need for interdisciplinary collaboration, as well as different attitudes and competencies of young medical students compared to their predecessors. Universal aspects included the physician’s ability to connect with a patient, think clinically, listen, communicate, and observe.

Conclusions: Physicians play a role with patients beyond being the gatekeepers of biomedical science. Medical teachers and learners can work on defining this role from a reflection on the changing and essential aspects of good doctoring, situated in particular historical and cultural contexts.

2P2 Teaching and the impact on healthcare delivery: the informal curriculum

Kandy Collings*, Ginevra Read, Paul Bradley, Angela Lait (Peninsula Medical School, Clinical Skills, The Knowledge Spa, Royal Cornwall Hospitals Trust, Truro Cornwall, TR1 3JD, United Kingdom)

Background: The literature regarding the informal curriculum in medicine often fails to recognise positive ‘paying it forward’ features. Formal undergraduate teaching usually involves senior medical staff whilst undergraduates may
The roles of a good teacher – opinions of Brazilian medical students in “preclinical” and “clinical” periods
José Fernando de Castro Figueiredo*, Maria de Lourdes Veronese Rodrigues, Luiz Ernesto de Almeida Troncon, Marco Antonio de Castro Figueiredo, Carlos Eli Piccinato (Faculty of Medicine of Ribeirão Preto, University of São Paulo, Brazil, Av. Bandeirantes, 3900 - Campus Universitário - Ribeirão Preto, SP 14048-900, Brazil)

Background: In different phases of the Medical Course students may have different opinions about the roles of medical teachers.

Work done: A self-administered questionnaire (5 point Likert Scale), with 13 items related to the roles of a medical teacher was applied to 31 students of the second year and to 29 students of fourth year of the Faculty of Medicine of Ribeirão Preto, Brazil.

Results: The students from the clinical period considered more important than the students from the preclinical period the following roles: Institutional Administrator (p=0.03); Students’ Evaluator (p=0.04); Professional Skill and Competence as a Physician (p=0.04); Planner of Curriculum/Courses (p=0.02); Producer of Teaching Material (p=0.01). For the others roles (Institutional Evaluator, Receiver of Financial Resources, Researcher, Active Member of the University, Model of Attitudes and Values, Provider of Information in Medical Practice, Provider of Cognitive Information and Tutor/Facilitator/Consultant) the opinions of the students were similar.

Conclusion: During the development of the course the students attributed more value to activities related directly to curriculum planning/development and teaching/evaluation in the medical practice.

Take-home message: Junior medical students have unrealistic perceptions of the roles of a medical teacher, which may contribute to the origin of the difficulties to adapt to the medical course.

Nursing students’ perceptions of effective clinical instructors in Jahrom Medical School in Iran
Sedigheh Najafipour*, F Bizay, Majid Najafipour, Fatemeh Najafipour (Jahrom Medical School, Educational Development Center, Jahrom, 7134, Iran)

Background: Currently, teachers are fully responsible for clinical teaching, which creates an environment in which students and teachers must develop a close working relationship. In addition, the faculty has a significant influence on students’ feeling of success or failure in clinical practice, so clinical nursing faculty must possess four categories of important qualities: professional competence, interpersonal relationship, personality characteristics, and teaching ability. The main purpose of this study was to understand these four categories of qualities.

Work done: 70 nursing students completed the questionnaire, using a 5 point Likert-type scale.

Results: The results showed an effective teacher must be have Teaching ability (mean=64.0), personality characteristics (mean=36.8), Interpersonal relationships (mean=33.3) and professional competence (mean=26.2). In the teaching ability category items “motivates students to learn” and “encourages students to think and learn independently” acquired most important to important score. Also these items in the personality characteristics “has an enthusiastic attitude in clinical teaching” and “accepts reasonable opinions and methods” have received important to most important scores by students. On the other hand, in the professional competence part, two items “has sufficient professional knowledge” and “explains and demonstrates new techniques” are relatively important to little important. Conclusions: Based on these findings teaching ability is still the most important category for effective clinical instructors according to students’ views.
Survey on effective factors of on the job satisfaction in faculty members of Sari Medical School 2006

Mansoor Ranjbar*, Mehdi Ahangari, Kourosh Vahidshahi, Mitra Mahmoudi (Mazandaran University of Medical Sciences (MUMS), Valie-Asr Boulevard, Sari, Mazandaran 4815733971, Iran)

Background: Human resource is the main corner stone of development, and motivation is one of the most important factors for their optimal function. Detection of the motivational factors of faculty members (FM) is very important in quality improvement of education, so important factors of job satisfaction were investigated.

Work done: This was a descriptive cross sectional study. All FMs filled out the questionnaire including demographic and educational information plus 43 questions about effective factors of job satisfaction. Data were analyzed by Likert 5 scaling (very important to not important) and SPSS software.

Results: In total 80 FMs have completed the questionnaire. 65.3% were male. Age of participants was 42.8 ± 7.3 years. 8.2% were trainers, 73.5% assistant professors and 18.4% associated professors. 38.1% were in the section of basic sciences and 61.2% were in clinical sciences. The most important factors of job satisfaction were income, and economic aspect, job conditions, and ability for development. The least important factors were quality of supervision by managers of the system, communication in the peer group and positive reinforcement by students. Effective variables factors about job satisfaction were educational group (basic sciences or clinical), graduated degree and administrative condition of faculty members.

Conclusions: This study indicated that external factors are more important than internal factors. These facts should be observed in the future.

What did we gain from the AMEE conference?

K Sawasdichai, C Ngampiyasuk (Prapokklao Medical Education Center, Leabnoen Rd, Muang District, Chanthaburi, 22000, Thailand)

Background: Executives and medical teachers of CPIRD program have joined the AMEE Conference since 2002. This study aimed at evaluating their gained interests.

Work done: The interests gained by 195 executives and medical teachers of CPIRD program, after participating yearly in the AMEE Conference from 2002 to 2005, were evaluated using questionnaires. There were 125 respondents (64.10%), consisting of 35 executives and 90 medical teachers.

Results: Of the 125 respondents, 70 (56%) attended pre-conference workshops and 21 (16.8%) presented either posters or short communications. What motivates them to participate in the conference were the expectation of gaining medical education knowledge, learning how to conduct a research study and having the opportunity of sightseeing. After the conference most of them were satisfied with what they had expected to gain. Fifty-one medical teachers subsequently conducted further research and 44 topics from 21 medical teachers were presented. In their opinion, besides those who have to present their work or research, the staff that should be selected with priority to participate in the AMEE Conference are the experienced teachers and medical education executives.

Conclusion/Take-home messages: The AMEE conference is one of several staff development programs and can help creation of new medical education research.

Helping cohesion and enriching outcomes: a matricial approach in a new Health Sciences Education Center

Bernard Millette*, Monique Chaput, Raymond Lalonde (Centre de pédagogie appliquée aux sciences de la santé, Faculté de médecine, Université de Montréal, C.P. 6128, Succ. Centre-Ville, Montreal, Quebec H3C 3J7, Canada)

Background: Many academic milieus trail to ensure an environment favourable for the development of a true hive of health sciences educational experts that would produce rich and dynamic faculty development and research activities. At University of Montreal, we first worked hard to envision the future of our new Health Sciences Education Center. A major challenge was to emulate individuals, working mostly in silos, to cooperate positively all together: cultural revolution was needed!

Work done: We used innovation as a lever for changes! Instead of aligning our functioning on old divisional frontiers and rules, we put in place a matricial organisation and used a “by project” approach. So, our coordination team expects inputs from all participants (from faculty development, evaluation, research, professional continuous development, ethic, information technology...). As an example, around our outcome-based curriculum project, we developed many related projects such as on-line faculty development activities, research on these changes and new ways to evaluate competencies. All these improvements were made possible thanks to our decision to adopt known successful approaches from the business field (strategic planning, matricial functioning, approach by projects) and to the strong contribution of an expert in management. All this gives us a strong new breath to go forward in education.

Questionnaires in medical education: is there a need to hunt for the last respondent?

Ted A W Splinter*, Karen M. Stegers-Jager (Erasmus MC Institute of Medical Education and Research, Office Ff2.17, PO Box 2040, Rotterdam, 3000, Netherlands)

Background: A potential threat for the accuracy of the outcomes of questionnaire-based research are non-response errors caused by substantial differences between respondents and non-respondents on characteristics under study. We investigated possible non-response errors for a questionnaire on student diversity and study performance.

Work done: We compared the study performance of 354 fourth-year medical students, who either responded to the questionnaire on the first, second or third call or did not respond due to absence or omission. The questionnaire was spread during compulsory practical education. Study performance was defined as first-year GPA, months to complete the first year of the curriculum and study rate during the first three years (credits per month).

Results: Respondents on the first call outperformed all other students, except for the omitted students (not shown).
Conclusion: Students not present at the first call are in this study not to be considered as Missing At Random, as absence is related to lower study performance. So in this case there is a need to hunt for the last respondent.

### 2P/P10 Academic medicine: caught between two worlds

**Eric L Dey**, Casey B White (University of Michigan, Center for the Study of Higher and Postsecondary Education, 610 E. University, Ann Arbor, MI 48109-1259, 48109, United States)

**Background:** Physician educators working within academic medicine settings make their contributions at the intersection of two very different worlds. Within the academic sphere medical educators serve as faculty members who are, as a group, often recognized as leaders in active learning and assessment fields. Academic physicians also practice medicine in a clinical environment that offers a different set of resources, challenges, and rewards than those working in other environments. Given this, what do we know about the current experience of academic physicians?

**Work done:** Using a national survey of college faculty conducted in 2004 by the U.S. Department of Education, we examine the experiences of academic physicians working within American higher education. The survey database contains responses from 963 faculty members teaching directly in medical fields, with additional faculty teaching in medical school and supporting areas. Comparisons of their faculty experiences, teaching practices, and consideration of other employment settings (both within and outside of academia) are presented to create a data-based portrait of the challenges facing American academic physicians.

### Workshop

#### 2Q The innocent murmur: methods of effective instruction and assessment

**Donald D Brown**, Joel Felner, Ira Gesner (University of Iowa; Emory University; University of Florida, United States)

**Background:** Increasingly auscultation of murmurs, and in particular, the assessment of whether a murmur is innocent or not, has deteriorated into simply ordering an echocardiogram. Simulation provides an effective tool to correct this behaviour and hopefully markedly reduce unnecessary health care costs.

**Intended outcomes:** Participants should learn the appropriate auscultatory and other physical examination tools whereby they and those that they instruct can effectively master the distinction between innocent murmurs and murmurs truly reflecting pathology. In addition, the participants should come away with the methodology as to how this can be incorporated into the curriculum both for learning and for evaluation.

**Structure:** The initial presentation will involve demonstration of heart sounds and murmurs focused on the approach to delineating if a murmur is innocent. This is intended to be an interactive session. Discussion will then follow in part based on the workshop facilitators' experience in the use of the tool within the curriculum both for instruction and for evaluation.

**Intended audience:** Curriculum directors as well as instructors in basic and cardiovascular physical examination and medical students and residents.

**Level of workshop:** Beginners with at least a basic familiarity with heart sounds and murmurs plus health care personnel with moderate and more advanced cardiac auscultatory skills.

### GIME

#### 2R Good Ideas in Medical Education (GIME) 1: The Curriculum

(Demonstrations on display throughout the day in the Exhibition Area on Monday 27 August)

**2R/G1 Adding structure to problem based learning: A tutorial innovation**

**Eve Espy**, Tony Ogburn, Ellen Cosgrove, Summers Kalishman, Meggan Zsemlye (University of New Mexico, 2211 Lomas Blvd NE, Albuquerque, NM 87131, United States)

**Background:** Problem-based learning has been adopted by many medical schools in the form of pure discovery learning case-based tutorials. Concerns about inconsistent and superficial preparation for tutorial and knowledge transfer of key concepts in different scenarios led the University of New Mexico to add the following structured elements to enhance learning: Advance preparation with a graded assignment prior to the tutorial session, review and presentation of research articles, oral case presentation, and a “cornerstone” presentation. We will share our experience and lead a group discussion of diverse approaches to problem based learning.

**Methods:** We surveyed second year medical students at the completion of two consecutive blocks at the end of the preclinical curriculum in 2004. Students were surveyed after the Renal Block (n=73) which used the traditional tutorial format and after the HS&R Block (n=70) which used the structured tutorial format. Survey items included questions about the extent and depth of learning, use and appraisal of learning resources, and overall quality of the tutorial experience. We calculated means with 95% confidence intervals and compared them at an alpha of .05. We conducted an additional survey of students and tutors who took the block in 2004 and 2005 and tutors at the conclusion of the HS&R Block (n = 14) to assess the value of specific components of the structured tutorial format and overall attitudes.
Results: All students and tutors completed the surveys. Compared to the traditional format, students indicated that the structured tutorial format allowed a greater improvement in their basic science and clinical knowledge, their clinical management skills, and their ability to evaluate and appraise information presented (p< .05). Over 90% of students indicated that the take-home materials were valuable and the problems sets were valuable, and over 70% of students indicated that the presentation of research and the cornerstone presentation were valuable. All tutors responded that the structured format enabled students to be better prepared for tutorial than the traditional format and 93% would recommend the structured tutorial for other blocks in the curriculum.

Conclusions: We demonstrated the acceptability of a structured tutorial format to students and faculty tutors. The structured format enhanced student participation in tutorial and fostered knowledge transfer to a variety of case scenarios. We are currently working on integrating the structured tutorial into the curricula of third year students and OB-GYN residents.

Demonstration: We will gather materials that would allow an interested educator to initiate a structured tutorial format and give a brief video presentation focusing on implementation.

2R/G2 Management and leadership education for medical/healthcare students – Puzzled? Puzzling? Puzzle your way into having it in your school
Henrique M G Martins (Faculdade de Ciências da Saúde – UBI/Serv. Medicina I – HFF, Av. Infante D Henrique, 6200-506 Covilhã, Portugal)

Background: Management and Leadership (M&L) are only rarely being taught at medical schools worldwide. These are areas of increasing relevance for modern healthcare but its introduction in the undergraduate curricula has faced difficulties, amongst which are schools’ difficulty to understand its importance and know how to organize this type of education. This demonstration of an innovative idea in medical and healthcare professions education aims to show what are some of the things you need to introduce this type of education in your own school. At the same time it will serve as a meeting point with the demonstrator, who can share his personal experience in teaching M&L to medical students in a few schools/countries. This then serves as a basis for discussion and links on to future projects/collaboration.

Format: The format of the presentation is an interactive one. While there will be a poster/Laptop PC displaying some of the key ideas, it’s a simple puzzle game that will help interested visitors to grasp what are the key aspects and resources needed if a medical or healthcare school wants to develop in this area. These vary from curricular change, deanery support, to identifying few healthcare professionals, doctors, nurses, with some training in management, and linking to hospital administration and business schools. With this simple game, participants can see the several pieces of what is needed to provide healthcare students with an understanding and a few tools in healthcare management and leadership in a dynamic and interactive way.

Intended audience: Everyone is invited to come and see this demonstration as well as bring their own ideas and experiences. The author is also available to help foster this “GIME” from this AMEE conference onwards into each of the interested schools’ daily life.

2R/G3 Using a logic model in the evaluation of educational programs
Danielle Blouin*, Simon Gregory, Elza Mylona (Faculty Development, Queen’s University, 82 Barrie St., Kingston, ON, K7L 3N6, Canada; East Midland Healthcare Workforce Deanery, UK; Stony Brook University, New York, USA)

Background: A program logic model outlines the steps from program design to implementation to outcome evaluation. It comprises five components: inputs, activities, outputs, outcomes, and long-term impact. Its use encourages program planners to move beyond measuring activities and outputs to measuring outcomes. Only recently has it been applied to the evaluation of health education programs.

Intended outcomes: At the completion of this demonstration, participants will be able to:
1-define the different components of a logic model
2-identify these components for one of their own educational programs
3-analyze the impact of each component on the evaluation of their program

Structure: The presenters will demonstrate the use of a logic model in the evaluation of educational programs. In particular, they will give concrete examples of possible content for each component of the logic model (inputs, activities, outputs, outcomes, and long-term impact), as it applies to various educational curriculums. Strategies to evaluate potential outcomes of interest will be discussed.

2R/G4 Academic Support skills for faculty and professionals: practical applications from cognitive psychology, basic physiology, and the study of athletes’ peak performance
Lawrence ‘Hy’ Doyle (David Geffen School of Medicine at UCLA, Dean’s Office/Ed&R, CHS 60-051/Box 951722, Los Angeles, CA, 90095-1722, United States)

Background: Academic support activities have traditionally introduced students to basic learning skills such as note-taking, time management, reading, memorizing, etc. As students advanced, re-familiarization with those skills supplemented by specific refinements for new class materials has proven sufficient to help medical students to competently deal with the torrent of information that steadily increases, in both volume and complexity. However, practical advances from fields such as Cognitive Psychology, Physiology and the Study of Peak Performance, can help faculty and academic support professionals to be more effective in coaching to be more than merely competent, to better bring academic achievement more nearly in-line with a student’s potential. Discussions of, and practice using, insights from cognitive psychology can have significant effect. Areas of exploration may include: the chunking of information, the effect of proactive vs. retrospective inhibition, the impact of diurnal cycles of alertness, the results of massed vs. spaced practice, each can help students expand upon basic skills. As can considerations of the impact of sleep, exercise and diet on learning and examination performance. Finally, practice with the essentials from sports psychology in areas such as relaxation, visualization, monitoring of self-talk, effective goal setting, and pre-performance rituals, all can help students to better ‘show what they know’.

GIME Session goal: to give participants the opportunity to discuss and to practice a sampling of the skills noted above.
Symposium

3A Patient focused simulation

Chairpersons: Roger Kneebone, Debra Nestel (Imperial College London, 2nd floor QEQM Wing, St Mary's Campus, Praed Street, London W2 1NY, United Kingdom)

Patient focused simulation (PFS) is the innovative combination of a real human being (simulated patient, actor) with a physical or virtual reality simulator. The aim is to provide a safe yet authentic context for learning and assessment of procedural skills, combining the benefits of simulation with the cues of real life clinical encounters. The presence of a real person taps into the clinician’s own practice, while offering feedback about subtle interpersonal interaction as well as technical skill. PFS resonates with contemporary thinking around simulation, workplace based assessment and the contextualisation of healthcare learning. It offers a conceptual framework which moves beyond the simple repetition of technical tasks and addresses issues of real-world challenge. It draws on a range of learning theories and applies to many domains within healthcare education. This symposium will provide a forum for discussion of educational and other issues relevant to PFS.

Symposium

3B Best Evidence Medical Education (BEME)

Chairpersons: Ronald Harden and Marilyn Hammick (BEME Collaboration, Tay Park House, 484 Perth Road, Dundee DD2 1LR, United Kingdom)
Panellists: Tim Dornan (University of Manchester Medical School, United Kingdom), Ross Scalese (University of Miami Miller School of Medicine, United States)

This symposium will focus on the utility of findings from systematic reviews in medical education. The aim is to identify the lessons reviews have for campus and clinical teaching practices and education policy making and implementation. This conversion of theory-from-review into ways of enhancing learning and, in turn, clinical practice completes the systematic review ‘cycle’. Members of the panel will give a brief reminder of the aims and findings of four BEME Reviews and discuss the theories-in-common, for example, authentic learning, the use of feedback, and the need for education ‘champions’ that have emerged from these reviews and their application to current education practice.

Symposium

3C Comprehensive teaching, implementation and practice of evidence-based medicine

Chairperson: D Th Ubbink (Academic Medical Center, Amsterdam, Netherlands)
Panellists: Paul Glasziou (Centre for Evidence-Based Medicine, Dept of Primary Health Care, University of Oxford, UK); Carl Thompson (UK); Hester Vermeulen; Rien de Vos (Netherlands)

The demand for high-quality health care by patients, government, insurance companies and health care professionals is increasing. For this reason, EBM is gradually becoming part of the medical and nursing curricula in The Netherlands and is being taught to specialists and trainees in the clinic, while various EBM courses are given to a growing para- medical audience. Simultaneously, research is ongoing regarding the knowledge, attitude, barriers and use of EBM in the daily clinical practice of various medical specialties and among various institutions in Europe. This symposium will present and discuss the present-day activities and challenges regarding the teaching and implementation of EBM in the clinical medical and nursing realms.

Short Communications

3D e-PBL and collaborative learning

3D/SC1 Medical student attitudes and perceptions of a web-based Virtual Patient Case Simulation Environment (Web-SP) for Problem-Based Learning discussion groups

W T Gunning*, K A Crist, N Zary, U G H Fors (The University of Toledo, Toledo, Ohio, USA and The Karolinska Institutet, Department of Biochemistry and Cancer Biology, Department of Surgery, Virtual Patients Lab, Department of LIME, 43614 Stockholm, Sweden)

Background: We have utilized problem based learning (PBL) for preclinical medical students for many years. The process at our school had become stale and problematic since it had evolved into document-dominated sessions. The case reader would divulge whole sections of clinical history without inquiry for specific information by the discussion group. We have abandoned paper-based cases and are utilizing a web-based virtual patient (VP) environment (Web-SP) for our PBL courses.

Work done: 155 medical students, divided into 16 discussion groups, completed a questionnaire about Web-SP at the conclusion of their first PBL case.

Results: Initial perceptions and attitudes of the students include a variety of criticisms of the program. These criticisms have subsided during the academic year and many students are now enthusiastic about data available when using Web-SP. The results from the post-course survey will also be presented.

Conclusions: These students have had extensive experience using paper-based cases in PBL during their first year of medical school. The switch to using Web-SP has reinvigorated our faculty and has enriched the opportunity to learn for our students.

Take-home message: Utilizing web-based VPs for PBL offers medical students access to a variety of data and visual information that is not possible when using paper-based cases.
3D/SC2 On-line problem based learning as an adjunct to clinical experience
David Foreman*, Simon Baker (Derby Hospitals NHS Foundation Trust, Devonshire House, Derbyshire Royal Infirmary, London Road, Derby, DE1 2QY, United Kingdom)

Background: PBL as described by Davis & Harden is an important educational strategy, aimed at encouraging students to actively learn, and not to be passive vessels to be filled with knowledge.

We have identified that in clinical practice achievement of all objectives, and the ability to see a wide range of specified conditions and diseases is not consistently possible, due to the nature of the service we provide, and the management of these diseases.

Work done: We have developed an on-line PBL module to accompany our clinical programme to ensure that specific objectives are covered consistently, throughout the course. Using our medical school’s Networked Learning Environment (NLE) we have been able to develop a short, interactive module focusing on Inflammatory Bowel Disease. The problems set reflect the aims and objectives of the concurrent clinical course. The online discussion board is regularly monitored by clinical consultants who are able to ensure clarity and to encourage the contributions of group members, and then summarising once the discussion is complete.

Conclusions/Take-home message: We hope that the students enjoy this method of self motivated learning, as it gives them the opportunity to research the relevant knowledge and then to apply it to a variety of clinical problems.

3D/SC3 How e-Learning and PBL can be blended
Kati Hakkarakinen*, Synnöve Carlson, Artturi Mäkikinen, Mika Matikainen, Sami Mustajoki (Medical School, PO Box 33014, Tampere University, Finland)

Background: The Tampere Medical School implements PBL and joined the International Virtual Medical School in 2006. The aim was to study how e-Learning can be blended with PBL.

Work done: The IVIMEDS material was offered for the first year students linked with PBL cases and for the third year students as a separate resource. The students answered a questionnaire on the usability of IVIMEDS material in furthering their learning in general and in the specific subject matter, as a learning resource for tutorials etc. The Moodle log-data was used to analyze the utilization. A cohort of first year students was interviewed. Two tutors in the first year block were instructed to promote the use of IVIMEDS material in tutorials and record the events.

Results: The link to PBL cases enhanced the use of IVIMEDS material based on student feedback and log-in data. The active role of the tutor advanced e-Learning even further.

Conclusions: E-Learning is best practised in PBL context when e-Learning material is offered so that the students experience that by using it they achieve the learning goals set in tutorials. This synergy enhances deep and reflective learning.

Take home message: E-Learning and PBL complement each other.

3D/SC4 Are you talking to me? A method of quantifying dynamic collaborative learning behaviour
A J Salmoni*, M L Gonzalez (Cardiff University School of Medicine, Department of Dermatology, Heath Park, Cardiff, CF14 4XN, United Kingdom)

Background: Curtis and Lawson described a simple but useful method to quantify the interactions of students collaboratively learning online using content analysis of online communications to categorise collaborative behaviours allowing insight into how people learned together online.

Work done: We extended this method by recording responses to interactions and analyzing them to offer insight into how doctors interact while learning online. Arbitrary groups can be analyzed allowing for different kinds of comparisons. Using an illustrative example from a postgraduate online medical course in dermatology for general practitioners, results show how rich the dynamics of online interaction can be, and how courses can be evaluated and improvements suggested. Educational theory may also be empirically tested for veracity.

Conclusions: Offers of interaction were more likely to elicit responses when made by students than tutors. Task type influenced the number and type of responses. This has implications for the development of group-based learning exercises. Interaction during collaborative online learning is a complex interaction between multiple factors.

Take-home messages: We propose that this method is useful to illustrate the effectiveness of collaborative exercises and can be applied wherever research is committed into online group learning behaviour.

3D/SC5 Why online networks do not work to support healthcare continuing professional development
John Sandars (The University of Leeds, Medical Academic Education Unit, School of Medicine, Worsley Building, Leeds, LS2 9NL, United Kingdom)

Background: There is increasing use of online networks to support healthcare continuing professional development but most do not appear to achieve their potential. This work highlights the main factors and offers suggestions for further development.

Work done: Synthesis of data from a systematic literature review and a cross-case analysis of three case-studies: two for public health professionals and one for general practitioners.

Results: Seven main factors were identified: motivation for online collaborative learning, user acceptability of computer-based technology, preference for structured and moderated activities, development of reciprocity of postings between participants, development of mutual trust between participants, recognition of time pressures and provision of organisational support.

Conclusion: Future development and implementation considers the requirements of users, the acceptance of the online approach by the user and the development of a supportive organisation within which the healthcare professional works.

Take-home message: Successful online networks to support healthcare continuing professional development require recognition of several important factors.
3D/SC6 Discussions in virtual groups to support reflection on basic science topics during clinical work placements
B A de Leng*, D H J M Dolmans, Q Jobis, A M M Muijtjens, C P M van der Vleuten (Maastricht University, PO Box 616, Maastricht, 6200MD, Netherlands)

Background: During clinical training medical students usually disperse over different locations where there are few peers with whom to discuss basic science topics and doctors have little time for coaching small group discussions. This is a serious problem, especially for vertically integrated curricula where students are expected to revisit basic science topics during their clinical work placements. We explored the feasibility of virtual group discussions as a distance education solution to this problem.

Work done: Students undertaking similar clerkships in different hospitals in 2006 and 2007 took part in virtual group discussions on (patho-) physiological concepts with distance coaching by expert clinicians via the Internet and a Computer Supported Collaborative Learning program. We used Garrison’s ‘Practical Inquiry’ model to support the online discussions. We assessed the quantity and quality of the online interaction and evaluated the experiences of the students and moderators with this e-learning model.

Conclusion and take-home message: The ‘Practical Inquiry’ model embedded in a CSCL environment appears to be a viable instrument to foster reflection and discussion on basic science concepts among students at different clinical training sites. Successful implementation will depend on good moderation, a user-friendly interface to manage the discussions and institutional recognition and support.

3E The curriculum: Rurally-based education

3E/SC1 Designing an optimal fit for the resource/student/curriculum nexus: successful implementation
Moira A L Maley*, J Campbell Murdoch, Denese E Playford (The University of Western Australia, Rural Clinical School of Western Australia, QE2 Medical Centre, Nedlands, Western Australia, 6009, Australia)

Background: The Rural Clinical School of Western Australia, delivers clinical curriculum to multiple small groups of students embedded in remote primary care settings for an entire academic year. The art of life long learning in primary care requires the capture and reprocessing of unfiltered data from a stream of events as they pass by the doctor. Students must capture relevant information, communicate effectively, accurately and ethically determine appropriate management. This student learning cannot be rushed; each student needs to determine their way to achieve it. A design to optimise this learning would include maximal clinical experience, support in clinical data logging and reflection, and a well matched curriculum/assessment matrix. Our students’ remote, embedded status gives them maximum clinical exposure.

Work done: In 2006 we trialled a “student eLog” (a personal, searchable, web database resource for case logging) but over a siloed, discipline-based, albeit ruralised, city curriculum. In 2007 we applied a re-developed “RCS Student eLog” over a customised curriculum featuring an integrated approach and new assessment.

Conclusions: The outcome for students and teachers in the 2007 “best fit” scenario highlighted the strategic role of the eLog in focusing students on core skills and facilitating both reflection and student/mentor interaction.

3E/SC2 Rural Integrated Community Clerkship: students’ perception of an innovation
Wayne Woloshuk*, Tyrone Donnon, Doug Myhre (University of Calgary, Faculty of Medicine, 3330 Hospital Drive NW, Calgary, Alberta, T2N 4N1, Canada)

Background: The University of Calgary Medical School has proposed a Rural Integrated Community Clerkship (ICC) to run parallel to the traditional clerkship. 12 students will spend 36 weeks in a rural practice. They will complete the requirements of all 7 mandatory rotations in the community and write the same evaluations as students in the traditional clerkship.

Work done: Students were surveyed to collect perceptions of the ICC. The survey included 38 Likert items and allowed for written comments. Of the 92 (66%) respondents from the Class of 2009, 36 (39%) reported interest in the ICC option. According to a factor analysis perceived advantages include exposure to rural/community practice and receiving enhanced preparation/training and responsibility. However, students were concerned about receiving adequate support for a rural placement and maintaining professional liaison with peers and the medical school. Written comments also noted educational benefits of the ICC plus concern about sufficient exposure to specialties.

Conclusions: Student interest in the ICC is high. Steps to maximize the potential benefits and alleviate the concerns of students will increase the likelihood of success. Monitoring the performance of the ICC group is planned.

Take-home message: Students are supportive of a pedagogical change to clerkship.

3E/SC3 Rural Integrated Community Clerkship: collaboration of two distinct medical undergraduate programs
D Myhre, Jill Konkin (Faculty of Medicine, University of Calgary, Calgary, Alberta, T1J 4K1, Canada)

Background: The Faculty of Medicine at the University of Calgary and at the University of Alberta have jointly proposed a fundamentally different clerkship experience for their third year medical students. These Faculties have significant differences in their curriculum with U of A having a four year curriculum and the U of C a three year program. The joint proposal for the Rural Integrated Community Clerkship runs parallel to the traditional clerkship. 12 students will spend 36 weeks in a rural practice. They will complete the requirements of all 7 mandatory rotations in the community and write the same evaluations as students in the home university traditional clerkship. A common curriculum and Faculty Development process is planned. Sites will be trained to a common standard and used by either university.
Work done: Joint meetings of the key educational leaders with a clear mandate and term of reference sets the stage for cooperation. A focus on the overall goals of medical education and early involvement of community based preceptors are key strategies. Strong leadership is required and the ability to understand the goals of the individual players is helpful. Joint initiatives such as student surveys and site review bring the institutions into a common thought process allowing the team idea to build.

Conclusions: It is possible to combine different university programs to meet a common educational goal.

Take-home message: Focusing on pedagogical goals allows key leaders to create the environment where different faculties can work together.

3E/SC4 Student perceptions of core psychiatry learning experiences in a longitudinal community based program

David Prideaux* (School of Medicine, Flinders University, GPO Box 2100, Adelaide, South Australia, 5064, Australia)

Background: The Parallel Rural Community Curriculum (PRCC) at Flinders University in South Australia enables students to take core clinical rotations in groups of eight in different rural general practices and associated hospitals. In 2005 psychiatry was added to the rotations but concern was expressed by metropolitan psychiatrists about coverage of in-patient psychiatry. PRCC students were required to undertake additional experiences in the following year.

Work done: Fifteen of the sixteen students undertaking the additional experiences were interviewed about their perceptions of psychiatry learning experiences.

Conclusion: The majority of students thought they had sufficient exposure to core psychiatry in the PRCC and did not require additional time. There were important site differences which related to the degree of staff structuring of the program, student initiative and ability to follow patients to larger centres.

Take-home messages: Perceived coverage of core psychiatry learning experiences was not necessarily related to location in large hospital or community settings. Rather it was related to degree of structure of the program and student initiative together with access to a variety of patients. This calls for a clear definition of the required psychiatry learning experiences across all sites and the methods by which they are gained.

3E/SC5 Communities as partners: building relationships to support rural medical education

Judi Walker* (Rural Clinical School, University of Tasmania, Locked Bag 3513, Burnie, Tasmania, 7320, Australia)

Background: The University of Tasmania’s Rural Clinical School (RCS) is part of an Australian rural medical education and training network. Its charter is to provide a rural and remote health context for learning to ensure students have competencies and attributes to deal with the clinical realities of rural and remote medical practice. This is achieved by providing a rural focused undergraduate clinical education program, by supporting local health professionals as clinical teachers and supervisors, and through sound engagement with local communities.

Work done: The RCS adopted a community development approach to build collaborative and strategic relationships into the future including the formation of a Community Advisory Board (CAB) and formal alliances with community organizations. The purpose of the CAB is to facilitate local ongoing partnership arrangements whenever possible to ensure existing and planned resources provide maximum benefits to both students and local communities.

Conclusions: Partnerships with local communities have resulted in the provision of residential accommodation for students on community-based clinical attachments, scholarships for new medical students, support for both locally-based and visiting clinical supervisors and teachers, locally supported research projects; employment opportunities for students and partners and locally-driven high school recruitment programs into medicine and other health professions.

Take-home messages: These rural communities now have a clearer understanding of how future doctors are trained for rural practice and feel engaged with and part of an initiative that is starting to address critical rural medical workforce shortages and will improve rural health outcomes into the future.

3F The curriculum: PBL 1

3F/SC1 Multiprofessional problem-based learning in Geriatrics: UBC Care for Elders Group


Background: Geriatrics is a highly multiprofessional subject yet there are few multiprofessional teaching methods. The UBC Care for Elders Group has developed problem-based learning modules that are aimed at multiprofessional groups.

Work done: A multiprofessional group, including seniors, developed fourteen modules covering common geriatrics topics. Topics included both syndromes (eg. dementia, delirium) and concepts (eg. successful ageing, caregiving). Each module consists of a pre-reading package that covers the topic at a basic level. Learners then participate in a small group session of 6-14 learners. A non-expert facilitator guides a case discussion. A facilitator’s guide allows non-expert facilitators to moderate discussion.

Conclusions: Participants found the pre-reading useful, and felt the case discussions consolidated knowledge. The modules were effective in both uniprofessional and multiprofessional learning groups, but in multiprofessional groups there was increased learning of professional roles and resources. Participants valued the pre-reading, particularly those who felt their knowledge of the material was low. Those who did not receive the pre-reading felt this was a detriment to their learning and participation in the small group sessions.

Take-home messages: Multiprofessional education in geriatrics can be taught in an effective way with problem-based learning in multiprofessional groups. Pre-reading material improves participant’s self-rated learning.
3F/SC2 Pathology Psychomotor Skills in the Problem Based Learning (PBL) Curriculum
Suzana Tkalic (College of Veterinary Medicine, 309 E 2nd Street, Pomona, CA 91766-1854, United States)

A combination of psychomotor skills and cognitive knowledge are essential for optimal learning and student performance in general. In order to enhance student learning in practical aspects of Veterinary Anatomic Pathology and its application in medicine, a set of small group exercises is incorporated into the Clinical Skills Course of the 1st year of our PBL Curriculum. Entitled “Pathology Psychomotor Skills”, they adhere to the college’s Reverence for Life Philosophy by using a set of non-live models in a fun and simplified way. Small groups of 6-9 students use a combination of tactile, visual, olfactory, auditory modalities and motor skills applied to a variation of creative learning tools, models, and scenarios in order to broaden their ability to learn basic concepts of Diagnostic Veterinary Pathology. Each session contains an introduction to goals and objectives, followed by 30 minutes practicum, and a short discussion with a pathology content expert. Student assessment of the course is submitted to the instructor. Performance data of 3 DVM Classes thus far are satisfactory with the emphasis of usefulness in their understanding and practice of the basic concepts in Diagnostic Veterinary Pathology. Based on our search, no similar exercises are reported in teaching Diagnostic Pathology.

3F/SC3 Promoting higher order thinking in PBL
Melanie Alperstein*, Nadia Hartman (University of Cape Town, EDU, Faculty of Health Sciences, Anzio Road, Observatory, Cape Town, RSA, 7925, South Africa)

Background: Facilitation of student-centred learning, such as Problem Based Learning (PBL), is often misinterpreted and equated with teacher inactivity. This has been experienced at the University of Cape Town in a restructured undergraduate medical curriculum. In an attempt to overcome this problem, focused training on developing ways of mediating and guiding students in higher order thinking, within the PBL process, was introduced for PBL facilitators. This preliminary research aims to test the methodology and gain understanding of how facilitators understand and interpret the concept of higher order thinking and translate this understanding in practice.

Work done: Interviews were conducted with facilitators prior to observing PBL sessions. PBL sessions were observed, recorded, transcribed and analysed to determine whether understanding of higher order thinking was translated into practice.

Conclusions: Results in the preliminary study indicate that facilitators are more active and efforts are being made to implement strategies to facilitate higher order thinking. There are many constraints and difficulties e.g. in posing questions that are not directly content related, time, and students from diverse educational backgrounds. Further research is needed and the complex methodology needs further refinement.

Take-home message: Giving the answer is much easier than facilitating and mediating higher order thinking in PBL.

3F/SC4 Metacognitive awareness of medical students in problem-based and conventional curriculum
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Background: Meta-cognition is defined as understanding and regulating one’s own cognitive processes in order to monitor, direct and control them (Flavell). Meta-cognition becomes increasingly important in situations of heightened learner self-direction, where learners are asked to decide what, how and when to explore. Besides, learner-centred approaches can help students develop meta-cognition.

Work done: The aim of the study is to investigate students’ metacognitive awareness at the faculty of medicine implementing different curriculum models. The study, which is descriptive, was carried out in five different medical faculties implementing different curriculum models and 846 medical students took part in the study. The Metacognitive Awareness Inventory (MAI), devised by Schraw and Dennison (1994), was adopted and administered. Cronbach α was 0.93 for the MAI scale.

Results: There was no statistically significant difference between gender, the English and Turkish streams and also between teaching methods, but there was a statistically significant difference between phase and faculty’s curriculum models. The scores of students who are in the pre-clinical phase (first three years) were lower than the clinical phase. Results in the preliminary study indicate that the a learner-centred curriculum model can be achieved through promoting higher order thinking.

Conclusion: The findings of this study indicate that the a learner-centred curriculum model can be achieved through metacognitive awareness.

3F/SC5 Ways of knowing: relating medical students’ personal epistemology position to discomfort with different types of knowledge in a problem-based curriculum
G Maudsley* (The University of Liverpool, Division of Public Health, Wheal Building, Quadrangle, Liverpool, L69 3GB, United Kingdom)

Background: Some students’ discomfort in adjusting to problem-based learning (PBL) may relate to how they perceive, judge, use, and think about knowledge/evidence. The aim of the study was to explore medical students’ notions of knowing in a problem-based curriculum.

Work done: Mid-Year 1 Liverpool medical students completed postal questionnaires, including measures of: (1) personal epistemology position on Perry’s scheme, using Moore’s 65-item Learning Environment Preferences instrument; (2) satisfaction with the curriculum (one item); (3) ranking four core knowledge-themes (one item). An open question explored students’ thoughts about their knowledge-base via PBL. A ‘mixed methods’ approach was used, and follow-up linked to end-Year 1 summative assessment outcomes.

Results: Returns (about 140) showed: (1) the baseline cognitive development of the cohort: ‘Early multiplicity’ predominated, i.e. realizing that there is ‘fuzziness’ in the knowledge-base, but a substantial minority were in dualism, where answers are ‘right or wrong’; (2) how this related to: curriculum satisfaction; the main qualitative themes about their knowledge-base; and their summative assessment outcome.

Conclusion/take-home messages: Perry’s work has implications for informing improved induction procedures for PBL and professional development, particularly in challenging dualistic thinking. Caveats discussed include difficulties encouraging participants to complete a complex postal research questionnaire.
3G/SC1 The “key features” approach in an OSCE and its influence on the global rating

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Background: To improve the assessment of clinical decision making skills during an OSCE assessing the readiness of IMGs for family practice, the “key features” approach was adapted by the Clinician Assessment for Practice Program. Page & Bordage proposed that in any clinical case there are a few unique essential elements in decision making which are critical to the resolution of the problem. Typically, the “key features” approach is applied to written examinations; however the OSCE is also well suited to this approach.

Work done: The 2007 exam blueprint was developed with 10 of 14 stations containing an assessment of clinical decision making. Each station was 12 minutes long with the last 4 minutes devoted to structured questions posed by the examiner. Examiners were briefed on the concept and practiced scoring on a case in an orientation session. During this presentation, examples of the examiner questions and scoring templates will be presented. We explored the influence of the candidates’ clinical decision making scores on the global rating by the examiner. The initial results from the OSCE will be discussed including how the results were utilized in the overall assessment of candidate performance.

3G/SC2 Investigating OSCE error variance – within stations and between assessors

Godfrey Pell*, Richard Fuller and Matthew Homer (University of Leeds School of Medicine, Level 7 Worsley Building, Leeds, LS2 9NL, United Kingdom)

Background: Standardisation and reliability are major concerns with Objective Structured Clinical Examinations (OSCEs), but quality metrics permit deeper analysis of examination performance. This work investigated relationships between OSCE structure and error variance (i.e. variance due to factors other than student performance), building on earlier work on reducing assessor variance through training.

Work done: Analysis of 3rd, 4th and 5th year OSCE results in 2006 will be presented. Variance was defined by the proportion of checklist mark/grade variance attributable to assessors out of the total mark/grade variance. The impact of revisions to examiner instructions and item checklists/mark sheets were assessed using the 2007 5th year OSCE data.

Results: Variance was particularly notable in stations which had students with high marks/low grade and or low marks/high grades. Further, assessment of stations by specialists may be more reliable than generalists, and individual criterion descriptors tend to reduce error variance. The effect of revision to marking schedules and examiner instructions will also be presented.

Conclusions: Tensions between reliability and validity continue to be important in complex OSCE arrangements. Despite training, between assessor variance persists, perhaps as a result of varying perceptions of appropriate ‘standards’. Discussion of other sources of variance will be presented.

3G/SC3 Beyond checklist scoring – clinicians’ perceptions of inadequate clinical performance

Katharine Boursicot*, Trudie Roberts, Jenny Higham, Richard Fuller, Jane Dacre (Barts and the London, Queen Mary’s School of Medicine and Dentistry, University of London, Centre for Medical Education, 2nd Floor Robin Brook Centre, St Bartholomew’s Hospital,West Smithfield, London, EC1A 7BE, United Kingdom)

Background: Itemised checklists to score the performance of clinical skills in OSCEs have been criticised for failing to capture the more complex and higher-order nature of clinical judgement and diagnosis.

Work done: Four medical schools used special forms in addition to the checklist scoring system in their OSCEs at graduation level. Examiners were briefed to use these forms to comment about students whose performance was unsatisfactory but this was not captured by the checklists.

The forms were collected and analysed. 152 forms were returned from 25,800 student-examiner encounters, representing a reporting rate of 0.6%. Several themes were identified: clinical skills – poor technique or failure to elicit/recognise correct signs; poor diagnostic ability; inadequate knowledge; inappropriate professional behaviour – personal or towards patient and poor communication skills.

Conclusions: The main areas of concern related to clinical skills or professional behaviour. Clinician examiners were concerned that professional behaviours and higher level diagnostic skills were lacking in students who nonetheless managed to pass the OSCE on checklist scoring.

Take-home messages: ‘Cause for Concern’ forms could be used in addition to checklist scoring on OSCEs, to gain a fuller perspective on students with unacceptable professional behaviours and where there are concerns about meeting minimum clinical competence requirements.

3G/SC4 Improvement of reliability, validity, and feasibility of the Objective Structured Clinical Examination (OSCE) when assessing the problem solving skills of final year surgical clerkship

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Background: Initially the reliability and validity of our OSCE were moderate due to the use of stations addressing history taking and physical examination skills mostly with less emphasis on problem solving skills. Also the feasibility of the initial OSCE was a problem due to excessive use of real and simulated patients. We are reporting our 4th formal OSCE for the final year surgical clerkship after 3 cycles of students experience through 1 year.

Work done: The OSCE consisted of 2 mornings examining 48 students in day 1 and 47 in day 2. Each morning students were split into 2 halves examining them simultaneously in 2 separate wards through 24 x 5 minute OSCE stations lasting for approximately 120 minutes. There were 15 active stations in each day addressing problem solving skills mainly with few clinical skills stations.

Page & Bordage proposed that in any clinical case there are a few unique essential elements in decision making which are critical to the resolution of the problem. Typically, the “key features” approach is applied to written examinations; however the OSCE is also well suited to this approach.
3H/SC1 Status of medical education across the medical colleges of Gulf Cooperation Council (GCC) countries

Khalid Bin Abdulrahman (King Saud University, College of Medicine, King Saud University, P.O Box:2925 Riyadh 11461, 2925, Saudi Arabia)

Background: Medical education for the last two decades is undergoing a process of change in curriculum, so as to maintain its efficiency and effectiveness. Considerable curricular changes are taking place by many medical colleges across all countries. The objective was to assess the current status of the undergraduate curriculum in the medical colleges of Gulf Cooperative Council (GCC) countries, in relation to SPICES (Student-centered, Problem-based, Integrated, Community-based, Elective and Systematic) model.

Work done: A structured open-ended questionnaire was used to obtain information from the appropriate authorities of 30 medical colleges of GCC countries (Kingdom of Saudi Arabia, Oman, Kuwait, Qatar, Bahrain, United Arab Emirates and Yemen) in the year 2005.

Results: Out of 30 medical colleges of GCC countries, 13 (43.3%) medical colleges were located in KSA and the remaining colleges were in the other GCC countries. The annual intake of students in year 2005 from these 30 colleges was 3225 of which 64.15% were males. Twelve colleges (40%) were following a traditional curriculum, 2 colleges were pure problem based learning (PBL) and 16 colleges were following a hybrid PBL curriculum. Most of these colleges' curricula were moving towards the innovative side of the SPICES model.

Conclusion: The descriptive analysis of this study indicated that the GCC medical colleges were making gradual changes and adjustments so as to improve and modify curricular implementation based on universal changes and availability of resources.

3G/SC5 Does the use of note pads in OSCEs enhance the performance of medical students?

Kirsty Forrest, Marco Baronii, Richard Fuller (University of Leeds, Academic Unit Anaesthesia, The General Infirmary at Leeds, Great George Street, Leeds, LS1 3EX, United Kingdom)

Background: It is commonplace for students to have note pads whilst undertaking the OSCE. These are typically used both before entering a station and as an aide memoire during the encounter. Following the examination note pads are collected and destroyed. Anecdotal evidence suggests that some poorer performing students use the pads more than others. In addition, the notes made can appear to lead to tunnel vision in some stations, and may contribute to poor performance.

Work done and methods: The Leeds University final OSCE exam takes place in April 2007 across 4 randomly allocated sites. Note pads will be collected from all candidates at one site (80 students), and analysed with regard to content and quantity of written material. This data will then be correlated with overall OSCE performance of each candidate.

Conclusions: The results will be presented. The aim of final year OSCEs is to assess higher order thinking and decision making skills. Making notes immediately prior to a station may have a detrimental effect on results, although this may vary depending on the individual candidate's learning style. This pilot will help inform our decisions regarding future use of note pads in the OSCE exam.

3G/SC6 Is security an issue in an OSCE with licensing purposes?

A Dermine*, J Degryse (ICHO, Kapucijnenvoer 33 blok J, Leuven, 3000, Belgium)

Background: The final assessment procedure of general practitioners in Flanders consists of an oral, an EMCQ examination and an OSCE. All 20 stations have a theme and a focus; a two-dimensional blueprint assures content validity. Since the OSCE is organised on different weekends the themes and focusses of the stations cannot be kept secret. An experiment was designed in order to answer the following research question: “Do candidates who were informed about the content of the stations perform significantly better?”

Work done: 116 candidates were spread over 3 different Saturdays. The first group (n=39) was defined as the “control group”; the second (n=39) received the themes, focusses and key features of 4 out of 8 new stations one week before their OSCE.

Results: The total scores showed a normal distribution, with a mean total score of 60.5% and a SD of 7.44. There was no significant difference in total scores between the 3 groups; neither in the scores on the individual stations (except for one).

Conclusions: Candidates do not score significantly better on stations when they are informed about the content.

Take-home message: Organizers of an OSCE shouldn't be concerned about leaking information about stations within one examination period.
3H/SC2 Using management teams from the Core Teaching Faculty to better direct and coordinate a medical curriculum
Jack W Strandhoy (Wake Forest University School of Medicine, Dept of Physiology and Pharmacology, Medical Center Blvd., Winston-Salem, North Carolina, 27157-1083, United States)

Wake Forest University School of Medicine developed a teaching academy (Core Teaching Faculty) to better recognize, support and develop educators. This group also is charged with the analysis, management, partial delivery and improvement of the curriculum. From the larger membership of the CTF, three teams of 3 members each now oversee years 1, 2 and clinical years 3-4 of the medical curriculum as a C3-4 steering group. Clinician and scientist team members teach within the year and may have other educational administrative roles. Formerly, busy course directors and semester coordinators were less effective at implementing an entirely coordinated curriculum. Now, individual courses still have directors but the CSG team for each year provides independent overall management of the integrated curriculum, better coordination between courses, problem solving with a small team, evaluation and development of teaching modalities, and improved communication between years of the curriculum. Each team meets regularly with student representatives for input and feedback. Meetings between team members, the CSG, the Core Teaching Faculty and occasional longer retreats for planning make for a more robust and cohesive management of our curriculum. The goal of the CSG team approach is better horizontal and vertical integration of teaching.

3H/SC3 Limits on the benefit of curriculum changes
C. B. Hazlett*, T Fok, H K Ng (The Chinese University of Hong Kong, c/o Office of Educational Services, Faculty of Medicine, 9A, Block B, Prince of Wales Hospital, Sha Tin, Hong Kong SAR, 852, China, People’s Republic of)

Background: Revisions to curriculum and instructional designs made in an Asian medical school were consistent with accreditation recommendations and modifications introduced in leading medical schools. Changes were not regarded by some teachers as needed and many viewed added teaching requirements to be an imposition on their time for research and clinical services.

Work done: The first graduates educated under the revised programme were measured on 11 performance criteria during each rotation in the subsequent one year internship. Identical performance measures from 10 previous cohorts were used as historical controls. Findings were cross-validated with (i) medical incident reports within 58 hospital units through which all interns had rotated, (ii) written comments from clinical preceptors and (iii) end of module assessments during the final two years within the medical undergraduate programme. Statistical adjustments for possible confounders included type of hospital, preceptors’ possible awareness of the medical school’s change in curriculum and student biographic data.

Results: Significant improvements in learning outcomes were established. Notwithstanding, some teachers continue to regard their extra teaching responsibilities as problematic, particularly given unchanged expectations for their ongoing research and clinical responsibilities.

Conclusions: This dilemma represents challenges that must be addressed if the gains in student learning outcomes are to be maintained.

3H/SC4 Does the journey influence the destination? The effect of following different paths through the same medical school
Lee R Coombes*, Paul Upton (University of Plymouth, Peninsula Medical School, C207, Portland Square, Drake Circus, Plymouth, PL4 8AA, United Kingdom)

Background: Students at Peninsula Medical School (UK) share the same curriculum but follow a number of different pathways through their medical education. In their final year, only half the students leave for an elective at any one time.

Work done: This work focuses on student performance on Special Skills Units, Clinical Competencies, and the Progress Test, a 125 item MCQ test administered four times a year. Data will be presented comparing the performance of students who have followed different pathways through their medical education. It will also examine the effect of electives on performance and order effects of both pathways and electives.

Results: Results will be presented which analyse student performance across different assessments.

Conclusions: A student can learn core curriculum material regardless of the path they take through medical school. They can also continue developing their medical knowledge while away on elective. Although some effects can be seen, these disappear once all students have completed the year they are on.

Take-home messages: The journey a student takes through medical school is important, but the destination will always be the same.

3H/SC5 Traditional teaching of basic sciences in the medical curriculum - what is it good for?
Jörg Peltz*, Manfred Gross (Charité Universitätsklinikum Berlin, Charité Platz 1, Prodekanat Studium und Lehre, 10117 Berlin, Germany)

Background: In the traditional curriculum of the Charité (Berlin) basic sciences are taught according to the “H”-model during the first two years, followed by three years’ teaching of clinical theoretical and ‘pure clinical’ subjects. The first two years are thought to be a prerequisite for the student to become a competent and knowledgeable physician, who can solve clinical problems from scratch.

Work done: Students at the end of the 5th year were asked to participate in a MC-test covering anatomy, physiology and biochemistry. All questions had been critically reviewed by experts and were classified as representative for the respective subject and worth knowing for medical students.

Results: 138 participants took part in this test. 2/3 of the participants answered less than 40% of these questions correctly, only 11% gave more than 50% correct answers. Additionally students were asked about their opinion about these questions taking into account what were main issues during their clinical curriculum. They gave very distinct and sophisticated opinions about the value of different types of knowledge. In an open answer section a high percentage asked to teach more (the important) principles than (useless and incoherent) facts.

Conclusion: Current independent teaching of basic science seems to be in urgent need of improvement.
3I Workshops

What are our written assessments really assessing? A UMAP perspective on item quality assurance

Andrea Owen, Ged Byrne, Emyr Benbow, Paul O’Neill (UMAP, University of Manchester, 1st Floor, Education & Research Centre, ATR4, South Manchester University Hospitals, Southmoor Road, Manchester, M23 9LT, United Kingdom)

Background: The Universities Medical Assessment Partnership began in 2003 as a five partner collaboration in the UK to build a high stakes assessments item bank. UMAP now has 14 medical school partners and a bank of over 5500 multiple choice and extended matching items. Following on from the workshop held in Genoa which discussed broad approaches to how institutions and collaborations manage assessment item quality, this session will examine assessment items and performance data to discuss and analyse the characteristics of poorly performing questions.

Intended outcomes: Participants will take away an understanding of: (1) good practice in written assessment; (2) characteristics of poorly performing written items; (3) techniques to improve item quality.

Structure: (1) Overview of good practice in written assessment; (2) Circulation of assessment items for consideration and analysis; (3) Group analysis; (4) Group feedback; (5) Overview of techniques to improve item quality.

Intended audience: Those involved in coordinating written assessments at school, faculty or collaborative levels, particularly those with roles in test/item quality assurance methods.

Level of workshop: Intermediate.

3J Workshops

Third year medical student curriculum: teaching and assessing team communication through simulation training

Jose Pliego, Tony Errichetti (Texas A&M Health Science Center College of Medicine, 2401 S. 31st Street, Temple, Texas, 76502, USA)

Background: The new paradigm for medical education dictates a shift to self-directed learning, practice to pre-defined standards of competency using simulation and team training. The Institute of Medicine To Err is Human estimated that many errors in treatment at US hospitals are attributed to failures in communication and teamwork. Graduating medical students should be competent, communicate well and work in a multidisciplinary team that focuses on patient safety as a common goal. Therefore, teaching and assessing communication skills in the curriculum should be an integral component of all clinical clerkships.

Intended outcomes: (1) Identify the rationale to use clinical simulation to improve student communication; (2) Understand how to identify and measure competencies critical for effective team communication; (3) Understand how to apply the SimCom-T Communication Tool to assess student team communication/performance as a unit.

Structure: (1) Introduction; (2) Employing simulation model to improve medical student performance; (3) Competencies critical for effective teamwork; (4) Overview of the SimCom-T communication tool; (5) Video demonstration illustrating how to use the SimCom tool; (6) Debriefing principles using the SimCom-T domains; (7) Q & A.

Intended audience: Faculty with interest in learning how to enhance and evaluate effective communication in the curriculum.

Level of workshop: Beginners to advanced.

3K Workshops

The complexity of leadership and management in medical education: theory and practice

Jim Price (Brighton & Sussex Medical School, Institute of Postgraduate Medicine, Room 342, Mayfield House, Falmer, Brighton, BN1 9PH, United Kingdom)

Background: Recently the importance of clinical involvement in leadership and management in health services has been recognised internationally, and there have been calls for more formal education in professionalism as well as medical management and leadership. How should this be done in practice? Can theory help us? How might ‘complexity theory’ in particular help educators with the practical aspects?

Intended outcomes: The aims of this workshop are to: (1) explore the links between theory and practice in the field of teaching and learning of leadership and management in medical education; (2) introduce ‘complexity’ as a potentially useful lens through which to view these links; (3) review how practical, complexity-inspired tools might be used in teaching/curriculum development.

Structure: Discussion of the concepts of ‘leadership’ and ‘management’ as components of medical professionalism will be a starting point, from which the complex nature of the concepts themselves and their relationship to medical curricula will be explored. The notion of ‘complexity’ will be introduced in an original, creative and accessible way, and participants’ own experience of leadership and management will be used to test the proposed relationship of complexity theory to educational practice. The idea of leadership as an emergent property of a complex system will be debated, together with its relationship to governance, ethics and ethical behaviour.

Intended audience: No prior knowledge of complexity theory is assumed, and the workshop is aimed at faculty (both undergraduate and postgraduate level) involved with curriculum development and/or teaching leadership, management or medical professionalism.
3M/P1 Faculty development by means of a virtual community of practice

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Background: Members of the teaching staff of the University Medical Centre Utrecht reside within various faculties of the university and in affiliated hospitals. Due to different working hours and distance, staff members do not often meet and it is not easy to organize a faculty development programme for them.

Work done: Within the virtual learning environment a ‘community for teachers’ was developed, meant for all teaching staff members. The community contains examples of good practice, discussion fora, educational background information, announcements, manuals and tips. Teachers were invited to participate in the virtual community and to indicate wishes on faculty development topics. Much interest was expressed in digital assessment. Therefore, this was the first point of attention chosen to be facilitated in the virtual community.

A workshop was developed using a mix of e-learning (the virtual community of practice) and face-to-face meetings. All course materials were placed online in the community and discussion fora were used for support and consultation of experts between meetings. Meetings were used for live expert contact, to meet other participants and for peer teaching.

Conclusion/ Take-home message: The combination of virtual and face-to-face learning proved to be both efficient and stimulating for the teaching staff.

3M/P2 Evaluate, evaluating, evaluated......!

A Shenoy*, M Salah, P Coles, R Gamanya, D Bose, A Moshen, R Simpson, S Kamath*, L Allery, J McDonald, S Brigley, J Pugsley (Cardiff University, United Kingdom)

Background: Attendees of the MSc Medical Education course at Cardiff are required to devise, plan, and carry out a 2 day course. The aim is to achieve one of the learning outcomes, to experience organization of an educational course. This year’s task is to teach junior trainees about diversity in medical education. Our sub-group will teach the impact of diversity on assessment and evaluation.

Work done: We will evaluate the course, its teaching and learning experience, benefits, drawbacks and identify areas for improvement. None of the attendees have a prior experience in teaching the chosen subject. Therefore the course curriculum and course content has to be developed from scratch in 3 months by trainees who have a full time medical professional commitment and live in a wide geographical area.

Conclusions: We will complete the project and report at the conference. It would be interesting to evaluate the course in which we teach a subject on which none of us has expertise.

Take-home messages: Teachers need to evaluate teaching regularly to achieve good learning outcomes and to improve the teaching itself. We consider incorporating evaluation into the course design whilst the course is developed a good practice towards educational governance.

3M/P3 The creation of interactive video resources to enhance teaching: work in progress

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Background: In the context of a Teaching and Learning for Health Professionals programme, we wanted to create in-house videos to support teacher development which would also prove useful for junior doctors starting to teach medical students and undergraduates undertaking teaching projects. This led to the idea of a stand-alone, electronic resource with no requirement for teacher intervention. Thus was born the idea of video clips with supporting pedagogical material. These would be useable as a classroom resource, but also as an interactive, electronic resource for remote access.

Work done: The university film crew shoots videos of diverse teaching episodes. Initial viewing of the footage leads to rough editing decisions which are then refined into ‘clips’. Finally, we create exercises to promote reflection and/or discussion. Challenges: There are various challenges in this project including ethical and practical issues, teaching decisions involved in devising the interactive exercises, and, finally, technical questions about the dissemination of the video clips. Some of these issues are inextricably intertwined.

Conclusion: The authors suggest how a continuous reviewing and refining of the process of producing interactive video resources can address the above challenges. Delegates will become aware of essential issues in the creation of a similar resource.

3M/P4 Teachers’ conceptual structures analysis to orient training programs towards student-centred education approach

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Background: Training teachers for adopting a student-centred education approach, from a constructivist perspective, implies that the subjects’ pre-instructional conceptual structures have to be restructured in order to allow understanding of the intended knowledge, and replace a framework constructed on: a) their own observations and experiences as students, b) a former training based on a teacher-centred education approach, and c) their current educational practice. Besides that the new information seems to be contradictory to their traditional view. This study is focused on cognitive issues analysis. The objective was to identify the concepts that changed and those that did not change in teachers’ knowledge structures at the end of Problem Based Learning training programs.

Work done: Sixty teachers, who were not familiar with PBL, participated in two kinds of PBL-courses. Half of them participated in a 132-hour course, and the rest in a 30-hour course. Conceptual knowledge was analyzed through open-response test administration. Data were collected at the beginning and at the end of the instruction; concepts were categorized based on two education approaches.
3M/P5 The successful establishment of the faculty development program – from a regional teaching hospital to medical center

Pei-Chun Lin*, Yun Chen, Shu-Hsien Chu (Division of Medical Education, Far Eastern Memorial Hospital, No 21, Sec 2, Nan-Ya South Rd, Banciao, Taipei, 220, Taiwan)

Background: Traditionally, teachers teach students through lectures. Recently, Taiwan Joint Commission on Hospital Accreditation (TJCHA) has emphasized the problem-based learning and Bio-Psych-Social (BPS) capability of a medical doctor. Thus, how to improve teaching skills for teaching these core competences are mandatory for passing the hospital accreditation.

Work done: Since Jan 2000, we used three-staged strategies for faculty development. At first, we recruited 40 young attending doctors from other medical centers as junior teachers to refresh the preformed environment. The junior teachers, as the champions, changed senior teachers' behaviors. In the second stage, the champions joined workshops for improving teaching skills held by TJCHA. Teaching Skill workshops for the whole teaching faculty were also held by our division. In the third stage, we established the Center for Faculty Development (CFD) in 2006 for continuous teaching quality improvement. Finally, 97% teachers improved their teaching skills and the students had shown 90% satisfactory on teaching activity.

Conclusion: Our strategies led us to pass the accreditation and proved us as a medical center since July 2006. The faculty development program can facilitate the teaching skills and enhance students' satisfaction.

Take-home message: The three-staged program could be the reference for the hospital to improve teaching skills and quality.

3M/P6 Faculty development in the context of learner-centered educational support for the basic sciences: a case study

Richard Blunt* (St. George's University, Department of Educational Services (DES), Grenada, W.I.)

Background: St. George's University (Grenada) comprises Schools of Medicine, Veterinary Medicine, Arts and Science, and a Graduate Studies Program. The School of Medicine is international, with students and faculty from more than 80 countries, but predominantly from the United States. The School recently established a joint satellite program in partnership with Northumbria University, U.K.

Work done: The School has developed comprehensive educational support programs to address the needs of its diverse students and faculty. This paper focuses on the faculty development program, but also summarizes the programs provided by the Department of Educational Services (DES), including pre-medical education, individual and extended programs, supplemental and review groups, Supplemental Instruction (SI), and language development. The program for faculty development is planned on the basis of several methods of needs assessment and delivered through a program of workshops called Let's Talk Teaching. The paper concludes with a critical evaluation of the program.

Take-home messages: Faculty development programs for medical schools need to be evaluated in the light of the academic culture of the University, the methods of needs assessment, its goals, objectives, methods, faculty evaluations, and comparable practices in other schools of medicine.

3M/P7 The impact of the course Art of Teaching in Medicine

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Background: Since 1998 the Croatian Society for Medical Education and the Zagreb Medical School have had a continuous experience in organizing, developing and evaluating an obligatory six-day course in medical education for young faculty. The objective is to train teachers how to plan, organize and evaluate in medical education.

Results: The course has fulfilled the expectations of 186 participants (mean grade 4.0±1.2, ranging from 1 the lowest to 5 the maximum grade) and they all confirm its positive impact on their every-day teaching process (mean grade 4.2±0.9). The highest values are: building upon their previous experience, directing interests to teaching, stimulation of exchange of experience with colleagues, peer discussions as a continuous support for their advancement in teaching. The problems are: insufficient participation of older and decision making faculty, the doubts on the implementation of skills mastered in the course. The analysis of the course impact showed that 15% of the faculty trained has introduced innovative modules in their teaching practice; the preliminary data demonstrate that younger faculty achieved higher scores than the older.

Conclusions/Take-home messages: This program is extremely important for creating a new culture of teaching and learning medicine, particularly in increasing awareness and motivation of the young faculty for mastering the fundamental skills of medical education. However, continuous organization of CPD courses in medical education is essential for the development of specific teaching skills needed for application of acquired principles in every day practice.

3M/P8 Diversity and distinctive features of master's health professions education programs

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Background: Recent statistics show the number of master's level health professions (HP) education programs increasing worldwide. Programs are varied and unevenly distributed. This indicates different needs and functions and distinctive features among masters programs.

Work done: A comparison of four international, one national, and one regional masters program was conducted utilizing program director interviews and analysis of program data. Program target group, goals, educational philosophy and curriculum, instructional methods and staff was clarified.

Conclusions: Masters programs teach broad areas related to HP education and provide educational programs accepted by students worldwide. Each masters program has a unique target group, from clinical educators to education leaders,
different program goals, variety in coursework design and requirements for graduation. The differences are based on
graduate education regulations, program history, educational philosophy, staff availability, program structure, and
location. Continual modification takes place in established programs updating and responding to changes and needs.
Distance learning is increasingly essential to involve HP students and facilitate their learning. It also creates interruption
and increases staff work-load. Characterized by intensive programs with strict individual evaluation, masters programs
are recognized as leadership programs providing educational resources nationally and internationally.

Take-home messages: The variety of masters programs offers broad opportunity for education for those seeking
leadership and scholarship in HP education.

3M/P9 A multi-disciplinary program of peer observation partnerships
M O’Keefe*, A Le Couteur, J Miller, U McGowan, M Anderson (University of Adelaide, Faculty of Health Sciences, South Australia, 5005, Australia)
Background: A multi-disciplinary program of peer observation partnerships was implemented across the Faculty
of Health Sciences. The ‘Colleague Development Program’ provided faculty staff with feedback on teaching within
a formative rather than summative context, and promoted collegiality within and across traditional discipline
boundaries.

Work done: Forty-two volunteer teaching staff asked a trusted colleague to observe their teaching, document
good practice and make suggestions for improvement. Observations were guided by teacher identified learning
objectives. A written summary of mutually agreed outcomes was prepared by the observer. Approaches to developing
peer observation partnerships were modelled in seminars. Program evaluation included questionnaires and focus
groups.

Results: Participating teachers reported increased confidence in teaching, exposure to new ideas, a feeling of
institutional support and a greater sense of collegiality.

Conclusions: This program successfully situated peer evaluation within a collegial partnership. The evaluation focus
groups provided valuable debriefing opportunities.

Take-home messages: Flexible peer observation partnerships in which teachers select their own colleague or ‘critical
friend’ are valued by staff. Teacher concern about being subject to ‘evaluation’ and ‘criticism’ is overcome by drawing
on existing collegiality and trust among peers. Such colleague partnerships have the potential to improve teaching
and provide outreach and connection to isolated teachers.

3M/P10 Self evaluation of teaching program and its improvement using recorded lectures
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Background: In order to stimulate reflection and continuing professional development, a model of self evaluation was
introduced by watching recorded performance of one’s own lectures considering various points such as personality
and movements, voice tuning, application of new educational tools, knowledge, capability, students’ responses and
overall class management.

Work done: At least six lectures were recorded and observed by the lecturer to analyze their own performance;
in addition 3 experienced critical friends evaluate their performance using a protocol. A similar protocol was also
completed by the lecturer. The comments were used to improve their next classes for 2 continuous years and the
process was evaluated by an expert using a semi structured interview.

Results: After the project each teacher had a different way of reflecting on teaching than they used to do before. Most
of the comments and feedback given was positive and valuable, the work was carried out in a friendly atmosphere
and all the teachers were actively involved for better performance. The results also showed much improvement and
satisfaction by lecturers and students.

Take-home message: Self evaluation of teaching practice by analyzing ones own lecture film should be made a regular
part of teaching practice for at least the first three years of teaching.

3M/P11 Faculty teaching skills: a correlation between self and learners’ perceptions
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Brazil)
Background: To correlate learners’ and faculty perceptions of faculty teaching skills.

Work done: 93 Y4, Y5 and Y6 faculty members performed self-assessment, related to his teaching skills. Each of them
was also assessed only by the learners with whom he had interacted. A total of 296 students participated in faculty
assessment. A 1 (bad) to 5 (excellent) scale was used. Statistical analysis used Wilcoxon paired test and Spearman
coefficient.

Results: Median rates were high: 4, (range 3-5 for self) and 5 (range 1-5 for students). In 61% of the 1586 assessment
forms produced, learners rated faculty the highest, whereas only 21% self assessed the highest rate. 4% of the learners
rated faculty lower than 3, but none of the teachers self assessed lower than 3. 52% of faculty rated themselves lower
than learners. Learners’ assessment was significantly higher than faculty self-assessment (p=0.0000). There was no
correlation between self and learners’ assessment (r=-0.21, p=0.1683).

Conclusion: Faculty and learners have different views concerning faculty teaching skills. Learners have a better
perception of faculty teaching skills than faculty themselves.

Take-home message: Faculty self assessment followed by feedback about learners’ perception should be encouraged
as a tool for faculty professional development.
3N Team-based teaching and learning

3N/P1 Assessment of facial bone by scenario exercise: a teaching technique for medical students
Anurak Amornpetchsathaporn (Sawanpracharak Hospital, Atthakawee Road, Paknampho District, Muang, Nakhonsawan, 60000, Thailand)
Background: Young physicians usually misdiagnosed facial bone fracture on assessment of maxillofacial injured patients. The major problem was lack of skill; they carried out physical examination by touch instead of palpation. Especially when a fractured bone was simple or minimally displaced and covered with marked edematous skin and subcutaneous tissue, they could not detect stepping and crepititation of the fractured site.

Work done: A group of sixth year medical students was taught how to examine and palpate facial bone contouring part by part. After model demonstration, a scenario was set up. In the first step, all medical students palpated all parts of their facial bones completely one by one. In the next step, they were invited to examine each other using the same techniques. Finally the palpation techniques were discussed and they palpated each part of the facial bones repeatedly.

Conclusion: The group of medical students who learned to examine and palpate facial bones by self role play gained more confidence and could detect abnormal signs of bony fracture with the correct techniques.
Take-home messages: Teaching medical students to assess facial bone by palpation with scenario exercise could be effective for small group learning. They could feel and know how to palpate facial bones and diagnose fracture without radiological investigation.

3N/P2 The effectiveness of team-based learning in medical students
Thumnop Tunnitisupawong, Kosa Sudhom and Areeya Deesomchok (Buddhachinaraj Hospital, School of Medicine, 90 Srithamtripidok Road, Phitsanulok, 65000, Thailand)
Background: Identifying the characteristics of learning method was seen as a potential way of improving learning outcomes of the individual. This study examined the effectiveness of Team-Based Learning (TBL) in medical students.

Work done: 47 medical students in the Pediatric Department, Buddhachinaraj Hospital, School of Medicine, Naresuan University (Oct 1, 2006-Jan 31, 2007) were enrolled. A case study was given to the students for pre-class preparation 2 days before. In class, students were tested for individual readiness assurance test (IRAT) and then divided into small groups (4-5 students). After the discussion in groups, each student was tested again individually as post-class assurance test (IPAT). The scores were compared between IRAT and IPAT. The students evaluated one another by peer evaluation on participation and they were checked about attitude toward TBL.

3M/P12 Students’ rating of clinical teacher performance
Ramin Sarchani*, M Najafi, S Asefzadeh, A Zeinaloo, F Fallah Abed (Qazvin University of Medical Sciences, Shahid Bahonar Blvd., Qazvin, 3419759811, Iran)
Background: Continuous evaluation of faculty members’ performance if is done correctly can help in distinguishing the weak points and improving their function.

Work done: This study was done to assess the opinions of students and faculty members on the appropriate items in student rating forms about clinical teacher performance in Qazvin University of Medical Sciences during 2001-2004. Some of the items provided were as follows (rating scale: always; often; sometime; rarely; never). The teacher: (1) States the clinical education objectives at the first day of clinical work; (2) Provides a good learning environment; (3) Encourages students towards independent learning; (4) Allocates enough time for theoretical and practical teaching; (5) Evaluates students and gives feedback frequently; (6) Corresponds clinical teaching with the students’ needs; (7) Corresponds teaching with different situations; (8) Teaches effective communication skills with clients and their families; (9) Has good supervision on clinical skills learnt by students; (10) Pays particular attention to ethics.

Conclusion: It was very interesting for us to see that both faculty members and students had almost similar opinions about the competent clinical teacher and the evaluation items. However, some faculties believed that every evaluation system should be postponed until the time that significant prerequisites for an effective and efficient clinical teaching are provided.

3M/P13 Strengths and weaknesses of the SITE (Structured Interactive Teaching Evaluation) method in quality evaluation of the teaching process
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Background: The SITE method developed at the Zagreb Medical School relies on consensual agreement between students and teachers in the teaching process.

Work done: The SITE has been followed-up for five years.

Results: Its major advantages are: a) direct interaction and increased mutual understanding of partners involved, b) increased motivation for a structured dialogue based on partnership, c) identification of objective problems and finding joint solutions, d) direct impact of the consensual directives on the prospective teaching process. Its weaknesses are: a) difficulties in accepting direct communication, b) problem of randomly chosen students related to their opinion which is often personalized, c) negative influence of the size of the faculty, d) lack of objective in the faculty for changes. e) lack of students’ motivation upon completing the course. This method is also characterized by relatively small financial support and is not time consuming in relation to the tasks chosen.

Conclusion/Take-home message: The specific feature of the SITE method is the validation of the teaching process and the recognition of the problem. For the teachers it has an emotionally positive impact (giving support to good practice) and the awareness of the need to change. The greatest value is the joint recognition and solution of common problems in this educational partnership.
3N/P3 Introducing a team-based learning in medical ethics education
Eun-Kyung Chung*, Jung-Ae Rhee, Yong-Hong Baik (School of Medicine, Department of Medical Education, Chonnam National University, 5 Hak-Dong, Dong-gu, Gwangju, 501-746, Republic of South Korea)

Background: Medical ethics is now an important aspect of medical education. But teaching medical ethics has presented challenges, including a perceived lack of value or relevance by students and dearth of effective teaching method for faculty. Team-based learning (TBL) was introduced into our medical ethics course to respond to the need. We evaluated the impact of TBL on the classroom engagement and educational outcomes.

Work done: TBL is an approach to large-group teaching that combines the strengths of small-group interactive learning with teacher-driven content delivery. TBL session included objective-oriented assignments, an individual readiness assurance test (IRAT), a group readiness assurance test (GRAT) and group application problem. Most students perceived TBL activities to be more engaging, effective, and enjoyable than conventional didactics. Scores of GRAT was higher than IRAT (statistically significant), demonstrating the effect of cooperative learning. Students in the lowest academic quartile showed better performance compared to other sciences taught by traditional lecture.

Conclusions: Introducing TBL into medical education was very positive. The TBL method should be considered for broader application in medical education.

Take-home message: Application of TBL into medical education proved to improve student performance and increase student engagement and satisfaction.

3N/P4 Team-based learning satisfaction compared to lecture-based and problem-based learning
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Background: TBL is a well-known and interesting method but students' satisfaction is still doubtful. This report aims to study the students' satisfaction on TBL compared to lecture-based (LBL) and problem-based learning (PBL).

Work done: The medical students were asked to answer a questionnaire for satisfaction on TBL, LBL and PBL from the point of view of class time appropriateness, applicability, easy understanding, content retention, learning motivation, stress and preferable issues.

Results: The satisfaction questionnaire, with the Cronbach's alpha coefficient reliability of 0.718, was done by 60 students. In TBL, the overall satisfaction score, class time appropriateness, applicability easy understanding, content retention and learning motive efficiency were 66.9, 71.3, 70.0, 68.2, 64.6, 64.0% respectively and stress score only 41.6%. When comparing the three methods' overall modalities results were TBL 53.45%, LBL 31.03% and PBL 15.52%. TBL was first ranked in easy understanding, content retention, applicability, class time appropriateness. PBL has highest stress and learning motivation whereas TBL has lowest stress.

Conclusions: Satisfaction in TBL is accepted. It is dominant in content retention, applicability, class time appropriateness and lowest stress whereas PBL has high stress and high motivation.

Take-home messages: TBL is the preferred learning method for clinical year medical students.

3N/P5 Heart failure in children: a comparison between case-based and traditional lectures for 5th year medical students
W Hongknap*, K Thongchaiprasit (Chonburi Medical Education Center, CPIRD, Ministry of Public Health, 2000, Thailand)

Background: Heart failure in children is one topic of lectures for 5th year medical students. A case-based lecture encourages self-directed learning and participation in students more than the traditional method. The study was conducted to compare learning outcomes from case-based and traditional lectures.

Work done: A cross sectional study was conducted with 42 fifth year medical students consisting of 22 in group 1 using traditional lecture for academic year 2003 and 20 students in group 2 using case-based lecture for academic year 2006. The evaluation used MEQ for clinical assessment and interview for exploring the satisfaction of teaching.

Results: The baseline GPAX between both groups was not significant but higher MEQ scores were found in group 2 than 1 (74.4±9.1 VS 65.5±9.3, p = 0.007). The students in group 2 were satisfied with case-based lecture relating to participation, self-directed learning, and relevance to real patients.

Conclusion: The case-based lecture was an efficient teaching method and satisfied the students.

Take-home messages: Case-based lectures require well-prepared students related to self-directed learning.

3N/P6 Training faculty in using wireless electronic voting
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Background: Electronic voting is an interesting classroom technology. Using on-the-spot voting changes one way interaction of a standard presentation into a two way communication tool which motivates and involves the audience to active participation and provides the teacher immediate feedback. In the universities of Leiden and Amsterdam wireless electronic voting is being implemented in the curriculum of the medical school. In this setting the personal laptop or PDA of the student is used as a wireless voting keypad.

Work done: Faculty training is thought to be a key essential element for successful implementation of this new teaching application. Therefore, a special training program has been developed on using the voting software with the use of student laptops. A supplementary manual has been developed on the educational use of the system during lectures. Participants of the training receive a practical guide for further reference. All materials developed are publicly available.
Take-home messages: Successful implementation of new technologies requires faculty development.
The project is made possible by the support of the SURF Foundation, the higher education and research partnership
organisation for Information and Communications Technology (ICT): http://www.surf.nl

3N/P7 The effectiveness of instructor’s intervention in classroom using questioning strategy
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Seodaemun-Gu, Seoul, 120-752, Republic of (South Korea))
Background: Questioning strategy can promote meaningful learning for learners. This study was done to analyze the
learning effect and continuance of learning effect by questioning strategies.
Work done: A total of 112 students who enrolled in the physiology class in 2003 at YUHSS in Seoul, Korea were examined
in this study. The subjects were randomly divided into 3 groups to compare the learning effect based on the type of
instructor’s intervention. An a pretest was done before class. Posttest was done immediately, 3 weeks and 6 weeks after
the study. The results were analyzed using analysis of covariance and repeated measures analysis of variance.
Results: The learning effect of students differed depending on the type of instructor’s intervention. The type
of instructor’s intervention where the students were questioned and the instructor answered showed a higher
continuation of learning effect compared with other types. The third post evaluation showed no significant difference
in learning effect and learning effect continuance according to the type of instructor’s intervention.
Conclusion/take-home messages: Meaningful learning increased significantly and learning effect continuance was
increased when the instructor answered students’ questions compared with the method of students answering the
instructor’s questions.

3N/P8 Facilitating learning in dentistry – what a challenge!!
Saadika Khan (Faculty of Dentistry, Univ of the Western Cape, Private Bag X01, Tygerberg, Cape Town, 7505, South Africa)
Background: I discovered that students had difficulty reading the theory of a practical procedure and successfully
translating that into acceptable practical work.
Work done: I provided students with reading material (in 2004, 2005, 2006) and with guiding questions (in 2005,
2006) and tested their understanding before lecturing on that section. A lecture and demonstration was given in
2004, 2005 and 2006. I tested them, with more complex questions, in 2006 after the lecture and demonstration. The
inclusion criteria were no previous exposure to the work and they had to be present for all 3 tests. I used triangulation:
quantitative and qualitative analytical methods.
Results: A change in my teaching practices aided their learning. Analysis of answers indicated that students read the
handout and understood the concepts, but few read more than that. Students had better marks for their own set-ups
(5 months later) when compared to the 2005 class. The guiding questions and tests assisted students’ reading and their
understanding of concepts. Thus they were more able to successfully translate the theory into practical work.
Conclusions/Take-home messages: Changes in teaching practices can improve learning and the successful translation
of theory into practical work.

3N/P9 Teaching chemistry to large classes: evaluation of a tutor support project
Rhena Delport*, Marietjie Potgieter, Gerhard I du Plessis (University of Pretoria, Department of Family Medicine, Faculty of Health Sciences,
P O Box 2034, Pretoria, South Africa)
Background: Approximately one fifth of students that enroll for Chemistry 1 are medical students. Due to the large
class size 30 tutors were appointed for learning support and they were trained to facilitate active learning. A study was
conducted to evaluate the effectiveness of the training of the tutors by assessing student perceptions of the learning
experience. A total of 767 responses were received out of the class of 935 students.
Work done: The following aspects were evaluated with the questionnaire: (1) Whether affective needs were met; (2)
How active learning was elicited; (3) Which student attributes were developed; and (4) Explanations for improved
academic performance.
Results: (1) The affective needs and preferences of the students were accommodated; (2) The tutors predominantly
used collaborative and autonomous learning techniques in their tutorials; (3) Understanding of the subject appeared
to improve with the tutorials; (4) The strongest determinant of improved academic performance was perceived as
student affective needs being addressed during tutor sessions; (5) Employing questions as a teaching strategy to
improve thinking skills appeared to be effective.
Conclusions: Tutor training with the focus on active learning principles facilitates deep learning.
Take-home messages: Addressing the affective needs of students is of utmost importance.

3N/P10 An exciting student activity in the 4th National Medical Education Congress: debate
Hatice Kurdak*, Gulshah Seydaoğlu, Figen Doran (Çukurova University Faculty of Medicine, Department of Family Medicine, Balcali, Adana, 01330,
Turkey)
Background: The aim of this study is to share the experience of debate method which had been held to increase
students’ participation in the Congress.
Work done: In May 2006, a students’ debate session was held at Çukurova University Adana. The selected theme was a
hot topic in the medical community; “the classical and integrated medical education should maintain; right or wrong”. All
the medical faculties in Turkey gave information about the event and its rules in advance. Twenty four of them declared
a request to participate. Students prepared for preliminary elimination; finally, faculties chose their representatives.
The day before the session, among all attendées 8 debaters were selected for government and opposition teams by
lottery and a jury was composed (n=51). At the end of the debate debaters were rewarded.
Results: More than 180 students participated in this activity and to the congress in general. Medical students acquired
knowledge and skills to gather, analyze and apply information and ideas, to communicate effectively, to recognize
and solve problems, make decisions and act as responsible members of their society by this experience.
3N/P11 Combined triple jump and multi-station exercise as a tool for integration of medical knowledge

Thirdsk Pholchan*, Krongkarn Chootip (Naresuan University, Faculty of Medicine and Faculty of Medical Science, 65000, Thailand)

Background: Medical students at our university were found to be unable to properly retain, integrate and apply basic medical science into clinical study. A new learning method was developed to improve their competency through a combination of triple jump and multi-station exercises.

Work done: Combined triple jump and multi-station exercise was presented, in the form of a case-study-based series of learning activities including individual and group work as well as class discussion. Step One: Students were presented with a problem and additional pieces of information they required were identified. Step Two: The students researched the problem and gathered information for 1 week. Step Three: Learning activities at three stations each presented further information on an aspect of the case. The students were divided into sub-groups, each of which acquired the information at a station, through the activities. Each sub-group reported back to their group. Tutors gave feedback and answered any further questions. The students and tutors then assessed their satisfaction.

Conclusions: Students and tutors find this learning method acceptable in helping students integrate their knowledge.

Take-home messages: Further study is required to determine if this method helps them apply their medical knowledge through their clinical years.

3O/P1 How do health care students use computers?

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Background: The importance of use of information technology in medical education is known to everyone, but the use of this technology by some students for other purposes may interfere with their education program.

Work done: In this study 120 students (60 each from medicine and nursing) were selected randomly and the amount of time they spent on their computer for various purposes was analyzed by SPSS program.

Results: 75% of students learned computer science prior to joining university at high school, and 25% during the first year of the medical university course. 45% of students’ favorite sites were Google; 30% Google and Yahoo; 5% only Yahoo; 20% other sites including Pubmed. However, more than 55% of students did not use the computer for their educational learning, or research purposes. Only 23.3% of students use the computer for learning only and 21.7% used it occasionally for either learning or other purposes. According to the results obtained in this study, students used the computer mostly for chat, games, watching movies and e-mail, etc, and rarely used it for education purposes.

Conclusions/Take-home message: The students may engage with various entertainment programs on the computer and internet which may not allow them to have a proper timetable and study for the examination.

3O/P2 Presenting an online computer based learning (CBL) program and using a hyperlink connection from a CBL to a LMS for registration and evaluation

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Background: ICT applications are a main focus in the medical curriculum at the University of Amsterdam. The feedback from students concerning the CBL programs is essential for tailoring it to their needs.

Aim: To provide a time and place independent online web-based approach CBL program to medical students and to determine whether an automatic hyperlink in a CBL to a LMS (Learning Management System) can be used for registration and evaluation.

Work done: The CBL has been developed in Macromedia authorware 7 and presented on the LMS platform (Blackboard). An automatic hyperlink within the CBL file has been made to a Blackboard survey.

Results: 280 of 342 students completed the CBL program. 9 students had problems with the registration or evaluation. 16 students asked for registry confirmation. 98.2% stated that they found it satisfying to complete the course at home. 41.4% considered the CBL as time consuming. The explanation was instructive according to 99.6% of the enrolled students.

Conclusion/Take-home message: The implementation a hyperlink to the survey within a LMS was successful. The survey was also accessible for the students on the LMS. An automatic registry and feedback confirmation is necessary. Students were satisfied, found it very educational and prefer the use of CBL programs.

3O/P3 E-journal as learning resource in medical students

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Background: Web-based learning or electronic learning promises many advantages in learning resources of medical students. E-journal is one of the effective learning resources that enhance learners’ knowledge and performance.

Work done: A cross sectional descriptive study from questionnaires surveyed in 180 medical students in Buddhachinaraj Hospital, School of Medicine, in February, 2007. The data were analyzed and presented in frequency, mean and percentage. 121 questionnaires were answered (67.22%). There were 44 males (36.40%) and 77 females (63.60%). The
mean age was 22.91 years (21-33 years). The students’ opinions on their ability of computer usage at high and fair levels were 62.80% and 34.70%, respectively. Similarly, they thought their ability of using internet at high and fair levels was 53.70% and 43.80%, respectively. Most students (48.80%) use internet more than 3 times per week, from dormitory (38.80%) and computer room (34.70%). About 58.70% of students use e-journals and consider it as learning resources is high. The proper medical information resources should be provided to enhance student knowledge and performance.

Conclusion: Based on their opinions, more than half of medical students believed that their ability of e-journal usage as learning resources is high. The proper medical information resources should be provided to enhance student knowledge and performance.

Take-home message: Proper medical databases especially e-learning should be provided to enhance active learning.

30/P4 Supporting the formation of online communities of practice
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Background: Teachers of components of the medical, dental or veterinary curriculum can feel isolated. The ability to communicate experiences, develop and share materials, via communities of practice (CoPs), facilitated by Web 2.0 social networking technologies, may help teaching quality enhancement.

Work done: Following the successful establishment of a communication skills CoP the UK Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine, with funding from the Joint Information Systems Committee has made several small awards to form such communities. Disparate clusters of teachers form virtually, with face to face meetings, to support developers of post graduate medical education and to promote a medical learning resource rather than ordinary medical journals at fair level (64.50%) and high level (28.10%) confidently. The frequency of e-journal usage was fair (55.40%) and high level (29.70%), respectively. The most frequently used search engines were generic search engines rather than specific medical search databases.

Conclusions: The development of a set of essential skills and a serious commitment to sharing are necessary to help CoPs succeed. Successful collaboration for geographically dispersed individuals with similar teaching commitments, requires the willingness to learn new communication tools and methods, and regular participation in a structured series of activities, centred around a common topic or theme.

Take-home messages: Web 2.0 technologies offer transparent, easy to use tools, but it is the commitment of excellent teachers sharing experiences of their subject openly which may enhance curriculum development.

30/P5 Cooperative building of a glossary of clinical terms
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Background: Assessing the reliability of Internet sources of knowledge and enhancing the ability of working together are some of the objectives of the course of Clinical Methodology, third year at the 1st Faculty of Medicine of Rome. The course is delivered in a blended modality, both in presence and by e-learning. Clinical clerkship is also encompassed.

Work done: Students were divided in small groups for clinical activities and for a closer interaction in the virtual environment. Each time they found a new term during clinical activities they had to look for information through Internet and submit a short definition for the Glossary, which was maintained on the e-learning platform. Each definition could be discussed by the other students in the forum both as to its correctness and as to the accuracy and reliability of the declared source.

Results: During three months of the exercise almost 500 items were collected and 570 messages were exchanged by the discussion forum, with 59 out of 82 students involved in this cooperative activity. During the activity both lectures and educational resources were delivered about the basic principles of reliability for health information – like the HON code – and about the main issues of Intellectual Property Rights.

Conclusion: Cooperative activities are at the core of a distance learning course.

30/P6 Do facilitators’ attitudes affect students’ use of eLearning in PBL and self-directed learning?
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Background: Since 2000, dedicated teams of staff have worked to develop the managed learning environment, associated systems and online learning resources at Peninsula Medical School (PMS). Despite excellent provision of materials, use of online tools and a comprehensive staff development programme, feedback has shown that usage of the system is not consistent across student cohorts and staff groups. Students using online resources and tools find that their learning is enhanced and staff users find them invaluable in their interactions with students. So, from perspectives of students and staff what barriers and enhancers are in operation and influence usage? This study aimed to explore the influence of facilitator attitudes and behaviours on students’ utilisation of e-learning resources and tools to support PBL and self-directed learning. It hopes to contribute to existing knowledge about the potential of attitudes to influence development, uptake and use of e-learning in wider higher education contexts.

Work done: PBL tutors’ personality/learning types and their attitudes to e-learning resources and tools were examined using a combination of questionnaire and focus group discussions. A questionnaire was also administered to students to explore student perspectives. Anonymised usage data from system log-files was sampled and subjected to basic quantitative and qualitative analysis.

Results: Preliminary results, conclusions and take-home messages regarding key underlying issues which enhance and hinder full and effective use of e-learning by medical students in the PMS learning community will be reported. Implications for future research will also be discussed.
30/P7 REHASH (Re-purposing Existing Health Assets to Share): the evaluation
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Background: St George’s University of London, led a consortium of Higher Education and Further Education partners in the REHASH project, which took existing collections of high-quality health resources developed to support medicine, and adapted these for different educational ‘levels’ and different healthcare courses.
Work done: The resources have been widely disseminated and placed in the UK repository Jorum. The project is now in its evaluation phase and addresses the following questions: can well-designed Reusable Learning Objects (RLOs) be large enough to be ‘useful’, and yet sufficiently ‘unrestrained’ by context, for application in other courses? Is it feasible that resources generated by one institution can be reused with little or no change in another, and does institutional sharing aid learners? What is a useful resource ‘size’? Will users access resources through repositories, or just ‘Google’ for them?
Conclusions: Early evidence suggests resources can be successfully re-purposed to different educational levels and although resources need to be adapted for different healthcare courses, teachers may be willing to share where context is similar. Breaking up large topic-sized learning objects into individual assets and making them available on an open website will provide further insight into how and when these resources are used.

30/P8 An interactive web-based approach to teach third year u.s. medical students continuous quality improvement in a primary care clerkship
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Background: Teaching third year medical students continuous quality improvement (CQI) principles provides a foundation for enhanced patient outcomes, but remains challenging because students rotate through different clerkships and lack continuity practices.
Work done: In our primary care clerkship third year students spend five weeks at one of 22 practices. We designed an interactive web-based diabetes module requiring students to: audit patient records from a “simulated” clinic; explore CQI initiatives from their “real” clinics; and write an essay proposing diabetes CQI initiatives for their “simulated” clinic. Essays including faculty feedback are electronically shared with all students.
Results: Students proposed CQI initiatives and described: diverse patient demographics; diabetes care processes from multiple perspectives; community-based culturally responsive interventions; and interdisciplinary chronic disease management. After the exercise, 95% of students correctly identified core concepts of continuous quality improvement on a test question.
Conclusions: Third year medical students can learn continuous quality improvement. Students can identify health care systems variations and outcome measures across practices, and recommend changes in a clinical process.
Take-home messages: Interactive web-based approaches integrating simulated and real clinical experiences can facilitate teaching of CQI. Linking their clinical knowledge to improvement knowledge is critical.

30/P9 Situation of e-learning in medical education at Mashad Medical University, Iran, 2006
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Background: Most universities and institutions and scientific centers present their courses by e-learning. Online learning, virtual learning and distance learning are terms that we use instead of e-learning sometimes. Designing and implementing effective e-learning is a complex process, which involves many factors. Lecturers need to constantly consider, evaluate and adjust these factors to provide effective e-learning environments for students.
Work done: In this paper, we report on the design and development of the Online learning in medical universities. Sample size consisted of 41 university and independent colleges. Tool for study was a interview and a check list with some background questions. Data were collected containing numbers of courses and academic degrees.
Results: The result of the study revealed there was less than 1% of courses of medical education online. 61% of universities and colleges (25 out of 41) are presenting part of the courses by e-learning. For 71% this method of learning is relevant to the continuing education program in medical education. We found no significant difference between kinds of universities. In 7 main universities that established an international section, most of the courses will educate up to 2008.
Conclusion: In Iran, e-learning in medical education is developing slowly.

30/P10 The evolution of a hybrid palliative care course for family medicine residents:
instructional design changes
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Background: Instructional design (ID) is important in web-based learning (WBL) but the literature on this topic in medical education is scant. We report our experiences, focussing on ID aspects, in delivering a hybrid course to rurally-based family medicine registrars in Alberta, Canada (Classes 2002 to 2007).
Work done: The course involves face-to-face (F2F) learning and WBL. Challenges have included the geographic dispersion of learners and faculty, participants’ proficiency with technology, lack of experiential learning opportunities and a full curriculum. Ongoing evaluation (qualitative and quantitative) has led to several ID changes over the years.
Results: The F2F component (2x1½ days) has shifted towards focussing on competencies requiring experiential learning (e.g. communication) and case discussions. OSCEs have been introduced to enhance acquisition of skills. The use of synchronous and on-demand asynchronous WBL technologies has increased in contrast to reliance on asynchronous conferencing. With aCMC, the focus has shifted towards reflective thematic discussions (e.g. end of life decision-making). The duration of the WBL component has shortened (8 to 3 months). The rubric and criteria to assess successful completion of the course has been controversial and challenging.
Conclusions: WBL requires unique ID considerations in medical education.
3O/P11 Can distant learning completely replace the traditional methodologies in medical education?
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Background: A second-level Master of Distant Learning and Telemedicine started in 2005 in the Schools of Medicine and Surgery of different Italian Universities. The overall coordination has been entrusted to “Sapienza” – University of Rome, II School of Medicine.
Work done: During the experimentation stage, the Master will last two years and it is addressed to the Teaching Staff, to Trainers and Operators of the National Health Care. These people will be given a specific background in the field of remote learning and of all medical didactic sectors, with special attention focused on the use of advanced technologies for the creation and management of Telemedicine services. The reference model of the Distant Learning Unit is based on a complete and integrated Learning platform able to ensure the supply of training activities through a hybrid earth-satellite video-communication system. The technological solution of the Master foresees the enjoyment of the sessions in a virtual room without the need of specific installation at a peripheral level. Therefore the working and the application environment should be transformed into a training and learning environment.
Conclusions: This pilot experience emphasizes that, especially within the medical framework, Distant Learning cannot completely replace the so-called traditional lesson or experience working with patients in a hospital ward or in the operating room, all aspects of which develop a student’s professional skills. Distant Learning is however able to support these fundamentals by offering new didactic opportunities to the Teaching Staff, provided that the Staff acquires the adequate use of new technologies and methods.

3O/P12 Latin and Czech anatomical and histological terminology – electronic database
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Background: There is neither contemporary nor historic summary of the Czech histological terminology. FICAT (Federative International Committee on Anatomical Terminology) published a new revision of the Terminologia Histologica in 2007 with recommendation to follow these activities in national nomenclature, too.
Work done: The authors created a website http://www.anatomickenazvoslovi.cz with a database concerning the Terminologia Anatomica (TA) and its comparison to older anatomical nomenclatures such as BNA (Basilienia Nomina Anatomica), INA (lenaensi Nomina Anatomica), PNA (Parisiensia Nomina Anatomica) and their later revisions. All is completed with the Czech Anatomical Terminology and of course additional Czech equivalents with their source, eponyms and Czech vernaculars (if they exist). It is accessible as a free license program YOODA, created de novo just for this purpose. This programme and database is used for the Terminologia Histologica, too, with comparison to Nomina Histologica 1970, 1975 revision and 1985 revision, made by IANC (International Anatomica Nomenclature Committee).
Conclusion: A database of histological terminology is available and will be filled with Czech equivalents to provide a base for both the education and the translation purposes.
Grant support: MŠMT 151/2007.

3O/P13 The e-learning initiative for postgraduate medical education and Continuing Professional Development (CPD)
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This E-Learning initiative for all healthcare providers in SingHealth (a healthcare cluster in Singapore with 14,000 employees) was started in January 2004. It was to enhance and to enable easy access to up-to-date content for purposes of postgraduate education and also accreditation of CME points which is mandatory for maintenance of CPD and license to practice in Singapore. Our E-Learning journey in SingHealth comprises 4 important components: (1) The establishment of the Smart Classroom located at the Postgraduate Medical Institute. (2) The content development comprising House Officer (HO) training modules, BCLS modules and masterclasses in Surgery are created in-house by our own content experts with technical help from Hewlett-Packard. These are supplemented by lectures captured from both within and outside the Campus. (3) Our Learning Management System allows us to track, monitor and report on the progress of all our trainees. (4) The SingHealth one-stop CME portal was launched in August 2005 to serve as an easy one-stop repository of all CME activities taking place in all our SingHealth Institutes. Our licensing authority, the Singapore Medical Council, has allowed a maximum of 10 CME points for doctors who access the Smart Classroom content online. The latest E-Learning initiative is the launch of a Tripartite Collaboration between the Graduate Medical School (Duke-NUS) and SingHealth. The first batch of the Graduate Medical School students will come on stream in August 2007 and interactive learning will take on an entirely new and exciting dimension. We will share this latest facet of virtual medical education in future meetings of AMEE.

3P Curriculum evaluation

3P/P1 An alumni evaluation of a core curriculum of liberal arts and humanities in medical education: “Training for the job” vs. “Learning for life”
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Background: A compulsory part of the medical education at the University Witten/Herdecke (UWH) is the core curriculum “Liberal Arts and Humanities”. It provides interdisciplinary supplementary education. One study day per week is reserved in all curricula from all faculties at UWH to enhance students’ competences, especially in the humanities/arts, (self-) reflection and communication skills.
Results: In the quantitative section the core curriculum was ranked by the alumni with regard to the job demand at 3.25 (mean, SD 1.578). In contrast “self-reflexion/personality development” was ranked with 1.83 (mean, SD 1.028) as a “top” and “interdisciplinary references” as the fourth best of sixteen different aspects in their study (mean 1.99, SD 0.951). In a qualitative evaluation alumni valued the core curriculum as an asset for personal development.

Conclusions/Take-home messages: The evaluation of the core curriculum “Liberal Arts and Humanities” showed an average relevance for the job, whereas integral aspects were ranked as important. In a qualitative evaluation alumni valued the core curriculum as an asset for personal development.

3P/P2 Appraisal of training and internship courses in the hospital on the basis viewpoints of students of Tehran University

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Background: Every educational system, whether of micro or macro requires: (a) An educational research and appraisal to be performed on its educational courses; (b) To apply an education development plan, and (c) To impose an educational management system. The purpose of educational management is optimal use of all resources for completion of educational system goals. In other words, educational management is a process for satisfying the trainees and instructors that what is expected to be done by them satisfactorily would result in an improvement in the quality of the educational system.

Work done: The center of this research, was based on appraisal of education development of Tehran University of Medical Sciences with the goals of adaptation of education with community needs and promotion of quality by implementing a questionnaire and polling from university students at training and internship phase in 2004 and 2005. The research is a cross sectional study of descriptive and analytical types. 185 students of Training and Internship phases completed a questionnaire.

Results: The average of complete appraisal on programs of the said phases include theoretical classes in relation to applied education 3.32%, intelligent proficiencies 2.98%, communication proficiencies 3.38% and practical skills 3.9%.

Conclusion: Implementation of the results of appraisal in educational planning and educational activities indicate that the educational planners have tried to meet schedules and also take advantage of potential resources for achievement of the goals and educational quality.

3P/P3 Evaluation of new curriculum of Shahid Beheshti Faculty of Medicine

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Background: A continuous evaluation system to provide timely access to relevant information and feedback is essential for any program, especially a program like the new UME program of Shahid Beheshti Medical School.

Work done: The evaluation activities which have been performed so far can be divided into summative and formative evaluation: (1) Random evaluation of teaching sessions; (2) Course evaluations; (3) Evaluation of student exams; (4) Student surveys on basic science textbooks; (5) Focus group sessions with students regarding their problem with the new program; (6) Faculty surveys regarding their problems; (7) Evaluation of summative basic science exam. A student survey, a faculty survey and a summative basic science exam were 3 main activities of which the results have been studied by educational experts and reflected in the program as soon as possible. The program is continuously evaluated by external evaluators of MOHME.

Conclusion: At this time and after 2.5 years of program implementation there is a need for more comprehensive evaluation which takes into account the WFME standards. The formative evaluation of a reformed program always gives useful information for better directorship of the program but the limited resources may hinder comprehensiveness of evaluation and important data may be missed.

Take-home message: The formative and summative evaluations are essential and complementary in a change program.

3P/P4 Master in Health Professions Education program as a complementary tool for undergraduate curriculum evaluation

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Background: In 2001, the Arabian Gulf University established a Master in Health Professions Education program (MHPE). This program is divided into five modules of which the first four are course-work, and the fifth is a research project leading to a thesis in educational research.

Work done: The MHPE program provided an opportunity for carrying out theses work directed to evaluation of the ongoing PBL undergraduate (UG) curriculum, besides the periodic program evaluation undertaken by the College. The range of topics being researched varied from student assessment, PBL tutorial process, learning styles, curriculum change and outcome measures of PBL. This unique approach allowed in-depth, focused, independent research into different aspects of the curriculum. The findings from these studies were used for taking decisions for curriculum changes and for identifying themes for faculty development programs (FDP). An example of the concerns raised through thesis work was related to the level of integration in student assessment. As a result, a series of FDP workshops in constructing effective integrated test items were initiated. Findings from other theses were also utilized.

Conclusion/Take-home message: The MHPE programs can be used as a valuable tool for evaluation of undergraduate medical programs.
3P/P5  “If I were Dean of Med School” – students’ views of their curriculum
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Background: At the Charité Medical School, students can choose between two study tracks: a traditional, lecture-based track with 90% of the students and another reformed, pbl-based track with 10% of the students. A new curriculum encompassing the strong points of both tracks is under construction. Our student initiative started a survey to identify problems and amenities in both tracks.

Work done: We posed 22 closed and 3 open questions by means of a web based questionaire. Those questions were chosen after having screened for problems by focus group interviews and were then peer-reviewed for comprehensibility.

Results: 500 students completed the questionaire. The participation was equal over terms. The open questions section yielded most interesting results. Here, students were asked what they would maintain, newly integrate or modify in case of a curricular reform. Students of lower terms complained about time management, severe examination and too much basic science practical. Students of higher terms asked for better feedback in exams, more courses on scientific methods and modifications in communication courses and en-bloc courses.

3P/P6  The results and issues of accreditation on medical schools in Korea
Eunbae Yang*, Moosang Lee (Department of Medical Education, Yonsei University Health System, 34 Shinchon-Dong, Seodaemun-Gu, Seoul, 120-752, Republic of (South Korea))
Background: Korea, like several countries, has been able to improve the quality of medical education by adopting the accreditation process. The purpose of this paper is to consider the results of accreditation on medical schools and to demonstrate some issues needing more consideration.

Work done: The ABMEK, Accreditation Board for Medical Education in Korea, began its first cycle of inspecting medical schools in 2000 and completed in 2004. As a result, 32 medical schools were fully accredited for a period of 5 years, and 9 medical schools were conditionally accredited. With regard to human resources, the faculty involved in self-study of medical schools was all 1,518 and the faculty who participated in the site visit was 158 people. The expenditure that is paid by the ABMEK for accreditation is $504,854. Taken as a whole, medical schools are filled with 95.8% of ‘must’ standards and reached 82.2% of ‘should’ standards.

Conclusions/Take-home message: It is clear that accreditation is a high-stake evaluation. There is no disagreement on this point that the accreditation process has influenced the quality of medical education programs positively, but it leaves unanswered how to measure the cost-effectiveness.

3P/P7  Quality Management System of education. First results. Re-certification after one year
Margret Tiebel*, Oliver Tiebel, Peter Dieter (Dresden Faculty of Medicine, Deans Office, Fetscherstr. 74, 01307, Germany)
Background: The quality management system (QMS) of education at the Dresden Faculty of Medicine was certified by DIN EN ISO 9001:2000 in 2006. Dresden Faculty of Medicine was the first medical school in Germany that underwent this procedure. A high transparency of the educational process was achieved by clearly formulated goals, description of educational processes and accordant responsibilities. Short, middle and long term goals have been summarized in a first management review.

Work done: The progress made with the QMS during the last year resulted in a successful recertification. A quality task force was formed at the faculty. A reform of the clinical part (Year 3-5) was initiated. The amount of skills training was elevated. A structured MD-thesis program was implemented. Faculty is working on a profile based multi step admission procedure. The amount and forms of e-learning have improved. The evaluation process was revised and an additional external evaluation will be conducted by Harvard Medical International. The QMS led to a strengthening of the international partnerships also within the EU. In the poster the achievements of the faculty will be described in detail. Next steps and future developments will be outlined.

3P/P8  Perceived general competencies of final year medical students of Shiraz Medical Sciences University 2005
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Background: Medical education is laying down the foundations for future professional life. Nevertheless there is some doubt that medical education programs are fully competent in educating competent graduates in a way to be responsive for their community based professional needs. Evaluation of the competencies of medical graduates reflects the performance of the medical education program, resulting in the improvement of the program.

Work done: In this descriptive evaluation study self-perceived competencies of 71 out 90 final year medical students of Shiraz University of Medical Sciences were investigated using a Likert scale 101 item questionnaire measuring 17 general competencies. Mean ratings of all competencies were identifed.

Results: Descriptive data analysis revealed that the mean rating of all competencies is more than 3/5 out of 6. Four top identified competencies are case presentation, basic procedures, test interpretation and diagnostic decisions. The lowest four competencies were identified as: Geriatrics, Nutrition, Practice Management and advanced procedures.

Conclusion: In our medical education program more attention is needed to improve the competencies such as geriatrics, nutrition, practice management and advanced procedures. Improvement of these competencies can result in a better care delivery by general practitioners in the community.

3P/P9  Linking assessment to faculty development
R J Testa, H Yoshida (American University of the Caribbean School of Medicine, 1 University Drive, Cupecoy, Sint Maarten, Netherlands Antilles)
Background: The American University of the Caribbean School of Medicine piloted course evaluations to link curriculum evaluation to faculty development. Prior, one-dimensional instruments were used largely focusing upon students’ perceptions of the quality of instruction. Faculty did not find the information valuable and attributed students’ reactions to nonspecific variables outside of their control.
Conclusions: Based on the result, we will redesign instruments at the grass-roots level to 1) address faculty resistances and student apathy to evaluation and 2) provide a channel to link assessment results to instructional interventions.

3/P10 Final year medical students evaluate their psychiatric rotation

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Background: At the University of Pretoria senior medical students do a seven-week rotation in Psychiatry at Weskoppies Hospital. Psychiatry for general practitioners has recently been added as one of the major disciplines of the undergraduate medical curriculum. Therefore it is important to get feedback from students on their perceptions and experiences. Academics could use this feedback to improve on current teaching and learning practices and to also make a contribution to the further development of the curriculum.

Work done: A questionnaire was administered at end of each rotation in 2004 and 2005.

Conclusions: Perceived Strengths: Patient contact (practical); Staff (consultants & registrars); structure (ward rounds, morning discussions, etc); specific content; Reasonable workload; Student-friendly atmosphere; Perceived shortcomings: In all rotations there were students who felt they wasted too much time (waiting or length of rotation). Comments linked to specific rotations: Drawing of blood (without supervision?); Absence of registrars/consultants (exams, individuals absent); Not sufficient exposure to certain types of patients; More discussions on pharmacotherapy; More exposure to children and adolescents; More teaching and involvement by some registrars; More conferences with some consultants; Improve exposures relevant for GPs (e.g. 72 hour observation, sleeping disorders); “Own” patients for students; No reading from textbooks at morning discussions; Formative tests; Shorten rotation; Refreshments and breaks appreciated. Mostly positive perceptions and experiences by students. Responses and changes in mental care (e.g Mental Health Act) – revision of questionnaire for students of 2006.

Conclusions: The results of this survey have been used for further self-reflection in the Department.

3/P11 Students’ assessments in teaching and learning

Suchat Tantiniramai*, Wiwan Wiwatkul (Prapokklao Hospital, Leuboen Road, Muang District, Chanthaburi Province, 22000, Thailand)

Background: There was 1 teacher in 2001-2002 and 2 teachers in 2003-2005 at Rehabilitation department. The 5th year medical students were 10-20 each year. This study aimed to study the assessments in teaching and learning methods and compared between the number of teachers.

Work done: 10 items in teaching and learning methods were assessed by the 5th year medical students between 2001-2005. The difference of assessment scores between number of teachers was compared by unpaired T-test at significant level 0.05.

Results: The 85 students’ assessments in teaching and learning methods were reported in 2001-2005. In 2001-2002 there were 35 students and the assessment scores were between 4.29-4.67. (4.44 + 0.57). In 2003-2005 there were 50 students’ and the assessment scores were between 4.52-4.65. (4.59+0.52). There was no significant difference in assessment scores between 1 and 2 teachers (4.44+0.57 vs 4.59+0.52, p=0.36) and all items.

Conclusions: The assessment in teaching and learning methods from students were good in all items and they was no different between the number of teachers.

Take-home messages: The students’ assessments are important to feedback and improve the teaching and learning methods.

3/P12 Twelve good ideas in medical education: how good do they get?

R Arora*, D Arora (Lampang Medical Education Center, CPIRD, 280 Paholyothin Road, Muang, Lampang, 52000, Thailand)

Background: Educational strategies in Medicine are usually implemented based on the creativity of renowned international educators. There are only a few reports that mentioned students’ opinion before the implementation.

Work done: A descriptive study was done to ask students about the usefulness of twelve good ideas in Medical Education and the urgency to implement them. Data were collected from 93 medical students attending the block of Ob/Gyn. Twelve good ideas were Outcome-based education, Curriculum mapping, Assessment-to-a-standard with adaptive curriculum, Spiral curriculum, Curriculum integration, Core curriculum and special study modules, Clinical skills lab, Study guides, Portfolio assessment, Multiprofessional education, Measuring education environment, and Twelve roles of teacher. A five point Likert scale was used in the questionnaire.

Results: Results showed that Clinical skills lab was the most useful idea while Multiprofessional education was the least useful. Clinical skills lab was also evaluated as the most important idea to be implemented and the least important one was Multiprofessional education.

Conclusion: Students viewed that Clinical skills lab is very useful and important to them, while Multiprofessional education was rated as the least useful and they can wait for this.

Take-home message: Educators should count the students’ voice as an important resource before making any change in Medical Education.
**3P/P13 Taking account of diversity when planning an educational programme**

Aza Abdulla*, S Gangooly, A Al-Khathomi, M Salih (School of Postgraduate Medical & Dental Education, Wales College of Medicine, Cardiff University, Heath Park Cardiff, CF14 4XN, United Kingdom)

Learning to value diversity has become a fundamental ingredient to the planning of educational programmes. Ethnic background, religion or socioeconomic status impact on personality types and are responsible in a major way for the differences in communication styles exhibited among individuals. It is through appreciating these differences that a culture of safe healthcare practice is ensured. Involving members of different cultural and ethnic groups in the design of the educational programme and incorporating live experiences of these groups and their interactions should consolidate the elements of core knowledge of the programme. This will help students to achieve cultural competency and produce a self-awareness to avoid stereotyping and respect patients from different backgrounds. For the learner, educational programmes should, in their planning stages, develop insights and strategies for adapting to the needs and concerns of individuals from different cohorts, backgrounds and cultures. An understanding of learning styles, personality type differences and communication skills, as function of diversity, and incorporating these in the design of a programme should reduce the variation of performance which is currently seen among medical school graduates.

**3P/P14 Medical education – a continuous challenge**

Maria de Lourdes Veronese Rodrigues, José Fernando de Castro Figueiredo, Carlos Eli Piccinato, Margaret de Castro, Afonso Dinis Costa Passos, Maria de Fatima Aveiro Colares, Cristiane Martins Peres, Luiz Ernesto de Almeida Troncon (Faculty of Medicine of Ribeirão Preto, University of São Paulo, Brazil, Av. Bandeirantes, 3900 - Campus Universitário - Ribeirão Preto, SP, 14048-900, Brazil)

Background: Taking into consideration the necessity of continuous evaluation and adequacy of medical curricula, the opinions of Faculty of Medicine of Ribeirão Preto, University of São Paulo, Brazil (FMRP) medical teachers about the main problems of Brazilian Medical Education, that required prompt intervention, and suggestions for solution, were collected.

Work done: An open questionnaire was answered by thirty-six faculty members, with institutional administration commitment.

Results: The challenges most frequently pointed out were ethics and human relations; accreditation of Brazilian Medical Schools; adequacy of the curriculum to professional practice and rationalization of teaching new topics according to progress of human knowledge. The participants proposed actions such as the creation of a national policy for effective accreditation, teaching in the community, curriculum adequacy to national health system, supra-departmental curricular organization, and effective mechanisms of evaluation.

Conclusion: The opinions of FMRP teachers are in agreement with the concerns about Medical Education in Brazil and worldwide.

Take-home messages: Challenges in Medical Education are multiple and it is necessary to implement a continuous process of evaluation and improvement.

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**GIME 3R Good Ideas in Medical Education (GIME) 1: The curriculum**

For abstracts see session 2R.

**Short Communications 3S Use of portfolios in undergraduate medical education**

**3S/SC1 An international qualitative study to develop a competence profile for an effective portfolio mentor**

A Prop*, J Shacklady, E Driessen, T Dornan (Maastricht University, Universiteitssingel 60 - P.O. Box 616, 6200 MD Maastricht, Netherlands and University of Manchester School of Medicine, Manchester, United Kingdom)

Background: Having a mentor is an important condition for effective portfolio learning. However, the published literature gives little information on the competences of an effective mentor.

Work done: We conducted an international qualitative study to develop a competence profile for portfolio mentors. Students' and teachers' perceptions of essential competencies for an effective mentor in different study phases (pre-clinical and clinical) were explored in 11 focus group discussions in 2 European medical schools (Maastricht and Manchester). Data were analyzed according to grounded theory principles.

Results and conclusions: A clear description of the attributes of an effective mentor emerged from the analysis. An ability to establish and maintain personal contact with learners was critical. An effective mentor was someone who had gone through the same development from student to professional as their mentee. Medical knowledge was regarded as of minor importance. Students and mentors agreed that an effective mentor should combine an ability to coach and assess.

Take-home message: Creating and maintaining personal contact, providing a model for a mentee's development path, and being able to balance the roles of coach and assessor are of critical value for effective mentoring.
3S/SC2 Students’ perceptions of a portfolio using the CanMEDS competency framework in the last (“transitional”) year of undergraduate training

C J P W Keijers*, D P M E Obbens, J van Tartwijk, Th J ten Cate, E W M ter Braak (University Medical Center Utrecht, Heidelberglaan 100, Room G02.228, PO Box 85500, 3508 GA Utrecht, Netherlands)

Background: A comprehensive, structured portfolio was implemented in the last year of undergraduate training to foster work based learning in a variety of contexts, to promote reflection, feedback and for summative assessment. The last year is designed to facilitate the transition to postgraduate training.

Work done: Students’ perceptions and satisfaction were evaluated with mailed questionnaires.

Results: From October 2004 to June 2006 we received 273 questionnaires (response rate 49%). Rotations include clinical internships (n=171), research electives (n=82), miscellaneous (n=20). The portfolio was actually used in nearly all rotations. Importantly, planned meetings with supervisors nearly always took place as scheduled. However, the various written materials (e.g. self reflection assignments, Mini-CEX) intended to support claimed competencies were not always acknowledged for assessment (ranging from 52% to 89%). 57% of respondents appreciated overall satisfaction at least sufficient (≥ 6) (median(range): 6(1-9), 10 points’ scale).

Conclusions: The actual use of the portfolio was excellent. However, overall satisfaction was mediocre, possibly due to perceived time investment and perceived lack of appropriate acknowledgement of materials.

Take-home messages: Appropriate and timely staff development may be critical for their compliance with use of the portfolio as intended and, therefore, for student satisfaction.

3S/SC3 Portfolio: what say the students ?

P Tempski*, E Tomic, C Gerhart, M Pinto, R Casado, P Freitas (School of Medicine Evangélica do Paraná, Rua padre Anchieta, 2770, 80730000, Brazil)

Background: Portfolio has been used for formative or summative assessments. Reflections, creativity and autonomy are the most important aspects to consider.

Work done: Embryology used this tool of learning in 2006. Fifty two students were instructed to think critically about experiences, practices, personal doubts, theory, and results of their learning process. They all registered in a Portfolio. The teacher observed ten points, weekly: context, reality, creativity, practical activity, human reflections, transdisciplinary, iconography, organization, correlation between practical and theory. After that the teacher argued the Portfolio with each author. The students responded in a questionnaire after the end course.

Conclusions: The students approved of the instrument (86.5%). Their advantages were: motivation, curiosity and creativity (63.5 %); improved the relationship between student and teacher (90.4 %); doubts well solved along the course (88.5 %). Students just complained about the time. They said it demanded time to do a good Portfolio. The teacher agreed with the students: we need time to correct it and understand how the student is building their knowledge.

Take-home message: Portfolio was shown to be a good tool to the process of learning, improving the knowledge and interest of the students in this discipline.

3S/SC4 A systems analysis approach to workplace portfolio learning

Iain Campbell*, Isobel Braidman, Hilary Dexter, Jim Petch, and Tim Doman (University of Manchester School of Medicine, Stopford Building, University of Manchester, Oxford Road, Manchester, M13 9PL, United Kingdom)

Background: The need to deliver integrated, personalised, portfolio learning within the UK’s largest medical school, which has 2000 students at university, hospital, and community health facilities dispersed across the North West of England.

Research question: How can systems analysis help design a technology to support medical students’ workplace portfolio learning?

Work done: “Horus”, an established education technology, has been chosen to introduce workplace learning management and portfolio services to the “MediLea” bespoke virtual learning environment (VLE), which supports a PBL curriculum. Services are to be developed that support: Students’ reflective learning; curriculum quality management; teachers’ personal development; cross-institutional curriculum delivery by administrators and managers; integration of assessment activities into the VLE; technology transfer to health professions education other than medicine. A service oriented model driven development method is employed to produce an integrated suite of services.

Results: This work in progress has already yielded typologies of “actors” and their roles, workflows through which those actors perform those roles, “organizational units” that provide a context for, or are directly involved in their performance and the underlying system ontology. This analysis underpins the planned development within a Service Oriented Architecture.

Conclusion: It has proved possible to make explicit the complexities of workplace learning within a PBL curriculum and make them amenable to e-Technology support.

3S/SC5 Inter-rater reliability of a portfolio assessment

Gerald Netztke* (Hannover Medical School, Carl-Neuberg-Str. 1, 30625 Hannover, Germany)

Background: A course of “history, theory and ethics” (GTE) has been added as a compulsory subject to the German medical curriculum in 2003. Course contents, teaching methods and modes of assessment differ significantly between Universities. At Hannover Medical School a Portfolio Assessment is used as final examination for marking. Each portfolio consists of five written essays dealing with issues concerning the course content. After every seminar, students write up to two pages per essay. Each essay is marked separately on a 5-point-scale. A check-list of relevant aspects of the respective exercise helps the rater to detect and mark the quality of the portfolio. The final score is derived from the sum of all five exercises. The maximum score is 10 points per portfolio.

Work done: In order to test inter-rater reliability of the assessment, a total of 41 portfolios has been marked and remarked by four members of the teaching staff.

Results: Maximum difference between raters was 3.5 points. 78.1 % of all marks varied 2 or less points between all raters. Detailed results from this test will be given.

Conclusion: The author concludes from the results that consistency and inter-rater reliability are sufficiently high.
3T/SC1 Where are the hidden learning opportunities in the clinical learning environment?

Dason E Evans*, Nakul G Patel (Barts and the London, Queen Mary's School of Medicine and Dentistry, University of London, Room 2.10, Centre for Medical Education, Old Medical College Building, E1 2AD, United Kingdom)

Background: A wide body of literature agrees that medical students' transition to the clinical learning environment is traumatic. Many students have difficulty identifying the multitude of rich and varied learning opportunities around them, which remain hidden. Students complain of “nothing happening” or being “bored on the ward”.

Work done: We are surveying medical students and multi-professional clinical staff nationally and internationally using an innovative web-based approach. We have asked participants to highlight learning opportunities that others have missed and ideas for making best use of them. To date, hundreds of submissions have been made from countries across the globe.

Conclusions: In an entertaining and interactive presentation, we will present the range of submitted ideas, including those most commonly submitted and a selection of the most alternative ideas.

Take-home messages: Participants will leave this session with new and exciting ideas for encouraging their students to make best use of the clinical learning environment.

Conflict of interest: Data collected through the website may be published in a textbook. All submissions used will be fully acknowledged. See http://www.101things.org for full details, or even to submit an idea!

3T/SC2 Medical students, sex and religion; barriers to peer-peer and peer-self physical examination?

C McMenamin, A Vickery, P McGonigle, A Britto, M Jiwa, J Emery (University of Western Australia, 328 Stirling Highway, Claremont, Western Australia, WA 6010, Australia)

Aim: The aim of this study was to establish the attitudes of medical students to peer-peer/self physical examination (PPSE) during the clinical skills sessions at the University of Western Australia (UWA).

Work done: The questionnaire was distributed to 576 students in the first 3 years of a 6-year medical course. We received 416 (72.6%) responses. This questionnaire asked students to indicate which of 11 body parts they would not be willing to examine or have examined by a peer of the same and opposite gender. They were then asked to rate their comfort level on a 5-point Likert scale. Descriptive data: age, gender, body morphology, ethnicity and religious faith was recorded. Descriptive statistics were employed to determine students’ attitudes towards PPSE. These were used to explore relationships between students’ attitudes towards PPSE, and age, gender and religious faith.

Results: For almost every type of examination female students were significantly more likely to object. Intimate examination would be refused in greater numbers. Non-Christian females were much more likely to object to examination other than to digital rectal examination where females of all denominations objected in equal proportions. Attitudes to upper body examination were shown to be more negative than abdominal examination although non-Christian female students were more likely to object to either examination. Female students who professed to have any religious faith were more likely to have religious faith more likely to object to examination.

3T/SC3 Taking a history, telling a tale: a storytelling approach to teaching history-taking skills

Clayton J Baker*, Stephanie Brown Clark (Division of Medical Humanities, University of Rochester School of Medicine, Box 676, 601 Elmwood Ave, Rochester, NY, 14642, United States)

Background: We have piloted the use of traditional folktales as an innovative tool for teaching history-taking skills to medical students.

Work done: A professional storyteller told a complex Scottish folktale to a group of second-year medical students. Initially, each student was asked to write an individual account of this narrative. Next, students were paired to co-write an account. Finally, the entire group prepared and presented an account.
Results: The first iteration produced full-sentence, extensive cataloguing of the narrative's details. In the second, student pairs edited details, producing shorter, compressed, point-form versions. In the third, composed collectively, the narrative's structure and focus differed radically from the original. The students re-contextualized the original non-medical folktale as a group therapy session involving its major characters.

Conclusions: The iterative process of listening to, recording, telling, and retelling a narrative, creates “drift” in structure and content from the original. In clinical settings, patient histories may be similarly altered through multiple retellings.

Take-home messages: Folktales represent a novel, useful tool for the teaching of medical history-taking skills. Medical students can better understand the “drift” of a story’s form and content as it occurs in the medical history-taking process, through this exercise of hearing, writing, and retelling a folktale.

3T/SC4 Aligning teaching of clinical skills to activity theory – a practical approach
Pamela Bradley*, Paul Bradley (Peninsula Medical School, The John Bull Building, Research Way, Plymouth, PL6 8BU, United Kingdom)

Background: Activity theory (AT) remained little known in the West until the fall of communism. AT has recently been subject to more investigation and holds promise for our understanding and development of teaching and learning (T&L). There has been widespread growth in clinical skills T&L recently, but there is limited evidence of its effectiveness. Indeed, some suggests that it does not meet the needs of students in the clinical environment.

Work done: Using AT we have re-examined our T&L of clinical skills. Isolated teaching will not always result in transfer of skills to clinical practice because of complex cultural and historical perspectives not addressed in the standard T&L program. Our approach has been to adopt a model of teaching that has its core approach embedded on the model of AT which acknowledges this complexity and embraces it in the design of T&L.

Conclusions: Existing models of T&L for clinical skills may not always facilitate transfer of skills to practice. AT provides the framework for developing new models more closely aligned to the reality of clinical practice.

Take-home messages: Basing T&L on theoretical models enables consideration of influences that facilitate or inhibit the transfer of skills to practice.

3T/SC5 ‘It’s been a Hard Day’s Night’ - A novel method of key skill training for final year medical and nursing students
R Swann*, D Richardson, J Wardle, J V Metcalf (Undergraduate Department, University Hospital of North Tees, Stockton on Tees, TS19 8PE, United Kingdom)

Background: Task prioritisation, awareness of limitations and communication with colleagues are difficult skills to teach/assess but are essential for healthcare students preparing to work in hospital.

Work done: Simulation of ‘first shift on call’ as doctor/preceptor nurse, using four ‘wards’ staffed by preceptor nurses with different tasks, with medical students rotating through each ‘ward’. Students received a handover, senior help was available if requested and students were paged with additional tasks. Insufficient time was allocated to complete all tasks, necessitating prioritisation and handover of incomplete jobs. Verbal and written feedback was obtained.

Results: 16 medical and 7 nursing students participated. Most medical and all nursing students reported improved understanding of future working roles. Medical students identified learning about task prioritisation, when to ask for senior help and importance of documentation. Nursing students reported increased confidence approaching doctors and increased sense of responsibility.

Conclusion: Ward simulation provided a safe environment for acquisition of essential skills for healthcare students, including understanding of roles, communication with colleagues, task prioritisation and recognising limitations. Further work is required to evaluate impact on working practice.

Take-home message: Essential skills training for modernised healthcare require innovative methods of learning which should simulate the working environment.

3T/SC6 The operational impact of a new training course for medical students in St John Ambulance
C. McQueen*, K McQueen (St. John Ambulance South and West Yorkshire (UK), Flat 3 23 Stainbeck Lane, Chapel Allerton, Leeds, LS7 3QR, United Kingdom)

Background: Recent audit data highlighted that healthcare professionals on duty with St John Ambulance (UK) experienced excessive workloads at major events. A training course for senior students in the Leeds Medical School Unit of St John Ambulance was designed and implemented to develop the role of ‘Student Doctor’ to support healthcare professionals at major events.

Work done: The course was delivered via weekly teaching sessions. Practical sessions and interactive tutorials were a component of the course. Assessment was via the completion of a portfolio and an OSCE examination. Patient report forms from a large outdoor music concert in Leeds in September 2006 were audited using Microsoft Access (Microsoft Corporation).

Conclusions: Results demonstrated that the medical students were adequately prepared for their new role, no errors being identified with regards to their actions. The workload of qualified healthcare professionals was reduced compared to previous duties (22.58%), allowing a more streamlined utilisation of their skills during the event.

Take-home messages: The results of this audit have shown that the course has been a success. Students have been provided with the correct amount of training, in an appropriate learning environment, to make a significant impact in patient care at major events.
3U/SC1 Perceptions on the Foundation Programme: a postal survey of foundation year trainees (F1s) and their educational supervisors

J Illing*, B Burford, G Bagnall, A Hesketh, J Spencer, I Colthart, J Wakeling, C Kergon, G Morrow, T van Zwanenberg (Postgraduate Institute for Medicine and Dentistry, 10-12 Flemington Place, Newcastle University, Newcastle upon Tyne, NE2 4AB, United Kingdom)

Background: This study reports on a study commissioned by the General Medical Council to help them evaluate the impact of The New Doctor, a guidance document for postgraduate medical training.

Work done: Aim: To examine perceptions of the Foundation Programme (a new programme of postgraduate training) by Foundation doctors (F1s) and their educational supervisors. Two questionnaires were devised and tested for validity and reliability and posted to 1,276 F1 trainees across the UK and 808 educational supervisors from Scotland, and from the London and Northern Deaneries.

Results: Questionnaires were returned by 678 trainees (55%) and 562 supervisors (72%). Trainers and supervisors agreed on many positive aspects of the Foundation Programme: that it was a suitable development from undergraduate competencies, clinical experience increased and on the importance of teamwork. Differences in opinion between trainees and supervisors were observed in areas such as perceptions of the prevalence of bullying, views on working hours and working beyond contracted hours, and the usefulness of the learning portfolio. Both groups expressed doubts about the effectiveness of Foundation Programme in identifying poorly-performing doctors.

Conclusion: Generally both trainees and supervisors reported that the Foundation Programme was working satisfactorily; however criticisms, in particular about the assessment tools, were noted.

3U/SC2 Do junior doctors practice to GMC standards?

Robert Palmer*, Robert Cragg, David Wall (Institute for Clinical Leadership, West Midlands Deanery, Birmingham Research Park, 97 Vincent Drive, Edgbaston, Birmingham, B15 2SQ, United Kingdom)

Background: The General Medical Council’s (GMC) publication ‘Duties of a Doctor’ sets high standards for professional practice for all doctors from qualification to retirement.

Work done: This study assesses the views of F2 trainees, qualified for just over a year, on how well other doctors have lived up to these standards. Positive and negative statements relating to each of the 14 standards were scored by 165 F2 doctors (100% return). Statements included ‘staying late with an ill patient despite being expected to leave on time’ and ‘being rude to a demanding patient because of pressures at work’. The scores recorded the frequency of observation of the described behaviour – daily, weekly, monthly, yearly or never.

Results: For 11 of the standards others failed to conform at least on a weekly or monthly basis (4 and 7 respectively, using the mode). Also for 11 standards the frequency of observation of a sub-optimal activity was greater for graduates of a UK medical school than for those who trained outside the UK, including Europe (p<0.05, Kruskal-Wallis). Results were not affected by the gender of the observer.

Conclusions: These findings indicate that doctors commonly fail to perform to the high standards expected by the GMC. This is worrying in terms of risk management and expectations of high quality of patient care. The reasons for this are multiple but may in part be due to pressure of work. These findings and possible solutions, including educational issues will be discussed.

3U/SC3 What do Foundation doctors, consultants and nurses in NHS Scotland think about the new Foundation Programmes?

Fiona French*, Judy Wakeling, Catriona Rooke, Gellisse Bagnall, Ken McHardy (NHS Education for Scotland, Forest Grove House, Foresterhill Road, Aberdeen, AB25 2ZP, United Kingdom)

Background: Foundation Programmes, introduced in Scotland in 2005, have reformed the first two years of postgraduate medical training by allowing medical graduates to develop generic skills while working in a wider range of specialties (6 x 4 months) prior to embarking on specialist training. Several recent research projects have identified some potential criticisms of the new programmes including dissatisfaction with formal teaching elements, unduly limited levels of responsibility, and some competence standards being too basic. Foundation doctors and consultants have also expressed shared concerns about reduced continuity of patient care resulting from reduced working hours.

Work to be done: We plan to interview one consultant, one nurse and two Foundation doctors in each of 30 wards/units throughout Scotland in May-July 2007. Units will be selected to represent different geographical locations, specialties and types of hospital. We hope to gain a better understanding of the perceived impact of Foundation Programmes on the wider healthcare team and on patient care. Interviews will be recorded, transcribed and analysed using NVIVO.

Results: A summary of themes identified at interview will be presented. This will provide important and useful information for those involved with postgraduate medical training in Scotland and beyond.

3U/SC4 Predictors of Foundation Training matching success

Charlotte Mahoney*, Rachel Isba, Lara Walford, Paul O’Neill, Gerard Byrne (University of Manchester, Undergraduate Office, 1st Floor ERC, Wythenshawe Hospital, Southmoor Road, Wythenshawe, Manchester, M23 9LT, United Kingdom)

Background: Applications for the new Foundation training scheme in the UK are paperless, without interview and multiple but may in part be due to pressure of work. These findings and possible solutions, including educational issues will be discussed.

Work done: An e-questionnaire was distributed to 58 matched and non-matched final year students from Manchester Medical School. Response rate was 27.5%. Responses were scored using three people including a lay person.
Results:

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</table>

Students successful in round one were less likely to have 'other interests’ than those who were not (p = 0.056).

Conclusions/take-home messages: Despite small sample numbers in this study, there were few trends that appeared to successfully predict early matching. Larger studies are needed to investigate the predictive value of each category. A study of this scale would be invaluable to validate this radical new change in medical career advancement.

3U/SC5 Evaluating clinical settings for Foundation programme teaching – a toolkit developed from trainees’ feedback

Subir Mukherjee* (KSS Deanery, 7, Bermondsey Street, London, SE1 2DD, United Kingdom)

Background: Traditional foundation programmes in UK are six x four months placement in various specialties for delivery of the programme. Identification of specialties is by consultation with Foundation programme directors, DME/Clinical Tutors and faculty members. This process is quality assured by the Deanery and the programme is approved by the PMETB (Postgraduate Medical Education Training and Board). Feedback from trainees about the programme may not always happen.

Work done: Appraisal meetings with trainees are now embedded in training programme in UK. A cohort of six foundation trainees appraisal feedback was used to produce a toolkit to rate and evaluate clinical settings appropriate for training. The toolkit had six domains and each was scored between 1-5. The domains included learning experience, support from nursing staff and other professions, intensity of workload, satisfaction outcomes, learning environment and protected teaching time.

Conclusions: Clinical settings with individual scores of 4/5 and a total programme score of above 70 (out of 90) in a year are deemed to be satisfactory.

Take-home messages: The toolkit is an easy way of assessing clinical settings appropriate to trainees' needs which was developed using trainee feedback. This is, therefore, better for purpose of quality assurance and developing training programmes fit for purpose.

3U/SC6 Foundation curriculum – fit for purpose?

J Maryosh*, L Smith, B Harden, P Lee, B V Prathibha (William Harvey Hospital, Kennington Road, Willesborough, Ashford, Kent, TN26 1HX, United Kingdom)

Background: Modernising medical careers has seen the introduction of a two year structured foundation programme. This has brought with it a new curriculum covering a wide range of clinical and generic topics. The aim is to produce doctors with sound clinical knowledge who can practice safely. We evaluated the impact of the curriculum in delivering this and also assessed the need for any change.

Work done: All foundation doctors undertook a surprise quiz (at least twice in 12 months, to evaluate the individual’s trend). This covered a wide range of clinical topics, all encountered in their daily practice. This was then scored and discussed.

Conclusions: This gave us invaluable insight into the knowledge base of the trainees and their ability to apply this in a clinical situation. It also helped us to evaluate our own teaching methods and tailor it to individual’s needs. The improvements noted at the second quiz were encouraging.

Take-home messages: It is vitally important to ensure that foundation doctors develop sound clinical knowledge and judgement to aid them practice safely and effectively. The curriculum should be designed and delivered to ensure this.
3V/SC2 Predicting Success: Does the MCCEE screen the successful internationally educated physician?

M Ian Bowmer*, Ilona Bartman, Timothy J Wood, David E Blackmore (Medical Council of Canada, 2283 St. Laurent Blvd., Ottawa, ON, K1G 5A2, Canada)

Background: In 2004, International Medical Graduates comprised 22% of Canada's medical workforce. This number is expected to rise because immigration restrictions have been relaxed. Unfortunately not all physician immigrants qualify to practice medicine. Therefore, physicians considering emigration to Canada must have a measure of their ability to obtain a license to practice medicine.

Work done: The Medical Council of Canada (MCC) administers the Evaluating Examination (MCCEE) as an offshore screening assessment. The MCC also administers the Qualifying Examination Part I and Part II, pre-requisites for medical licensure. Candidates who attempted the MCCEE between 1994 and 2006 were tracked through the licentiate process.

Conclusions: Of those who passed the MCCEE on their first attempt, 73% passed the Part I and of these 65% passed the Part II. When more than one attempt was required, success on the licensure examinations dropped. In addition, more than 30% of candidates fail to make it through the process. Additional descriptive statistics related to IMG performance will be presented.

Take-home message: Performance on the MCCEE predicts success on the licensing examinations. Therefore physician immigrants should be counseled to use the MCCEE to measure their ability to obtain a license.

3V/SC3 The academic performance of international medical students in Australia: campus and clinical settings

Lesleyanne Hawthorne*, Sue Elliott, Graeme Hawthorne (University of Melbourne, Faculty International Unit (Faculty of Medicine, Dentistry and Health Sciences), University of Melbourne, Parkville, Victoria, Australia, 3010, Australia)

Background: In the context of growing dependence on international student fees, Australian universities currently enrol 1,550 international medical students per year derived from a constantly diversifying range of source countries. A third of these students elect to study at the University of Melbourne.

Work done: This paper analyses international students’ academic achievement in pre-vocational medical courses compared to that of domestic students (Australian-born) and first generation migrants and refugees. In particular the paper examines: a. International medical student enrolments trends in Australia in the past 10 years (including source country trends); b. The range of student support models developed by medical faculties to minimise academic and cultural barriers to learning; c. Academic outcomes of international compared to all sources of domestic medical students at the University of Melbourne; and d. Any differences in student achievement by key variables, in both campus and clinical learning sites.

Conclusion: The study represents the most comprehensive analysis yet undertaken, based on 1,800 student cases. Highly significant findings are reported of relevance to academic pathways into medicine, English language ability, and site/type of medical study.

Take-home messages: In an age of international medical education, the study highlights important strategic issues of relevance to selection and concurrent support.

3V/SC4 Early evaluation of an intensive orientation program for International Medical Graduates entering Family Medicine residency training

Jodi McIlroy*, Maureen Gottesman, Catherine Smith, David Tannenbaum (International Medical Graduates-Ontario and University of Toronto, 80 Bloor St. W, Suite 902, Toronto, M5S 2V1, Canada)

Background: The Pre-Residency Program (PRP) is an innovative 4-month orientation course for International Medical Graduates (IMGs) prior to entry into Family Medicine residency training in Ontario, developed in response to needs identified by Residency Program Directors of Family Medicine. Phase I consists of 8 weeks of full-time large- and small-group, classroom-based learning encounters. Phase II consists of 8 weeks of clinic-based learning.

Work done: Program evaluation has incorporated a number of components, including learners’ reactions to individual sessions and their ratings of the extent to which the program has achieved its objectives. Additionally, retrospective-pre-post self evaluation methodology has been employed to estimate learner’s acquisition of knowledge and skills.

Results: Skills showing the greatest increases from week 0 (retrospective pre-self evaluations) to week 8 (end of phase 1 of the program) were self-reflection and self-evaluation, as well as communication skills, interpersonal skills and “readiness for role as a family medicine trainee”. Paired t-tests showed significant differences in all skills with the exception of procedural skills, which were not taught in Phase I.

Conclusions: The PRP is showing promising results at Levels 1 and 2 of the Kirkpatrick/Dixon framework. Impact, i.e., improved ability to succeed in Residency programs, will be assessed as trainees move into residency programs.
3W/SC1 The Tuning project: defining and gaining Europe-wide consensus on core learning outcomes for medical graduates

Michael T Ross*, Allan Cumming; Submitted on behalf of the MEDINE Tuning Task Force (details and membership online – http://www.bris.ac.uk/medine/). (The University of Edinburgh, The Medical Teaching Organisation, 49 Little France Crescent, Edinburgh, EH16 4SB, United Kingdom)

Background: The Tuning project represents the first systematic attempt to identify and gain consensus on the core competencies and learning outcomes for primary medical degrees across Europe. The project was undertaken by one of the five task-forces of the EU-funded MEDINE Thematic Network, as a step towards addressing the requirements of the Bologna Declaration.

The project used ‘Tuning Educational Structures in Europe’ project methodology, involving collaborative work by an international group of medical educationalists and a large online survey of experts in the field.

Work done: Quantitative and qualitative data were analysed from 1,302 respondents to the survey, representing medical academics, graduates, employers, students and professional associations from 22 EU and 14 non-EU countries. This paper will present an overview of the final results of the Tuning project, with some detail of the sub-group and qualitative analysis of the survey. The project has demonstrated that medical educators across Europe and beyond are very keen to work together sharing experiences and insights, and that it is possible to achieve Europe-wide consensus on core competencies and learning outcomes of primary medical degrees. The presentation will conclude by highlighting some of the implications of the Tuning project for undergraduate medical education in Europe.

3W/SC2 “European Core Curriculum – the students’ perspective”

International Federation of Medical Students’ Associations (IFMSA) represented by Jan Hilgers*, IFMSA Medical Education Director 2005-2006, University of Cologne, Germany and European Medical Student (International Federation of Medical Students’ Associations, Erpeler Str. 22, Cologne, 50939, Germany)

Aims: In this session we are presenting an outcome-based core curriculum from the perspective of Europe’s medical students, describe its development and discuss it in the context of the Bologna process in medicine.
3W/SC3 A look at the real curriculum: the students’ perspective
Vicki Langendyk* (University of Sydney, Sydney, Australia)

Background: Ten years for a new curriculum and it’s time for a reassessment! In 1997, the Faculty of Medicine, University of Sydney, changed to an integrated 4-year, graduate entry, problem-based Program. The documented curriculum is comprised of large amounts of data, available on-line. But it is not organized in a way that provides useful information to students or teachers about curriculum progression or destination. Review and renewal of curriculum is problematic under these circumstances. The solution proposed was a curricular framework based on learning outcomes.

Work done: Graduate outcomes were developed to express the attributes and capabilities required by students upon completion of the Program. Learning outcomes were needed to demonstrate how the curriculum was guiding students and teachers along the way. How do we get many, busy teachers responsible for small segments of a highly integrated curriculum, to write curricular learning outcomes? We don’t! We take this opportunity to document the students and teachers along the way. How do we get many, busy teachers responsible for small segments of a highly integrated curriculum, to write curricular learning outcomes? We don’t! We take this opportunity to document the current curriculum in terms of learning outcomes.

Conclusions: As a result of this project faculty teachers are engaging with the students’ perspective to examine the gap between teaching intentions and practice; and renew the curriculum accordingly.

3W/SC4 Identifying learning outcomes for the sciences underpinning medical practice
Karen Mattick (Peninsula Medical School, St. Luke’s Campus, Heavitree Road, Exeter, EX1 2LU, United Kingdom)

Background: There is growing pressure to reduce the amount of factual content within undergraduate medical programmes and medical schools are revisiting the process of identifying learning outcomes for the sciences underpinning medical practice, a time-consuming and subjective exercise. This activity traditionally involves expert consultation but experts tend to be specialised, whilst the aim of the undergraduate curriculum is to produce students with generic knowledge, skills and attitudes, and the potential for specialisation. In addition, there is currently no national or international focus to this activity or sharing of the outcomes. This aim of this presentation will be to describe the existing ‘best practice’ in identifying learning outcomes, the evidence base underpinning this and the relevant debates in the medical education literature.

Work to be done: In this presentation, I will describe a project, funded through the National Teaching Fellowship Scheme in the UK, that takes an innovative and challenging approach to identifying learning outcomes for the sciences underpinning medical practice.

Conclusion/take home message: Different approaches to identifying learning outcomes can inform what is covered in curricula and promote constructive debate.
3X/SC2 Does the reformed medical curriculum help students develop skills in clinical decision making? A comparison using a script concordance test in pediatrics
Julia Hoeffe*, Kai Sostmann, Sebastian Mueller, Gerhard Gaedicke (Klinik fuer Allgemeine Paediatrie, Charité Universitaetsmedizin Berlin, Mittelallee 8, Charité Campus Virchow, Augustenburger Platz 1, Berlin, 13353, Germany)
Background: Clinical thinking and clinical decision making are central competences of professional practice. Clinical cases with early patient contacts in a reformed medical curriculum are supposed to help students develop basic abilities in this field. The script concordance test (SCT) has been developed to assess examinees in their ability to efficiently use their knowledge in clinical context which often are ill defined and characterized by uncertainty and diagnostic and therapeutic processes along the course of the disease. Short vignettes with typical clinical situations are presented, followed by related test items. Examinees are asked to evaluate diagnostic, investigative, or therapeutic decisions when confronted with new informations. Scoring is based on comparison of examinees' results with the results of a panel of experts.
Work done: The aim of this study was to develop a script concordance test in pediatrics' undergraduate education and to compare results of students of our reformed and traditional medical track. An SCT with 60 items was designed following learning objectives of both tracks. 60 students (30 from the reformed, 30 from the traditional track) at the end of their 5th year participated in the test. Results were compared within the two groups. Students were provided with personal feedback on their results.

3X/SC3 Defining the correctness of a diagnosis: implications for scoring performance on patient cases
Steven L Kanter*, Teresa A Brosenitsch, James Staszewski (University of Pittsburgh School of Medicine, M-240 Scaife Hall, 3550 Terrace Street, Pittsburgh, PA, 15261, United States)
Background: Given information about a patient case and proposed diagnosis, one must determine correctness of that diagnosis to score simulation performance, assure patient safety, or design educational interventions. Determining correctness of proposed diagnoses, given a known diagnosis, is not a simple “yes-or-no” decision, but is fraught with complexity. For example, should a scorer award partial credit for a partially correct diagnosis leading to incorrect treatments?
Work done: 120 proposed diagnoses for a simulation of haemophilus influenza meningitis in an infant were available from prior work. A card-sorting task was used to develop “correctness-scales” for these diagnoses as represented in the minds of seven expert pediatricians.
Results: While similarities existed among experts, they created different numbers of categories, and dichotomized diagnoses into correct/incorrect groups based on different criteria. Experts considered, to varying degrees, the use of key words, presence of other diagnoses, degree of confidence expressed, and other criteria, thus generating different correctness-scales.
Conclusions: Experts demonstrated variability in scaling and semantic criteria for determining correctness. This has implications for scoring real or simulated tasks that involve making a diagnosis.
Take-home message: Determining correctness of proposed diagnoses, given a known diagnosis, is not a simple yes-or-no decision, but is fraught with complexity.

3X/SC4 A proposed method for using routinely collected clerkship student performance measures to examine for undesirable sources of variation in evaluation
Paul A Hemmer*, Louis Pangaro, Steven J Durning and Gerald Denton (USUHS-EDP, 4301 Jones Bridge Road, Bethesda, MD 20814, United States)
Work done: Evaluation methods used during the internal medicine clerkship at the Uniformed Services University include: pretest (100 MCQ exam); NBME exam; two faculty-developed examinations; teachers' descriptive evaluations. We used multivariate linear regression to determine which variables contributed to teachers' evaluations, to study whether students of one military service are evaluated differently depending on the clerkship site.
Results: Between 2001-2006, there were 794 students, 30.4% women. Student performance measures explained the variance in teachers' evaluations; no interaction between the student's branch of service and the service type of the clerkship site.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>% Variance explained (cumulative)</th>
<th>Total Teacher Points</th>
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</thead>
<tbody>
<tr>
<td>NBME</td>
<td>15.4</td>
<td>--</td>
</tr>
<tr>
<td>Pretest</td>
<td>16.1</td>
<td>.7 (.01)</td>
</tr>
<tr>
<td>Faculty exam interpreting tests</td>
<td>--</td>
<td>ns</td>
</tr>
<tr>
<td>Faculty exam of analytic ability</td>
<td>20.0</td>
<td>3.9 (.00)</td>
</tr>
<tr>
<td>Gender</td>
<td>--</td>
<td>ns</td>
</tr>
<tr>
<td>Time of Year (Second vs. first half)</td>
<td>21.1</td>
<td>1.1 (.001)</td>
</tr>
<tr>
<td>Student service branch</td>
<td>--</td>
<td>ns</td>
</tr>
<tr>
<td>Pretest*Site Interaction</td>
<td>--</td>
<td>ns</td>
</tr>
<tr>
<td>Service*site Interaction</td>
<td>--</td>
<td>ns</td>
</tr>
</tbody>
</table>

Conclusion: Examining military service as a source of undesirable variation illustrates a method to detect whether preferential treatment might be given to other categories of students.
3Y/SC1 The White Coat Ceremony in Japan
Keisuke Kouyama*, Gregory A Plottikoff, Shinichiro Sekiguchi, Kenji Watanabe, Takahiro Amano (Keio University Medical School, 35 Shinanomachi, Shinjuku-ku, Tokyo, 160-8582, Japan)
Background: Although the White Coat Ceremony (WCC) has been widely adopted by medical schools in North America, it is new to Japan and Asia. Our first WCC was held in Tokyo in April, 2006.

Work done: With support from the Gold Foundation, the ceremony was held at the transition point from classroom to clinical clerkships. In front of their families, the students received their first white coat from the Dean and heard of the ethical importance of wearing the coat. To assess the significance of this event, we performed student surveys shortly after the ceremony and again one year later.

Results: Both surveys indicated that the WCC was positively recognized by both the students and their families. Students appreciated the WCC because it (1) inspired and increased their motivation for the medical profession, (2) raised ethical awareness, and (3) recognized the transition from classroom to hospital. The follow-up survey suggested that supportive follow up 6 months later would reinforce these benefits.

Conclusion: The WCC was positively accepted and widely appreciated by Japanese medical students and their families.

Take-home message: The WCC enhances medical students’ consciousness of professionalism, not only in the U.S. but also in Japan.

3Y/SC2 The Keio White Coat Ceremony Oath: the “Shadow Curriculum” in action
Gregory A Plottikoff*, Keisuke Kouyama, Shinichiro Sekiguchi, Kenji Watanabe, Takahiro Amano (Keio University Medical School, 35 Shinanomachi, Shinjuku-ku, Tokyo, 160-8582, Japan)

Background: Oaths are frequently incorporated into White Coat and graduation ceremonies. Student production of an oath for these events represents an important learning opportunity outside of the formal curriculum.

Work done: In order to incorporate a statement of ethical beliefs and commitments into their White Coat Ceremony, the 88th class at Keio University Medical School was encouraged to create their own oath. The class divided into five sections, each headed by a graduate of the previous year’s course on Medical Professionalism. Leaders of the five groups represented a council to coordinate the work. Faculty provided support only. No academic credit was provided: all work was voluntary.

Results: Over eight months, this class worked as a whole to produce and ratify their own oath. The students, in their own words, clearly commit themselves to key ethical issues. This oath includes a clear commitment to respect and support each other as fellow students of medicine.

Take-home messages: Student oath production represents a “Shadow Curriculum” that reinforces key elements of professional development. Prepared, motivated and organized students can produce a clear and profound statement of ethical commitments even in the absence of academic credit or significant faculty input.

3Y/SC3 Learner profiling: a multi-purpose tool
Gominda Ponnamperuma*, Sisira Siribaddana, Dujeepa Samarasekara, Athula Sumathipala (Forum for Research and Development, Sri Lanka, 762/4B, Panumitiya Road, Battaramulla, Sri Lanka)

Background: Usefulness of learner profiling can be diverse. This is an account of using ‘learner profiling’: for evaluating ‘informed consent’ module of a multi-professional ethics course in Sri Lanka; and for developing an informed consent form checklist.

Work done: At the beginning of the module and at the end of each teaching session, participants listed items that they would include in an informed consent form for a research of their choice. Listed items were first categorised. These categories were then used to profile each participant. Participant-category was used as the unit of curriculum evaluation. By collating what participants listed, a generic list of informed consent form items was developed.

Results: The fifteen (35%) learner profiles created indicated that the course has increased participant knowledge by 81% absolutely, and by 20% relatively. Using participants’ input, a nineteen-category proto-type informed consent checklist was developed.

Conclusion: Apart from evaluating the module, study results confirmed current understanding of constructivist theory in cognitive psychology, context-dependency of learning, and task-based learning. Checklist compared well with the checklist developed by Secretariat Committee on Research Involving Human Subjects of WHO.

Take home messages: Learner profiling provides useful information for curriculum evaluation. The informed consent checklist can be useful for researchers recruiting volunteer-subjects.

3Y/SC4 Relationship between students’ formative assessment interest and academic success at Ankara University Faculty of Medicine
M F Atacanii*, M Ozün*, T Akrug*, O Palaglo*, S Kemahlit, J H Ayhan* (*Ankara University Faculty of Medicine, Medical Education and Informatics Department, Ankara, Universitesi Tip Fakultesi Dekanligi Morfoloji Verlesesi Sihhiye, 06100, Turkey)

Background: A web based formative assessment is a component of our student centered curriculum which helps students to take the initiative in diagnosing their learning needs. We aimed to evaluate the relationship between students’ participation in formative assessment and their scores of summative assessment.

Work done: Each student (285 Term I, 308 Term II, 245 Term III) has summative assessment scores including OSPE, OSCE, MCQ tests, EBM exams and PBL assessment by tutors at the end of 2006–2007 academic half year. Several web based true/false exams were administered (6 for Term I, 8 for Term II–III, each). According to participation rates students are grouped into four categories (Group A = 0-24%, Group B = 25-49%, Group C = 50-75% and Group D = 76-100%).
Results: Statistical analysis showed that; in Term I, group C and D students were more successful than group A students, in all type of scores. Also students were more successful in group C than A, and in group D than B in terms II and III, respectively.

Conclusions: The participation rate of formative tests reflects students' success.

Take-home messages: Students’ interest in evaluation of learning outcomes should be encouraged, as this might be stimulating students for being self-directed learners.

3Y/SC5 Young doctors’ experience of mistreatment as undergraduates; Sri Lankan Experience

M N Chandradilake*, H G S H Dayaratne, K Dissanayake, S Padigamage, N R de Silva (Faculty of Medicine, University of Kelaniya, P.O.Box 6, Thalagolla Road, Ragama, Sri Lanka, 0000, Sri Lanka)

Background: Mistreatment may be defined as physical or psychological abuse, financial exploitation or violation of rights. This study was conducted to determine the extent and nature of mistreatment experienced by medical undergraduates in Sri Lanka.


Results: The questionnaires were completed by 103 young doctors selected randomly. They represented all six medical schools in Sri Lanka. Male to female ratio was almost 1:1. A total of twelve respondents (11.7%, 7 males) reported mistreated as medical students. The form of mistreatment experienced included humiliation (n=7); physical punishment (n=4); being asked for sexual favours (n=2) or unwanted sexual advances (n=2). Mistreatment was due to gender (n=6); ethnicity (n=1); religion (n=3); socioeconomic level (n=5); hometown (n=4); school (n=4) or physical appearance (n=4). The proportion reporting mistreatment was varied among the six medical schools. Most (9/12, 75%) respondents had not reported their mistreatment because of fear of reprisal (4/9) or because they did not think it important enough (2/9).

Conclusions: A significant proportion of young doctors experience mistreatment as undergraduates but many do not report it due to fear of reprisals.

3Y/SC6 Medical students’ views on identification and rehabilitation of unprofessional peers

M van Rooyen, M I W van Huyssteen* (University of Pretoria, Faculty of Health Sciences, Department of Family Medicine, PO Box 667, Pretoria, 0001, South Africa)

Background: Senior medical students at the University of Pretoria were challenged to develop and describe a model for the rehabilitation of identified unprofessional peers.

Work done: Qualitative content analysis was used to explore the students’ perceptions. Investigator triangulation was done to validate the identified themes. A model was developed.

Results: 1) Prevention of unprofessional conduct: create a student friendly environment, mentors, a culture of reflection; (2) Early identification of the unprofessional student: develop a quality control instrument -assessment by self, peers, faculty and patients; management - atmosphere of respect and empathy; validation of claims; informed by peer; opportunity for student rehabilitation; (3) Referral to peer review committee: students with values of trust and confidentiality; (4) Referral to senior committee: recommend rehabilitation program; (5) Rehabilitation program: positive attitudes; treat the problem with different modalities; monitor progress; (6) Involvement of the Dean: failed rehabilitation; (7) Disciplinary hearing: serious consequences.

Conclusion: Confidential, continuous assessment, in different settings, by different people, was stressed. Rehabilitation in real life situations with experiential learning was preferred.

Take-home message: Students want to take some responsibility in identifying and rehabilitating unprofessional peers.

Workshop 3Z Leadership in medicine: what is it and how can it be developed?

Richard Hays (Keele University, Staffordshire, ST5 5BG, United Kingdom)

Background: A recent hot topic in medical education is concern that the medical profession appears less interested in health care management and therefore may be abdicating interest in leading the necessary reforms of the health care and education system that will best serve the health care needs of the population. This generates questions such as: What is leadership? Does it differ from management? Should the medical profession be leaders? What kind of leadership is needed? Can leadership be developed through health professional education? If so, how can leadership be developed? How does leadership fit in with inter-professional education?

Intended outcomes: Improved understanding of the nature of leadership and how it might fit into a curriculum, based on exploration of these questions and sharing of experiences. Ideally, a generic approach, including content and process, may result.

Structure: Small group exploration of definitions, different perspectives, and options for educational content and process for developing leadership in health care.

Intended audience: Educators and students in any of the health professions.

Level of workshop: Intermediate.
Workshop 3AA  Teaching medical students how to work with an interpreter

Hilde Grimstad*, (Department of Public Health and General Practice, Faculty of Medicine, NTNU, Trondheim, Norway), Patrick Kermit (Department of Social Work and Health Science, Faculty of Social Sciences and Technology Management, NTNU, Trondheim, Norway), Odd Morten Mjøen (Department of Sign Language and Interpreter Education, Faculty of Teacher and Interpreter Education, Sør-Trøndelag University College, Trondheim, Norway), Sally Quilligan (Clinical and Communication Skills Office, School of Clinical Medicine, University of Cambridge, Cambridge, UK), Berit Rostad (Department of Public Health and General Practice, Faculty of Medicine, NTNU, Trondheim, Norway)

Background: Medical interviews between doctors and patients who do not share a language present linguistic obstacles and communication challenges. Increased migration requires medical students to learn additional communication skills to overcome language barriers including working effectively with an interpreter. In order to cooperate effectively with an interpreter medical students need specific knowledge of the interpreter’s modus operandi. In addition, students need to reflect on possibilities and limitations occurring while cooperating with an interpreter, and thus secure the patient’s outcome in the interview.

Intended outcomes: To share ideas about how and what to teach about medical interpreting including:
- Understanding legal, ethical, practical and cultural perspectives
- Defining the responsibilities and parameters of the roles

Structure: Groups will rotate between interactive and experiential-based stations that illustrate important issues in training interpreters, use of interpreters and roles of the participants in the interpreted medical interview. The experiences will be summarised in a discussion at the end of the workshop where the important issues of using interpreter will be presented.

Who should attend: Those involved in training in use of interpreters and teachers in communication skills.
Level: Beginners/intermediate.

Workshop 3BB  E-learning in the medical curriculum – strategies and methods

Per Brodal, Per Grottum, Jan B Guttulsrud, Ove E Hatlevik (University of Oslo, Section of Medical Informatics, PO Box 1080, 0116 Oslo, Norway)

Structure and content: This workshop will be a case-based discussion of in-house development of e-learning computer programs in a medical school. We shall address four topics and try to extract some important, general principles from the examples and the experience we have had at the University of Oslo Medical School. Here e-learning is used in conjunction with, and not as a replacement for other types of teaching. A 15 minutes’ introduction will be given to each topic followed by discussion between the participants in the workshop. The topics are: (1) What should be taught by e-learning? The match between learning requirements and the benefits of information technology; (2) How can the development and implementation of e-learning be organised? The right person in the right place: teacher, student, computer technologist, pedagogical expert, faculty leaders; (3) Which development tools should be used? The trade-off between simplicity, maintainability, standardisation and feature richness, optimal design; (4) How can learning outcome be optimised? Securing reflection and active knowledge construction in the students.

Intended audience: The workshop is intended for beginners who plan to develop and use e-learning programs in the medical curriculum.

Workshop 3DD  Preparing students to become clinical educators

Linnea S Hauge, Larry Gruppen (University of Michigan, Department of Medical Education, 1500 E. Medical Center Drive - 21280 TC, Ann Arbor, MI, 4810, United States)

Background: Physicians-in-training have responsibilities for teaching students, peers, patients, and staff. Given the expectations for teaching, there is a need to prepare students for the teaching role they will assume in their postgraduate training. A teaching elective course would provide students with knowledge and skills about teaching in the clinical environment, principles of learning, teaching strategies, curriculum design, feedback, evaluation, and characteristics of effective presentations. The purpose of this workshop is to describe the content and methods of a student teaching elective based upon our experience with this course.

Intended outcomes: Upon completion of this workshop, participants will be able to: (1) describe the content of a teaching course for students; (2) outline strategies and course activities for a teaching elective, and (3) design a course outline for a teaching elective for students.

Structure: The workshop will be interactive, and will include individual and small group exercises. Teaching elective course materials will be disseminated and participants will have the opportunity to identify strategies for implementing a teaching elective.

Intended audience: This workshop is intended for clinician educators and educators interested in designing courses and experiences to enhance medical students’ teaching skills. Level of workshop: intermediate-advanced.
Teaching medical communication skills with DiViDU: creating a digital video dossier for reflection and feedback

R L Hulsman1, M Fabriek1, A B Harmsen1, N P de Graaf1 2 (1Academic Medical Center, Dept. Medical Psychology, P.O.Box 22660, Amsterdam, 1100 DD, Netherlands; 2Utrecht University)

Background: In 2005-2006 we developed a new communication skills program for second year undergraduate students, featuring: use of simulated patients; self-directed learning; peer feedback; use of ICT; portfolio development. DiViDU is a web-based on-line data-base for videos, assignments, reflections, and feedback. Students make digital video recordings of simulated patient-encounters using a webcam and Windows Movie Maker and upload these on a streaming media server. With DiViDU, students can review these video recordings, analyze their own communication behavior, connect theoretical concepts to their own performance, think of alternative behaviors, and get peer-feedback. Self-reflection and peer-feedback are effective methods for skills teaching. Students obtain personal feedback on self indicated critical moments in the interaction.

Structure: The design of DiViDU and the training program is presented, followed by some results of how second year medical students evaluate this training method. The use of DiViDU is presented both from a teacher's and a student's perspective. Teachers can easily add and edit new assignments. Students upload their videos, mark and comment on critical moments in their conversation.

Intended audience: Course designers and teachers of communication skills, those favoring the use of ICT in medical education.

Level of workshop: beginners/intermediate.
Symposium

4A  AMEE updates

Chairpersons: Athol Kent (University of Cape Town, South Africa), Larry Gruppen (University of Michigan, USA)
Presenters: Lambert Schuwirth (University of Maastricht, Netherlands) and David Cook (Mayo Clinic, Rochester, United States)

The Update talks are aimed at those delegates who are not expert in the fields of Clinical assessment, E-learning and Portfolios, but wish to learn what is current about these topics. The audience will be taken through the important aspects of each and be given a chance to ask general questions. A two page electronic summary of each talk will be made available. Please come and learn!

4A1  Clinical assessment – feedback matters
Lambert Schuwirth (University of Maastricht, Netherlands)

After the era of standardised testing there is currently a renewed interest in practice-based assessment. Instruments such as mini-CEX and 360° feedback have become popular, but these new assessment methods also have their strengths and weaknesses. These newer assessment approaches differ from the ones we are used to. The most important difference is the change in purpose. Standard testing is aimed at assessing the outcome of teaching and learning, whereas practice-based assessment aims more to steer learning and coaching. For this training to occur, it is essential that practice-based assessment provides feedback to learners to help them optimise their learning activities. This presentation will review practice-based assessment and the way to provide feedback in the assessment.

4A2  E-learning
David A Cook (Mayo Clinic, Rochester, USA)

This Update will provide those new to e-learning with an introduction to this increasingly prevalent method of instruction. Drawing on both practical experience and empirical evidence, we will review the advantages and disadvantages of e-learning, discuss situations in which e-learning may be useful and times when other techniques might be preferable, and examine “what works” for effective e-learning. We will conclude with an overview of current and future directions for research in e-learning. Although we will only scratch the surface on each topic, attendees will come away with a firm foundation in e-learning fundamentals. Specific suggestions for further study will be provided.

4A3  Portfolios
Details to follow.

Symposium

4B  State of implementation of the Bologna two-cycle format in European medical education

Panel: Madalena Patrício (University of Lisbon Faculty of Medicine, Portugal) (co-chair), Olle ten Cate (University Medical Center Utrecht, The Netherlands) (co-chair), Janke Cohen-Schotanus (University of Groningen, The Netherlands), Elisabeth van Gessel (University of Geneva, Switzerland)

Following sessions held at AMEE 2005, the aim is to present the state of implementation of the two-cycle system in medical education in all 45 countries that signed the Bologna agreement. We aim to present the results of a brief survey in these countries. Invited speakers from countries which already adopted the system will report on major challenges, strengths and weaknesses, and lessons for the future. There will be plenty of opportunity for discussion.

Symposium

4C  So, what can qualitative approaches do for me (or my research)?

Panel: Ayelet Kuper, Nancy McNaughton (Chairperson), Tina Martimianakis, Mathieu Albert, Brian Hodges (Wilson Centre for Research in Education, University of Toronto, Canada)

There has been a call for broadening our understanding of how qualitative methods can be used effectively in medical education research. This symposium will explore the diverse theoretical and methodological qualitative traditions from which medical education researchers can draw to complement their research programs. We will introduce participants to various approaches from the social sciences and the humanities and discuss possible applications within the domain of health professional education. Presentations will provide an overview of the theoretical assumptions of these approaches using actual research examples and explore the range of research questions to which each approach can be applied.
4D/SC1 Lecture capture as a learning resource for students and instructors: lessons learned
Kalyani Premkumar*, Cyril Coupal (College of Medicine University of Saskatchewan, Faculty of Community Health & Epidemiology, Room B103 Health Sciences Building, 107 Wiggins Road, Saskatoon Saskatchewan, S7N 5E5, Canada)

Background: In fall 2006, a new Form and Function of the Human Body Course was offered to first year medical and dental students. This course is an amalgamation of Physiology, Anatomy, Cell Biology and Immunology courses. The rationale for amalgamation was to shift emphasis from individual subjects, to vertical and horizontal integration, and learning in context.

Work done: An innovative resource used in this course was the Apreso Classroom Software (ACS) for lecture capture. Without manual intervention, ACS captures instructor presentation, and projected visuals, and instantly creates a rich media version for on-demand student review. The presentations were made accessible to registered students. One advantage of ACS is: it can be started and stopped based on a pre-determined schedule eliminating the need for camera operators. It does not require faculty to learn new technology. Focus groups, interviews and surveys were used to evaluate the resource.

Conclusion: Students found it to be a valuable supplement and used this resource to review concepts and study before examinations. There was no significant drop in lecture attendance. Instructors used them to improve presentations and review information they addressed.

Take-home message: In this era of e-learning, lecture capture is a useful resource that can be used to supplement face-to-face classes.

4D/SC2 Podcasting – A student’s perspective
Silvia Jansa†, Nick Short (The Royal Veterinary College, Royal College Street, London, NW1 0TU, United Kingdom)

Work done: At the Royal Veterinary College, 60 first year BSc Veterinary Science students have started recording their own podcast lectures. The students record each lecture using a digital voice recorder and then edit the audio files on their own computer. The files are uploaded by the students onto the College VLE. In the first 4 months of the course the students have now recorded and uploaded over 60 lectures which have been accessed by the majority of the year group.

Results: There has been some initial reluctance on the part of the academics to having their lectures recorded and published by the students. However, most staff have come to appreciate that this approach is of great value to dyslexic students as well as those who cannot make the lectures due to illness. On the student’s part, the initiative has proved to be extremely popular. They use the lectures both as a review tool after a lecture and as a revision resource. Most students listen to the lectures on their own PC or laptop but some have also started to listen to them on their MP3 players. This presentation will outline the valuable role that students can have in adapting new web technologies to support their own learning.

4D/SC3 Open educational resources in health sciences co-development
Susan Albright*, Mary Y Lee, Jeffrey Griffiths, Daniel Walker, Cora Ho, Harris Berman (Tufts University School of Medicine, 145 Harrison Avenue, Boston, MA, 02111, United States)

Background: Tufts University has strived both to share open educational resources (content and tools) globally in the health sciences and to remove barriers to health sciences curriculum co-development.

Work done: (1) Capacity building in infrastructure and e-learning applications such as providing the Tufts University Sciences Knowledgebase (TUSK) to schools in India, Africa, and the United States that allows them to create, deliver, and manage their own curricula including content and administration. (2) Engaging in curriculum co-development with the global community of faculty and students such as our collaborations in public health curricula in Uganda, Kenya, Tanzania, and India. (3) Collaborating with organizations such as MedBiquitous and other universities to develop standards for educational tools such as an open-source virtual patient case player that will allow individuals and schools to develop and share case content and the accompanying androgy. (4) Providing open content such as through Tufts OpenCourseWare in the health sciences (medical, dental, veterinary and nutrition sciences) and SPIRAL (an online patient education resource in seven Asian languages).

Conclusion: Tufts is eager to share our experiences, open resources, and methodologies in these areas and to explore additional collaborations that further the development of open educational resources in health sciences.

4D/SC4 Shaping your curriculum with cutting-edge technology
Michael Karr*, James L Fishback*, Robert M Klein* (The University of Kansas Medical Center, 3901 Rainbow Blvd., Mailstop 1049, Kansas City, KS, 66103, United States)

Background: The University of Kansas School of Medicine has developed a new technology-based undergraduate curriculum using virtual microscopy, Tablet PCs, video podcasts, electronic textbooks, and computer-based testing.

Work done: The University of Kansas School of Medicine recently began a new integrated undergraduate medical curriculum that was developed with several new technologies at its heart. The basic science medical school curriculum utilizes the ANGEL Learning Management Suite, Aperio Technology virtual microscopy, Tablet PCs, lecture podcasts, electronic textbooks from Lippincott-Williams-Wilkins, Elsevier, and McGraw Hill, and computer-based testing. We have adopted an integrated, module-based curriculum that uses an organ system approach leading to a final Integration of Concepts module.

Conclusions: One of the big winners in our implementation was the HP Tablet PC. We encountered few technical problems and student satisfaction has been high. The Aperio virtual microscopy system has also been very successful, though trying to access large images with wireless networking has proven problematic. Such a technology-intensive curriculum requires large amounts of time and resources to implement effectively.

Take-home messages: Curricular change is a massive undertaking that requires large amount of time and commitment to implement effectively.
4D/SC5 The use of wikis during courses at the University Medical Center Groningen
Jetse Goris (University Medical Center Groningen, Hanzeplein 1, 9700RB, Netherlands)
Background: In the last two years there has been a shift from consuming to producing information on the internet. A tool that enables this new way of internet use is a Wiki. Wikis are websites that can be edited by anyone who has access to them.
Work done: At the University Medical Center Groningen (the Netherlands) Wikis were introduced successfully in the educational programme. A Wiki enables students to easily share knowledge with others and learn from each other. It was helpful in formulating topics of interest and questions prior to the meetings and reflecting on things learned. The Wiki enables teachers to provide students with course-information. The Wiki provides a central information point which, due to its web-based design, is accessible wherever and whenever people want to. Users can easily be notified about changes.
Conclusions: Wikis are a user-friendly way to engage students and give them an active role in their own education. Teachers are challenged to adapt their lessons to the actual needs of the students.
Take-home messages: Wikis offer powerful opportunities to share information and collaborate in medical education. They are user friendly and enhance active student learning.

4D/SC6 Is a ‘free’ VLE (Moodle) adequate for a medical school?
Trupti Bakrania, Narain Ramlachumum*, Arnold Somasunderam, Adele Atkinson, Terry Poulton (St George’s University of London, e-Learning Unit, Centre for Medical and Healthcare Education, London, SW17 0RE, United Kingdom)
Background: In choosing a VLE in 2005, St. George’s University of London had to consider whether a product ‘for free’, Moodle, could provide the range of facilities and support that a Higher Education institution would expect of large corporate applications such as Blackboard and WebCT. It was accepted that penetration of open source VLEs had been high in FE and secondary education, where there was very limited funding for a VLE, but institutional management was sceptical of a free product: was it flexible, robust, ‘fit for purpose’?
Work done: St George’s have customised Moodle giving it a ‘look and feel’ more in keeping with corporate identity and better structured to meet teaching requirements. User friendly course templates were created that link dynamically to the institution’s resource database. A SCORM player was developed to ‘play’ content-packaged resources. Third party applications such as external portfolios and Horizon Wimba communication tools have been easily integrated to the tutor’s choice of tools.
Conclusions: Student feedback has been positive, and complementary to the intentions to develop more interactive resources such as quizzes, discussion boards, and other activities available within Moodle. Moodle has proved to be easily customisable, flexible, student-centred, and highly robust.

Short Communications
4E The curriculum – community-based medical education

4E/SC1 Why teach? An exploration of community based tutors’ attitudes to teaching and learning
P Burns*, F Bradshaw, N Harrington, R Holliday, M James, H Rawsthorne, J Smyth (University of Manchester, Rusholme Academic Unit, Robert Darbishire Practice, University of Manchester, Walmer Street, Rusholme, Manchester, M14 5NP, United Kingdom)
Background: Medical education has shifted in the UK to reflect delivery of healthcare and modern methods of adult learning and teaching as reflected in worldwide moves to utilise community resources. Many tutors were students within traditional curricula. Is there a mismatch between tutors’ models of teaching and how students learn?
Work done: The researchers investigated attitudes of community-based teachers to teaching and training in a qualitative study using thematically analysed semi-structured interviews of 26 general practitioners, practice managers and nurses from practices with differing levels of involvement (none to extensive).
Results: There is disparity between the attitudes of community-based teachers to teaching, and current methods of education resulting in lack of confidence to teach based on an assumption that a traditional ‘master’ is required rather than a facilitator of learning within a new apprenticeship model. Conclusions: Training of potential and existing tutors needs to address these issues. Recruitment and training of primary care based teachers must address the attitudinal changes required to move the tutor on from a traditional didactic model to one that uses a student centred, self-directed approach. Self-identification of community physicians as teachers may be rooted in traditional models of teaching in past curricula.

4E/SC2 Community-based learning in medical education
Zvonko Sosić*, Luka Vondina, Gordana Pavlekovic (University of Zagreb Medical School, Andrija Stampar School of Public Health, Rockefelleroova 4, Zagreb 10000, Croatia)
Background: While there is still an expectation that students learn important facts, there is growing emphasis on application of facts and relating facts to life outside the school.
Work done: The Health in Community is a six-day required field practice for medical students. Schedules include one or two clinical sessions per week in family practice. Two half days per week are devoted to didactic and interactive seminars, preparing students for the health educational session in elementary school. Another seminar series addresses common healthcare problems particularly in preventive medicine. Special curricular experiences provide students with exposure to home care and medical practice issues. Students are also assigned work in community settings followed by home visiting nurse. Learning is facilitated by the local health centre and institute of public health, underscoring the School of Medicine’s commitment to graduating students who are well versed in how socioeconomic influences health. Community-based learning requires time, effort, and expense. Quantitative and qualitative curriculum evaluation methods, including a questionnaire were used.
Managing change and continuity in community-based medical education

Tangerine Holt*, John Goodall, Ben Canny, Philip Mendes, Pamela Freeman (Monash University, Centre for Medical and Health Sciences Education, Building 15, Monash, VIC 3800, Australia)

Background: The purpose of this presentation is to showcase the implementation of medical education curriculum which is aimed at integrating teaching and learning in the community. A premise that community based medical education is based on is the envisaged positive changes in attitudes, knowledge and behaviours of future medical practitioners. However, managing a program’s continued development and ensuring its continuity as an educational innovation requires commitment and institutional support. So what do we know about program planning, development and sustainability of educational innovations in community based medical education?

Work done: The use of community based teaching and learning principles which focuses on assessment, learning, critical analysis, practice, application and evaluation as part of the Community Partnerships Program in Medical Education will be presented. Since 2003 medical students have completed the CPP program as part their core curricula at Monash University. A case study of key strategies implemented to ensure continuity and manage change in community engagement will focus on service learning, community-based participatory research, teaching and learning in relation to specific objectives.

Outcomes: Key educational outcomes and strategies which relate to the following will be presented: (1) benefits and challenges encountered in implementation and sustainability of CBME; (2) development of specific community projects to address CBME objectives; (3) organization and structure of teaching and learning, methods, relationships of key stakeholders, and learning/teaching environment to ensure continuity while addressing change.

Take-home message: CBME challenges both medical students and community-based educators to move beyond traditional discipline-bound educational models to future-oriented interprofessional teaching/learning models.

Tailored, community oriented, problem based curriculum at the College of Medicine/ King Fahad, Medical City

Akef S Obeidat*, Abdulmohsen H Al Zabalani, Aiman Zaher, Ali F Al Amri, Elsayed A Elzayat, Faical I Mohammed, Fouad M Badr, Ibrahim Al-Hoqail, M Kheder Al-Zahrani and Mohammed O Al-Rukban (Faculty of Medicine, King Fahad Medical City, P.O.Box, Riyadh, Saudi Arabia, 11525, Saudi Arabia)

Background: This is a community-orientated medical school, which has replaced the typical discipline-based curriculum with a longitudinal, patient-centered one. The curriculum is tailored to meet the needs of the local community, and medical students at high school entry level. It is a hybrid form of the pure PBL system and the traditional system aiming at overcoming the major drawbacks of these two educational systems. It is a fully integrated program offering a mixture of problem based small group learning with appropriate lecture and laboratory teaching; the emphasis throughout is on self-directed learning with PBL being the organizing feature of each week.

Work done: Our curriculum utilizes an integrated and spiral approach to subject coverage. This approach reinforces key topics by revisiting them in different context with increasing sophistication throughout the years. We also have systematically introduced the importance of core competencies as central to a medical student’s learning. We believe that the hidden curriculum is all about the professional development of students and that it is the drive that binds the bricks of formal learning.

Take-home message: Openness to lifelong learning, the ability to communicate and empathize with others and an understanding of the need for reflective practice are all important goals of our curriculum.

Community responsiveness in the new curriculum of Shahid Beheshti Medical School

F Falah *, G Eslami, A Kamyahi, H Zand (Shahid Beheshti Medical School, Evin, Chamran Highway,Tehran, 19395-4719, Iran)

Background: The new program of Shahid Beheshti Medical school has more emphasize on community based education which had been limited to a total of 136 hours class work and 2 month field work in Iranian traditional curriculum.

Work done: (1) Two courses of “early patient contact (EPC)” introduce the professional roles of the physician to the students and form the first contact of the student with the clinical setting in the Basic Science phase. (2) Core contents of organ system courses were specified in interdisciplinary committees by expert opinion to be as relevant as possible to GPs’ future tasks. (3) A particular attention to concepts of preventive medicine and health promotion in all basic and clinical science courses. (4) Authenticating the educational setting to real practice setting through: a) emphasis on clinical training in general clinics and wards; b) adding a six month period of training in emergency departments and generalists’ offices. (5) Developing health risk assessment skills through 3 community exposure courses. (6) Community leadership training for the student through courses of population management and practice management.

Conclusion: Community based education can be operationalized with a longitudinal program in a UME program.

Take-home message: Putting more emphasize on community-based education through various interventions in a UME program is possible.
4F/SC1 Challenges for tutors in problem-based learning
Gudrun Edgren* and Jakob Donné (Lund University, Faculty of Medicine, Sweden, P.O. Box 157, Lund, SE-221 00, Sweden)

Background: The first years of the medical programme at Lund University are problem-based. In a previous report (AMEE 2005) we found that students perceived difficulties when tutors took a passive role. They also found it difficult when tutors were not knowledgeable within the field of the course. The faculty workshop for tutors had stressed the importance of not lecturing, and that the tutor did not have to be an expert in the field. To develop the workshop we also wanted to find out which challenges tutors in our school perceive with the role of the tutor.

Work done: Tutors, with limited experience, were interviewed using a semi-structured protocol. The tutors found it difficult to know how active they should be. The most common difficulty with group dynamics was students who did not participate. All tutors stressed the importance for the tutor of knowing the contents of the course and being well prepared.

Conclusions: Tutors and students agree that tutors need to know the course contents. The presumed passive role of the tutor can be a problem.

Take-home message: Perceptions of tutors and students of the role of the PBL tutor are important contributions to faculty development.

4F/SC2 The effects of verbalizing thoughts in PBL discussions
F M van Blankenstein*, D H J M Dolmans, C P M van der Vleuten, H G Schmidt (Maastricht University, Universiteitssingel 60, 6229ER, Netherlands)

Background: Problem-based learning (PBL) uses problems and group discussions to activate the student's prior knowledge. Although research has shown that PBL group discussions enhance memory performance of subsequently learned texts, it remains unclear which factors contribute to this effect. The reported experiment aims to identify a specific source to the activation of prior knowledge: verbalization of thoughts. Activating prior knowledge by verbalizing thoughts is expected to facilitate subsequent learning and, consequently, learning outcomes.

Work done: Participants (N = 75) all received a similar training in principles of physics, in order to homogenize their prior knowledge. Subsequently, they were assigned to one of three experimental conditions. The experimental group observed a visually recorded PBL group discussion about radar systems, and participated by verbally activating their prior knowledge from the training. The first control group watched the same discussion but did not participate. The second control group also remained silent and watched an irrelevant discussion. Subsequently, subjects from all three groups read the same text on radar systems. It was hypothesized that the experimental group outperformed both control groups on subsequent learning outcomes, as established in cued recall.

Results: Data collection is in progress. Results will provide more insights in specific contributors to the PBL-process.

4F/SC3 Evaluation of PBL curriculum at Gadjah Mada University School of Medicine for the period of 2002-2007
Titi Savitri Prihatiningsih* (Department of Medical Education Gadjah Mada University School of Medicine, Radiopoetro Building, 6th floor, Farmako Street, Yogyakarta, 55281, Indonesia)

Background: Gadjah Mada University School of Medicine has implemented problem-based learning since 1985. In 2002, the whole curriculum has been transformed into PBL learning mode using block structure.

Work done: The framework suggested by Coles (1985) comprising of three components is used. To evaluate the curriculum on paper, the congruency between curriculum objectives, learning outcome and the contents included in each block is assessed using qualitative method. To evaluate the curriculum in action, questionnaires are distributed to students and tutors to examine whether learning process endorsed in PBL strategy, i.e. activation of prior knowledge and elaboration, has occurred during the execution of seven-jump method. In addition to this, focused group discussion using qualitative method is conducted to triangulate the results of questionnaires. To evaluate the curriculum being assessed, the examination papers are assessed to check whether the examinations really assessed the achievements of the learning outcome.

Conclusion: The result of evaluating curriculum on paper is that there is little congruency between curriculum objectives, learning outcomes and the contents in each block. The result of evaluating curriculum in action is that the tutorial discussions are not functioning. The result of evaluating curriculum being assessed are that the exam questions do not match with the learning outcome.

Take-home message: When installing a new curriculum, the process of translating the curriculum objectives and learning outcomes into a study guide, students' learning experiences as well as students' assessment should be carefully controlled and monitored.

4F/SC4 Institutional marginalisation of learning on cultural diversity: a qualitative study of students' experiences in two contrasting medical school environments
Jane Roberts1, Tom Sanders2, Karen Mann1, Val Wass1* (1University of Sunderland, United Kingdom; 2University of Manchester, United Kingdom; 3Dalhousie University, Canada)

Background: Worldwide effective medical student learning on cultural diversity remains difficult yet reasons for this are unclear. The aim of the study was to explore the impact of two contrasting learning environments on second year students' cultural awareness. Setting: Two UK medical schools with different curricula. School A: problem based learning using theoretical cases without patient contact. School B: systems based course with experiential community learning. Participants: 49 second year medical students; mean age 20.7 years, 41% ethnic minority.

Work done: Seven focus groups explored learning on cultural awareness related to the curriculum, patients and peers. Qualitative analysis used constant comparative grounded theory and was externally validated by an independent researcher.
Results: Four common themes emerged: (i) institutional ambivalence and marginalization of the subject, (ii) strategic low priority learning driven by lack of assessment, (iii) informal learning in the workplace, (iv) influences of peer group culture. Specific themes were School A: (v) significant interpersonal dynamics from PBL; (vi) perceived stereotyping of ethnic groups through PBL; and School B: (vii) the positive value of early patient contact; (viii) fragmented “ad hoc” experiential learning on culture.

Conclusion: At both institutions students valued cultural awareness learning highly but felt it was marginalised within the formal curriculum. They appeared to learn more from their social environment.

4F/SC5 What does effective scribing bring to PBL tutorials?

Samy A Azer (Universiti Teknologi Mara, Faculty of Medicine, Selangor Darul Ehsan, 40450 Shah Alam, Malaysia)

Background: One of the roles of students in PBL tutorials is being a scribe on the whiteboard. The aims of this study: to compare the effect of having a scribe in PBL tutorials versus non-scribed tutorials in regard to time used by the group on the discussion and depth of discussion, and to assess the effect of having an effective scribe on these two parameters.

Work done: The last progress in the first PBL tutorials were examined using standardized criteria to measure the depth of discussion in tutorials, the ability of the group to clearly define their learning issues and the effectiveness of the scribe to do the job. The time spent by the group on the discussion has been measured.

Results: There is a significant positive relationship between scribe qualities and group achievements (r = + 0.84, df = 28, p < 0.001). Groups with effective scribes (n = 20) were more able to achieve deep discussion and clearly define their learning issues compared to non-scribe groups (n = 20), (p = 0.001).

Conclusions: The use of a scribe in PBL tutorials is recommended for better outcomes for the group discussion and engagement of students. Effective scribes help their groups to explore issues in more depth and enable the group to clearly define their learning issues. Course designers should not simply be satisfied with training tutors but also give attention to students' training on basic skills required for PBL tutorials.

4G/SC1 Evaluating midwifery students’ competency in delivering IUD services using OSCE

F Erfanian*, T Khadivzadeh (Mashad University Of Medical Sciences, Midwifery and Nursing School, Mashad, 3588, Iran)

Background: Delivering IUD services is one of the important competencies that midwifery students must obtain during the academic period. As OSCE can be a reasonably reliable, valid and objective method of assessment of clinical skills, this study was conducted to assess midwifery students’ skill in delivering IUD services using a clinical examination.

Work done: All of the 62 eligible midwifery students participated in a ten-station OSCE, about delivering IUD services for 50 minutes. In 8 stations students performed technical skills or interacted with standard patients and in 2 stations they answered the related questions. Students' performance in 8 stations was rated by observer or standard patients using validated checklists.

Results: 98.2% of students' performance was poor. In average, the students gained 49% of total score in station related to counseling and screening, 35.7% in inserting the IUD, 40% in IUD removal, 24.4% in management of IUD side effect.

Conclusions: Students’ skill in delivering IUD services was lower than expected.

Take-home messages: Results show the need for change in current teaching methods. OSCE is as a valid evaluation method and provides valuable information which can't obtained by more traditional assessment modalities.

4G/SC2 The Humanism in Surgery OSCE: teaching and evaluating the “soft” skills in a surgical residency

A M Easson*, D Barsuk, V Palter, K Knickle, L Hawryluck (University of Toronto, Princess Margaret Hospital and Mount Sinai Hospital, Toronto, Ontario, M5G 2M9, Canada)

Background: The importance of teaching and evaluating humanistic skills (defined in Canada by CanMEDS communicator, manager, collaborator, health advocate and professional roles) is recognized but the best way to do this is not defined.

Work done: A 5-station Humanism in Surgery OSCE was held at the University of Toronto. The stations were tasks specific to the general surgical resident experience (ex. disclosure of medical error, obtaining a DNR order). Clinical knowledge was not evaluated. Each station used actors (SPs) playing a standardized role. 24 residents participated, and attended a session on communication skills. Surgical faculty evaluated resident performance by a checklist and global ratings of the CanMEDS roles.

Results: There was good inter-station (global rating (0.698), SP scores (0.619)) and inter-rater reliability (0.728 for SP and examiner). Surgeons felt resident behavior reflected their performance in practice. 77% of residents reported a good learning experience, 76% thought the scenarios were realistic, and 63% wanted the OSCE repeated.

Take-home message: This format appears a valid way to teach and evaluate humanistic skills of surgery residents. It meets the needs of adult learners by combining education with evaluation and could readily be adapted to any speciality by tailoring the scenarios.
4H/SC1 Fostering medical students’ diagnostic competence by case-based learning with worked-out examples: Effects of process-oriented learning and learning from errors

Martin R Fischer*, Veronika Kopp, Robin Stark (Munich University Hospital, Medizinische Klinik - Innenstadt, Medical Education Unit, Ziemssenstr. 1, 80336 Munich, Germany)

Background: Medical students often have problems finding a correct diagnosis: they collect diagnostic findings without having a hypothesis and without relating the findings to each other or to hypotheses. Worked-out examples effectively improve diagnostic capabilities. This study examined whether diagnostic competence in the field of hypertension could be facilitated by learning from errors and process-oriented information.

Work done: We developed an innovative learning environment to foster diagnostic competence by implementing common diagnostic errors into worked-out examples. Furthermore, additional feedback information concerning the diagnostic process was given. The worked-out examples were implemented in the learning platform CASUS. 153 medical students were randomly assigned to one of four experimental conditions: high process-oriented feedback could be facilitated by learning from errors and process-oriented information.

Work done: Literature was studied to identify evidence-based important items in the history of specific diseases. Items of two existing checklists were evaluated for relevance by comparing the relative risks and odds ratios of the items with those identified in the literature as evidence-based important items. We also studied if relevant items were missing.

Results: In the OSCE on acute coronary syndrome, items developed by the clinical physicians and evidence-based items were similar. In a second OSCE, pulmonary embolism, two items in the checklist appeared to be of minor relevance (OR<2) and two items of major relevance (OR>10 and OR>2) were missing in the checklist.

Conclusion: Clinical-based checklists can be improved when the evidence for every item is taken into consideration.

4G/SC3 Are clinical-based items in case-specific checklists for objective structured clinical examinations (OSCEs) similar to evidence-based items for history of present illness?

Aggie M Hettinga*, Henry J Jansen, Cornelis T Postma (University Medical Centre Nijmegen, Secretariaat Onderwijsinstituut Huispostnummer 306 Postbus 9101 Nijmegen, 6500 HB, Netherlands)

Background: In the near future all sixth year students from the University Medical Centre Nijmegen will take part in an OSCE with ten stations with standardized patients. Up to now the checklists for this were developed by clinical physicians followed by discussions in a panel of experts. The objective was to compare clinical-based items of checklists with evidence-based items of the history of present illness.

Work done: Literature was studied to identify evidence-based important items in the history of specific diseases. Items of two existing checklists were evaluated for relevance by comparing the relative risks and odds ratios of the items with those identified in the literature as evidence-based important items. We also studied if relevant items were missing.

Results: In the OSCE on acute coronary syndrome, items developed by the clinical physicians and evidence-based items were similar. In a second OSCE, pulmonary embolism, two items in the checklist appeared to be of minor relevance (OR<2) and two items of major relevance (OR>10 and OR>2) were missing in the checklist.

Conclusion: Clinical-based checklists can be improved when the evidence for every item is taken into consideration.

4G/SC4 What’s up? DOCSS: an addition to the clinical skills testing repertoire

P Stark*, S Cowley, M Reed, N Baz (University of Sheffield, Academic Unit of Medical Education, BS Wilkinson St, Sheffield, S10 2GJ, United Kingdom)

Background: A sample of practical skills are included in the assessment blueprint for the final OSCE. In 2007 we also tested all the practical skills outlined by the GMC (2003) using DOCSS (Direct Observation of Clinical Skills in Simulation).

Work done: DOCSS is an OSCE format with ten x 5 minute stations, with a numerical mark and global rating (pass/fail). The 244 year group were divided for convenience (144 in round one; 100 in round two). In round one, 2 students passed all stations and 1 failed all 10 stations. In round two, 32 students passed all stations and 1 student failed 9 stations. All students received personal feedback on their performance and repeated only the stations they had failed within 2 weeks.

Conclusions: This additional formative assessment helps students identify their competence in practical skills in time to allow remediation prior to the final summative assessment. Students welcomed the assessment and the prompt and personal feedback. Students in the second round performed better in all stations, without further instruction, illustrating the power of the assessment on learning.

Take-home message: The students and staff are reassured that they have the full range of skills and can demonstrate them in simulation.

4G/SC5 Objective structured clinical examination in Pediatrics: Students’ self-assessment and objective performance in different domains of clinical skills

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Background: Medical competence is a complex, multifaceted construct. Few data are available concerning a systematic analysis concerning self-assessment addressing different assumed domains of medical competence. Previous studies related to students’ self-assessment and their correlation with scores in an OSCE provide conflicting data.

Work done: N=31 medical students participated in an eleven station OSCE in Pediatrics. The Cronbach alpha was 0.75. The acceptability of the OSCE and self-assessment of their history taking, communication and clinical skills were rated by students (N=31) in Likert scales from 1=totally agree to 5=completely disagree.

Results: Students accepted the OSCE as a fair (1.6+/-0.56) and useful (2.06+/-0.92) tool to assess their skills. Average self-assessment of students’ skills was high: 2.3+/-0.64 in history taking, 2.0+/-0.79 in communication and 2.1+/-0.69 in clinical skills. An analysis of ratings in self-assessment and OSCE-scores was performed and will be presented.

Conclusions: Literature was studied to identify evidence-based important items in the history of specific diseases. Items of two existing checklists were evaluated for relevance by comparing the relative risks and odds ratios of the items with those identified in the literature as evidence-based important items. We also studied if relevant items were missing.

Results: In the OSCE on acute coronary syndrome, items developed by the clinical physicians and evidence-based items were similar. In a second OSCE, pulmonary embolism, two items in the checklist appeared to be of minor relevance (OR<2) and two items of major relevance (OR>10 and OR>2) were missing in the checklist.

Conclusion: Clinical-based checklists can be improved when the evidence for every item is taken into consideration.
Conclusions: Results showed that errors and mainly the combination of errors with high process-oriented feedback information had a significant positive effect on learning outcomes. Students who learned with errors and got high process-oriented feedback information benefited mostly from the learning environment.

Take-home messages: Learning from errors combined with process-oriented information in worked-out examples is a promising possibility to facilitate medical students’ diagnostic competence efficiently.

**4H/SC2 Impact of introducing task-based learning into a preclinical curriculum**

Moira S. Lewitt*, Eva Grenbäck, Anna-Lena Hulting (Karolinska Institutet, Department of Molecular Medicine and Surgery, Karolinska University Hospital Solna, Stockholm, 171 76, Sweden)

Background: In facing the transition to a new, more integrated, medical degree programme at Karolinska Institutet, teachers have expressed several concerns, including loss of ownership and identity of their discipline. Task-based spiral approaches to learning will allow horizontal and vertical integration of disciplines around a topic. We are therefore interested in introducing task-based learning in endocrine physiology to facilitate the transition and to improve student learning.

Work done: In our current teaching in endocrine physiology we use clinical examples and bring patients into the lecture theatre. We defined a task in relation to one of these. A study guide was made available to help students integrate their learning of physiology and to prepare for the patient encounter two weeks later. The same case will be presented later in the medical degree from the perspective of other tasks. We are assessing the impact of this change on student learning, on teaching and also from the perspective of the patient.

Conclusion: Our findings have implications for the further development of task-based learning as a tool for promoting integration of clinical teaching within a preclinical curriculum.

**4H/SC3 Peer-reviewing the written report of a medical research training**

I J van Wijk*, E Braakman, M Pullens, A H de Voogd, J A A M van Diemen-Steenwoorde (VU medical center, PO BOX 7057, 1007 MB Amsterdam, Netherlands)

Background: Research training is an important part of medical education. In 2005 we started quality improvement of the research training, first by informing the students using a formative portfolio, and second by introducing a peer-reviewer next to the daily supervisor to assess the written report. We determined how students rate these changes and analysed the influence on their grades.

Work done: 84 students took part in an a structured questionnaire. Answers were compared to those of 115 students in 2004.

Results: Students felt well-informed (3.90 versus 3.67, 5-point scale), and the assessments by the daily supervisor as well as by the second reviewer were according to the expectations of the students: 3.97 and 3.96 respectively. In 26 cases the second reviewer graded the report higher (mean difference 0.37, on a 5-point scale), in 40 cases lower (0.38) than the daily supervisor. The final mean grades of the students were, compared to 2004, not influenced by introducing the peer-reviewing process.

Conclusions: Students and teachers appreciate the new portfolio and feel comfortable with the second assessment. The process of peer-reviewing reports of the research training, influences individual grades by decreasing as well as by increasing the initial grades of the daily supervisor.

**4H/SC4 Student selected components: do students learn what teachers think they teach?**

Michael J Murphy,†, Sean P McAleer, Olga J Remers, Margery H Davis (‘University of Dundee, Division of Pathology & Neuroscience, Ninewells Hospital & Medical School, Dundee, DD1 9SY, and Centre for Medical Education, University of Dundee, United Kingdom) doi:10.1001/jama.2007.0695.

Background: Undergraduate curriculums in many medical schools include student selected components (SSCs). These vary in educational content. In Dundee, supervisors must indicate which of twelve learning outcomes they think are addressed by their SSC, and also whether each learning outcome is a major or minor component of teaching. Upon completion of SSCs, all students feedback their perceptions of outcomes achieved.

Work done: We compared perceptions of supervisors and students for SSCs (n=68) completed by second and third year medical students (n=341) during a single academic year. We plotted SSCs (rows) against outcomes (columns) and devised a ‘traffic-light’ system of recording agreement/disagreement, with green representing complete agreement, red complete disagreement, and amber minor disagreement.

Results: Complete agreement between supervisors and students about learning outcomes (‘green boxes’) ranged from 45% (‘appropriate decision making skills and judgement’) to 64% (‘competent to retrieve and handle information’). Using ‘traffic-lights’, we identified individual SSCs and outcomes where supervisors and students clearly disagreed.

Conclusions: Agreement between supervisors and students about learning outcomes is limited, and varies by SSC and outcome. Disagreement can be readily identified by colour-coding.

Take-home message: A complex data set can be made visually accessible by a simple ‘traffic-light’ system.

**4H/SC5 Student-Selected Components: the St. George’s experience**

Philip Sedgwick, Salochana Hassan, Peter McCorrie (St. George’s, University of London, Centre for Medical and Healthcare Education, Fourth Floor, Hunter Wing, Cranmer Terrace, Tooting, London, SW17 0RE, United Kingdom)

Background: Student-selected components (SSCs) are an established element of UK undergraduate medical curricula. The General Medical Council recommended SSCs occupy one-third of curricular time, allowing study of topics outside the core curriculum. The aim was to develop skills in research and self-directed learning plus provide opportunities to present work both verbally and in writing. However, their implementation has been variable with differences in purpose.

Work done: This paper describes a SSC in the MBBS Graduate Entry Programme at St. George’s, University of London. The SSC commences at the start of year 2 with a designated four-week period at the end of the year. The SSC is a data collecting exercise, supported by teaching in research and critical appraisal. Students design a research or audit project, seek a tutor, gain ethical approval if necessary, collect data and undertake analyses. Assessment is by a poster and oral presentation. Students’ views as to the value of the SSC will be presented.

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Conclusions: The described SSC provides a valuable opportunity in developing essential skills. It has been challenging setting assessment criteria and achieving similar standards between SSC assessors.

Take-home message: Wider discussion is needed to achieve consensus of purpose, outcomes and assessment of SSCs.

4H/SC6 An analysis of global medical humanities programs
Melih Elcin*, Ozcan Demirel, Iskender Sayek (Hacettepe University Faculty of Medicine, Dept. of Medical Education and Informatics, Sihhiye, 06100, Turkey)

Background: Medical humanities is a concept that is concerned with complementing medical science and technology through the contrasting perspective of the arts and humanities that helps physicians to understand what it is to be fully human. For the last 40 years, medical humanities have become more popular. Many medical schools added medical humanities topics to their curriculum. With the development of professionalism, it has been more important in the modern world. There are many programs at undergraduate, graduate, masters and doctorate degree levels in US, UK, Canada, Australia, Argentina, Italy, Switzerland and Turkey.

Work done: In our study, we found 68 institutions offering medical humanities programs. We analyzed their syllabi. A survey was sent to the directors of the medical humanities programs; 27 of them completed. We asked their opinions about the important values/attitudes that their graduates achieved, the impact of the program on the professional behaviour, and the need for program development. We got suggestions about the essential components and key outcomes of a program. We finalized our study with their suggestions for the medical educators who are planning to develop a medical humanities program. We designed a program outline for medical humanities.

4I AMEE Fringe 1

4I/F1 The heartaches of “Curricular reFoRm”
K H Mujtaba Quadri* (Shifa College of Medicine, Sector H-8/4, Islamabad, 051, Pakistan)

After graduation of the inaugural class of 2003, the Dean invited me to take charge of curricular reforms. An AAMC graduation questionnaire identifies areas of redundancy and deficiencies. In January 2004, I spent six months reviewing relevant literature on curricular issues, administered a faculty questionnaire and made several faculty presentations. In July 2004, a curricular taskforce took shape consisting of volunteers only. I coordinated this taskforce through several meetings and via the web. The recommendation is to adopt a modular integrated curriculum with small groups and PBL. I introduced small groups. A foundation module evolved for the 2005 intake. Faculty resistance becomes overt. An integration taskforce took shape for 9 months and gave up the efforts as “impractical” by April 2006. I undertook a Herculean effort over 5 months and put together a sixty module multidisciplinary vertically and horizontally integrated curriculum outline. Faculty felt marginalized! I put together a reversed PBL paradigm called CAS(e) i.e created a script based learning. Faculty decided to reinvent the wheel at level 3 of Harden’s integration ladder. The heartache continues!

4I/F2 The utilisation of humanities resources in teaching ‘The Practice of Medicine’ – critical thinking and reflection in medicine
Peter Nelson (University of St Andrews, Bute Medical School, KY16 9TS, United Kingdom)

The next best thing to the clinical experience which is unavailable and inappropriate to the early years of medical education is medical drama in the form of humanities sources. Well-written short stories, plays and cinema which are often produced by gifted physicians and non-medical writers raise issues which are entirely appropriate for meaningful discussion in both small group teaching as well as to make a point in the lecture theatre environment. The learning objectives of interpretation, decision-making, personal reflection and critical thinking which are all fundamental to the practice of medicine are easily addressed in such an environment of teaching and learning. Students often surprisingly respond to the arts and humanities in medical education even if they have preconceived notions that they will be receiving a strictly scientific grounding in the basic sciences. Many welcome it as a diversion from the structured scientific manner of learning.

4I/F3 Medical Mondegreens: maximizing medical communication in teaching
Jacqueline L Gerhart*, Jamie S Newman* (Mayo Clinic, 200 First Ave SW, Rochester, MN 55906, United States)

A familiar song lyric may be heard over and over, your brain fitting the sounds in to a recognizable pattern. You think you understand what it means only to discover you have misheard it. This is called a Mondegreen, named after the nonexistent Lady Mondegreen, who debuted in a song lyric which included the line “laid him on the green”. Just as song lyrics are misinterpreted so are our educational efforts to our students and our patients. What we say and what others hear are often completely different. Like the children’s game “telephone,” the idea we wish to transmit can take on a new meaning with retelling.

Through music, skits, and activities, we will demonstrate this effect and provide strategies to avoid it. Following this session, participants will have a better understanding of the power of their “misunderheard” statements.
Workshop
4J  Assessing the written communication skills of physicians

Thomas Rebbecchi*, John (Jack) Boulet, Gerald Whelan (Educational Commission for Foreign Medical Graduates (ECFMG), 3624 Market Street, 2nd Floor, Philadelphia, PA, 19104, USA)

Background: The ability of physicians to communicate with other healthcare workers, especially in writing, is a fundamental skill. In 1998, the Educational Commission for Foreign Medical Graduates (ECFMG) began administering a clinical skills assessment (CSA) as part of the certification requirements for graduates of international medical schools. Included within the CSA was a post encounter patient note (PN) exercise. The output from the PN exercise was scored holistically by physician raters.

Intended outcomes: Participants will have an understanding of how a holistic evaluation of written patient summaries can provide reliable and valid assessment scores. Participants will become familiar with the development of rating scales and associated scoring criteria.

Structure: Following a review of the content of a typical standardized patient case, and the general guidelines for holistic rating, participants will develop applicable holistic scoring criteria. These 'performance standards' will be based on the presenting patient complaint and what, ideally, should be documented. Several written notes will then be reviewed and rated based on the proposed rubric and scoring guidelines. These ratings will be tabulated and discussed.

Intended audience: Medical educators responsible for the assessment and evaluation of medical students and/or graduates.

Level of workshop: Intermediate.

Workshop
4K  BEME Review Methodology – a round table discussion

Chairperson: Marilyn Hammick (UK)

This session aims to provide the opportunity for conference delegates who have participated in a BEME review to discuss the challenges associated with the different stages of the review process. These include searching the literature, coding and data abstraction, analysis and synthesis, reportage and writing. Delegates not yet involved in BEME are also welcome.

Workshop
4L  Un atelier francophone: La simulation − construire une communauté francophone de ressources − bilan de l’approche systématique à l’Université de Montréal

A workshop conducted in French: Simulation − building a French-speaking community of teachers who want to design learning and teaching materials. A systematic approach at the University of Montreal

J V Patenaude*, P Drolet*, R Lalonde, A Sansregret (Université de Montréal, 4029 Lacombe Montreal Qc, Canada, H3T 1M7)

La faculté de médecine de l’Université de Montréal a développé un concept systématique de formation basé sur la simulation pour tous les étudiants en médecine et en sciences de la santé. Ce concept a permis l’élaboration de programmes dont les éléments s’appliquent tout au long de la formation des étudiants et de leur vie professionnelle. L’Université de Montréal possède 40 ans d’expérience avec des ressources de pointe et variées en simulation. Depuis 2000, elle a mené des réflexions systématiques sur son utilisation en médecine. Ces travaux ont amené à: (1) généraliser l’utilisation de la simulation; (2) identifier certains facteurs, pour saisir la portée du paradigme de la simulation et articuler son application.

Objectifs et méthodes: (1) Présenter critiquement notre méthodologie; (2) Discuter des approches et ressources utilisées actuellement et prochainement à l’Université pour l’intégration de la simulation dans les formations; (3) Discuter en petits groupes puis en plénière de diverses problématiques émergentes*, incluant la création d’une communauté d’enseignants désirant offrir des programmes en français.

L’atelier se dirige aux pédagogues et francophones (surtout) s’intéressant à la formation initiale, au résidant et la formation continue de tous les niveaux de formation.

4M/P1 Development of clinical thinking using simulated cases
R Cruickshank*, E M Sinclair, A Laidlaw, P Bjelogrlic (University of St Andrews, Bute Medical School, Western Lane, St Andrews, KY16 9TS, United Kingdom)

Background: After 5 semesters of teaching in a new curriculum, leading to a BSc in medical science, our students are familiar with the techniques of basic clinical examination and history taking. For their final semester we devised a programme that was designed to encourage critical analysis of the information gained from application of these techniques. This involved developing a series of 6 simulated clinical problems to be solved.

Work done: Working in groups of 3, each group was presented with 6 clinical scenarios over the course of the semester. Groups had 15 minutes to take a history from a simulated patient (SP) and edit this into an oral clinical summary for presentation. The group were asked to apply the information gained in the history to guide their examination of a further SP who continued the same character role. Information was imparted as they examined the salient features verbally, in picture format or as sound recordings. Separate sessions allowed feedback and discussion of the cases. A questionnaire investigating student response to the course was completed by all participants (140).

Results: will be presented.

4M/P2 Clinical decision making course – putting the pieces together
Nicola Cooper*, Kirsty Forrest (University of Leeds, Academic Unit of Anaesthesia, The General Infirmary of Leeds, Great George Street, Leeds, LS1 3EX, United Kingdom)

Background: Doctors are required to make judgements in the face of uncertainty. This skill has traditionally been acquired through observation and osmosis. However, many medical students are now taught clinical skills by non-doctors and this observation time during which students implicitly learned to think like a doctor has been shortened. Evidence is growing that clinical decision making can and should be taught – alongside medical knowledge and using multimodal methods of decision making.

Work done: With this evidence we decided to pilot a 6 week clinical decision making course for 3rd year medical students from January 07–April 07. The course covered the topics of clinical probability, interpreting diagnostic tests, defining problems, pattern recognition, cognitive biases and evidence-based medicine. The students were informally assessed using a case study. Evaluation of the course is ongoing with an on-line form.

Take-home message: The course has gone well and course content will be shown. Evaluation from the students will also be presented. With shorter medical postgraduate training in the UK, more and more aspects of professional learning are becoming explicit with structured opportunities for deliberate practice and feedback. Clinical decision making is one example.

4M/P3 Using an art appreciation model to reflect on your clinical decision making process
Alexis Hutson*, Glynis Buckle (East Midlands Healthcare Workforce Deanery, 11, Merus Court, Meridian Business Park, Leicester, LE19, United Kingdom)

Background: Art educator Edmund B. Feldman developed four stages of looking at art. These are description – describe what you see; analysis – analyse the work in terms of art principle; interpretation – what does this all mean for you; judgement – how has your perception changed since you first saw it.

Work done: By studying a famous painting doctors worked through the four stages of the model and then reflected on which part of the process they were most or least comfortable with. This has highlighted how a preference in one area can lead to neglect of another.

Conclusions: This in turn will have an impact on their decision-making process. For example: a rigid application of logic may result in a lack of empathy and interpretation without sufficient attention to the detail and may lead to over excitement about a new theory. Having identified their individual preferences for visual interpretation they were then asked to apply the process to clinical decision-making.

Take-home message: This short presentation will give a brief demonstration of how we used this model to help doctors in training to reflect on their decision-making process and identify areas for possible development.

4M/P4 A method to assess medical students’ ability to reflect on a consultation experience
Sebastiaan Koole*, Anselme Derese (Ghent University, Faculty of Medicine and Health Sciences, Centre for Education Development, De Pintelaan 185, 383, 9000 Gent, Belgium)

Background: Reflection is a mental activity, through which students (and health professionals) analyze their practice experiences in an open and systematic way. Indirect methods such as reflective journals or questionnaires are open to bias because the mental processes are translated into writings and/or already interpreted by the reflector. The proposed study tried to evaluate medical students’ reflection skills following a simulated consultation avoiding this possible bias.

Work done: Two medical students with estimated high reflection ability and two with low reflection ability were filmed during a consultation with the same simulated patient. After that they were asked to reflect spontaneously on this consultation. They reviewed their consultation on video, after which they were asked to reflect again, first spontaneously and secondly in a feedback session with a trained expert. The experts scored the students on various aspects of reflection: description/awareness, reflective inquiry/analysis and new perspectives/reflective outcome.

Results: The results gave an indication of the validity and feasibility of this method to assess medical students’ reflection skills after an authentic consultation experience.

Conclusion: This small scale study results will be used for research on the assessment of reflection skills on a larger scale.
4M/P5 Development of reflective skills during the clerkship: a pilot project of reflective portfolio

Serge Langevin, Sylvie Bourque, Nathalie Gagnon (CHUS Hôtel-Dieu (faculté de médecine et des sciences de la santé de l’Université de Sherbrooke, 580 rue Bowen Sud, Sherbrooke, Quebec, J1G-2E8, Canada)

Background: A portfolio and mentoring will be the cornerstones of our clerkship reform. One of the mandates of the portfolio is to promote the development of reflective skills. These skills not only contribute to more effective work-based learning, but they are also useful in helping the learner to cope with difficult professional experiences. However, this process of self-regulation and introspection is neither spontaneous nor natural for learners. We propose a simple and convenient tool, providing clear guidelines to guide clerks in their reflection. This conceptual model entails 4 steps including: rigorous appraisal of the event, its critical analysis with problem formulation, elaboration of a remediation plan and identification of impacts on professional practice.

Work done: A pilot study has been undertaken in October 2006 for a 16 week period, involving 28 clerks and 7 mentors.

Results: This study confirmed the relevance and user friendliness of our educational tools and the feasibility of such an approach in the complex clinical environment. Subjects explored by clerks covered all dimensions of professional practice. The difficulty that clerks have to deal with uncertainty was particularly noteworthy. Mentors not only support clerks in their reflection, but more importantly to assure transferability of their new learning to other professional situations.

4M/P6 Developing the ‘reflective’ student in an undergraduate medical programme

Fiona Muir*, Penny Lockwood (University of Dundee, Tayside Centre for General Practice, The Mackenzie Building, Kirsty Semple Way, Dundee, DD2 4BF, United Kingdom)

Background: Student Selected Components (SSCs) are a core part of Dundee University Medical School’s curriculum. The ‘Reflective Practitioner’ SSC module was designed to: develop the undergraduate student’s knowledge and skills of critical reflection; enhance the development of professional competence through studying aspects from practice, and personal and professional development.

Work done: During 2006 and 2007 year two and three students studied the two week module and met the module learning aims and objectives. A module evaluation questionnaire was completed by students to find out its value to the student’s learning.

Results: Students reported that: (1) the module is extremely useful for their personal and professional development; it helped to improve the student’s knowledge of putting theory into practice; (2) they valued using creative approaches to learning, for example poetry, art, video work; (3) having a ‘critical friend’ and developing self awareness was an important aspect of the module; (4) they valued learning how to be constructive about issues/problems/successes/scenarios and the value of keeping a journal of their learning.

Conclusions/Take-home message: In designing the reflective practitioner SSC, a key aim was to provide students with an opportunity to develop and recognise the importance of reflection for personal and professional development, and their role as a doctor. The perceived benefits of the module, signifies the value to the learner in developing a structure to reflection and an opportunity to bridge the theory-practice gap.

4M/P7 Developing reflective writing skills in medical students

Julie Struthers*, Jim Aiton (University of St Andrews, Bute Medical School, KY16 9TS, United Kingdom)

Background: The importance of reflection and the ability to write reflectively has been highlighted by the selection processes for junior doctors, as part of the ‘modernising medical careers’ (UK). In order to lay the foundation for our students’ understanding of reflection in practice we provide early exposure to reflective writing in the curriculum.

Work done: We have created a series of practical tasks designed to improve students’ reflective writing. Each semester, students complete two reflective pieces linked to specific learning experiences. These progressively more demanding tasks include reflecting on early experiences of medicine and later address more challenging and complex issues encountered by the students. Each reflective piece contributes to their electronic portfolio and is reviewed by their personal tutor.

Results: Students have benefited from a more formal and practical approach taken towards encouraging reflection. The improvement in the reflective process can be seen in the written reflections added to the portfolios. Staff have been impressed by the quality of the reflective writing and many students show a mature and self critical approach to their learning and experiences.

Conclusions: Providing students with progressively more demanding opportunities to reflect on their learning experiences has vastly improved their reflective writing skills.

4M/P8 Using narrative reflections for behavioral and social science teaching during clerkships

Margaret L Stuber (David Geffen School of Medicine, 760 Westwood Plaza, Los Angeles, CA, 90045, United States)

Background: The required clinical clerkships are an intense component of medical student training. The time demands are high, and the learning curve is steep. There is often little time to pause and reflect on ethical, economic or other behavioral and social issues.

Work done: At UCLA, students leave the clerkships twice a month to meet in small groups for Doctoring. In 2005, in response to student critiques and other curricular changes, this course was modified. A narrative component was added to the course, to provide a bridge from the experiences on the clerkships to the topics of discussion. Readings and discussion centered on issues of professionalism and systems of care. Issues of current interest were actively used, including policy proposals in the School, and propositions on local ballots.

Results: Students were much more open to reflective writing than had been anticipated. Tutors found these bridges very useful in having topics come alive in the small group discussion. Students appreciated the opportunity to participate in current debates in the School of Medicine about policies.

Conclusions/Take-home message: Behavioral and social science learning can be significantly deepened by using narrative reflections to connect the topics to their lived clinical experiences.
4M/P9 Developing a student-centred clinical activity tool – the bee’s knees or a dog’s dinner?
Kim Whittlestone*, Jeff Bullock, Linda Jones, Adam Mugford, Peter Nunn (Royal Veterinary College, LIVE Centre for Excellence in Teaching and Learning, Hawkshead Lane, North Mymms, Hatfield, AL9 7TA, United Kingdom)

Background: The significant literature on the perpetual and expanding problem of content overload in medical and veterinary education, highlights the surface and strategic approaches adopted by students. At the Royal Veterinary College we are researching the design of a student-centred clinical activity tool (‘myPad’). This is being developed with and for students to encourage clinical reasoning and reflective learning logs.

Work done: 25 fourth and final year student volunteers were introduced to the use of a handheld device (sponsored by Orange), the myPad program and research project. We adopted a staged release approach, designed to motivate participants and provide gradually more demanding tasks (Salmon 2006, Honey 2003).

Results: Students craved structured content and proformas rather than exploring “what works for them”, confirming their surface and strategic orientations. By monitoring student entries, researchers were able to design tasks that encouraged linkages between “chains of practice and networks of knowledge” (Hay 2007) - understanding and reflecting rather than just recording.

Conclusions/Take-home messages: Clarity of purpose, when introducing eReflective logs, is the “bee all and end all”. Ongoing support and structured tasks are required to promote students reflective recording capabilities. Merely providing an electronic notepad will not enhance clinical reasoning and reflection (dog needs low protein diet because?).

4M/P10 Six thinking hats: the patient’s journey
S Jamieson (University of Glasgow, Wolfson Medical School Building (R329), University Avenue, Glasgow, G12 8QO, United Kingdom)

Background: To provide medical undergraduates with an opportunity to develop their critical thinking, a learning activity was devised whereby students used Edward de Bono's ‘six thinking hats’ to consider issues relating to chronic medical conditions.

Work done: Thirteen students in groups of 4 or 5, with staff to facilitate, were given one of three journal articles, which dealt with the patient experience of breast cancer, glaucoma or rheumatoid arthritis. Each group was given six paper hats in different colours, representing different modes of thinking. Wearing the appropriate hat (metaphorically, at least), groups considered the allocated ‘patient story’ from multiple perspectives.

Results: Participants were asked to indicate which of 12 positive or 12 negative adjectives applied to the activity. Thirteen students and 2 members of staff returned proformas. The activity was viewed as ‘thought-provoking’ (n=8), interesting (n=7) and stimulating (n=7), though some participants found it confusing (n=3) or complicated (n=2).

Conclusions: The generally positive feedback indicates this learning activity offers a novel means of encouraging students to approach topics from multiple perspectives, consistent with critical thinking.

Take-home message: Edward de Bono’s ‘six thinking hats’ may be used to stimulate critical thinking by undergraduate medical students.

4M/P11 Learning outcomes from teaching medical humanities: ‘Critical Thinking Synergy’
Owen Dempsey*, Beverley Lucas (Bradford and Airedale Teaching Primary Care Trust, Douglas Mill, Bowling Old Lane, Bradford, BD5 7JR, United Kingdom)

Background: The use of humanities in medical education is widespread but is often optional, and although some of the educational aims of medical humanities teaching are transferable skills, the humanistic perspective, coping with the particular situation, self-awareness and joint investigation, there is little research evidence for these.

Work done: Through focus group interviews with students and tutors we evaluated the learning outcomes from an intensive 2 week special studies module consisting of five very different humanities workshops.

Results: Our study provides evidence for outcomes such as the development of humility, the identification of stress and its relief through a shared emotional catharsis, an increased sense of personal value and self esteem, and the development of “new ways of thinking” – the first step in developing a critical thinking approach to accepted dominant discourses in both culture and medicine.

Conclusions: We concluded that these workshops achieved important and relevant outcomes not usually achieved by the traditional curriculum and suggest that critical thinking was encouraged by two synergies a) from combining therapeutic and vocational workshops and b) combining the socialisation of a small group with a location removed from the usual medical school environment (Dempsey and Lucas 2006, “Critical Thinking Synergism: Combining Therapeutic And Vocational Approaches To Teaching Medical Humanities”, Journal for Learning through the Arts: A Research Journal on Arts Integration in Schools and Communities: Vol. 2: No. 1, Article 18. http://www.repositories.cdlib.org/clta/lta/vol2/iss1/art18/ (with a hypertext link to a video about the course made by students)

4M/P12 The effects of critical thinking disposition and approach to learning on academic performance in medical school
So Jung Yune*, Sang Youup Lee, Shin Young Kang, Sun Ju Im, Hae Jin Jeong (Pusan National University Medical School, 1-10, Amidong, Seo-Gu, Busan, 602-739, Republic of (South Korea))

Background: Critical thinking disposition is known to be important in education. A student's approach to learning, which is the learning strategy adopted by the learner, affects academic performance. Therefore the study was carried out to analyze the effects of both on academic performance of medical school students.

Work done: 146 students (3rd grade) of medical school were chosen as subjects. We surveyed their critical thinking disposition and approach to learning.

Results: There were significant correlations among academic performance, critical thinking disposition, and approach to learning. The effects of critical thinking disposition and approach to learning on academic performance were also significant. Especially, academic performance, which was negatively affected by surface approach, was positively affected by effort management, organized studying and open-mindedness.
Conclusions: Critical thinking disposition and approach to learning can be important factors for achieving high academic performance in medical school.

Take-home message: It is necessary that to develop a program and educate students to have critical thinking disposition and a sound approach to learning, such as effort management, an organized studying strategy and open-mindedness.

4M/P13 Comparison of critical thinking skills and critical thinking dispositions in undergraduate health care management students

M Gharib*, M Rabiiyan, M Sahali, A Sabouri Kashani, H Khalilkhali (Medical Sciences/University of Tehran, School of Allied Medical Sciences, No 21, Fardanesh St, Ghods Ave, Keshavarz Blvd, Tehran, 1417744181, Iran)

Background: Aimed at stimulating mental faculties and developing mental capacities, education is concerned with thinking processes to the extent that critical thinking is widely recognized as the central outcome of higher education. This study investigates the critical thinking skills and critical thinking dispositions in freshmen and senior students of health care management at the school of allied medical sciences.

Work done: This study used a cross-sectional design. A sample of 60 undergraduate volunteers of health care management completed a demographic questionnaire, and answered the 34 questions on the Iranian version of California critical thinking skills test, as well as the 75 items on California critical thinking disposition inventory.

Results: The results showed that there was no statistically significant difference between the freshmen and senior students’ CCTS scores (p=0.713). However the scores of senior students on CCTDI was significantly higher than those of the freshmen (p=0.032).

Conclusions/Take-home message: In modern education critical thinking is so important that it has become one of the global standards of medical education. Furthermore, certain accreditation agencies consider the growth of students’ critical thinking an important criterion for evaluation of programs. The present study suggests the necessity of serious care for students’ critical thinking skills as well as their continued development in critical thinking dispositions as an integrated feature of curricula of tertiary education.
4N/P3  Correlation research on the preference of teaching style, learning approach and self-directed learning for undergraduate medical students

Shu-Ling Cho, Kuo-Im Tsou, Chao-Sune Lin, (Fu Jen Catholic University, 510, Chung-Cheng Rd., Hsin-Chuang, Taipei Hsien, 242, Taiwan)

Background: Self-directed learning and lifelong learning are important characteristics to medical students. In order to cultivate in students these attributes, School of Medicine in Fu Jen Catholic University has adopted PBL as a teaching method for five years.

Work done: This cross-sectional study, by using Guglielmonio’s Self-Directed Learning Readiness Scale (SDLRS) and Entwistle’s Approaches and Study Skills Inventory for Students (ASSIST), aimed at analyzing (1) what learning approaches affect students’ self-directed learning, (2) what factors influence individuals’ learning effects, and (3) what factors influence students’ preference to certain teaching style. Participants were 236 medical students from Fu Jen medical school.

Results: (1) Self-directed learning can be fortified by increasing the deep approach and decreasing the surface apathetic approach (R^2=49.1%). (2) Learning effects positively correlated with self-directed learning (r=.29) and strategic approach (r=.27), negatively correlated with surface apathetic approach (r=-.25). It was also found that confidence in learning is a mediate between learning strategy and learning effects. (3) Lifelong learning, challenging and innovating, and deep approach were significantly predictive to preferring thinking-teaching style (R^2=26.2%). (4) Difficulties in learning can be predicted by surface apathetic approach and deep approach (R^2=42%). The standardized regression coefficient showed that difficulties in learning resulted from individuals’ abuse of surface apathetic approach, not their use of deep approach.

Conclusion: On the basis of the findings, the researchers suggested that using a learning approach appropriately can change students’ learning effects and fortify their ability in self-directed learning.

4N/P4  Deep Impact? A longitudinal study on learning strategies, academic success and how medical school might influence both of them

Fabry Goetz*, Giesler Marianne (Department of Medical Psychology, Albert-Ludwigs-University, Rheinstrasse 12, Freiburg, 79104, Germany)

Background: Learning strategies are in general differentiated in two groups depending on whether they foster surface or deep learning. Since medical curricula are often overcrowded with facts and since assessment in medical education relies still heavily on methods were higher cognitive abilities are rarely required, assumptions have been put forward that deep learning becomes more and more replaced by surface learning during the course of medical education.

Work done: We conducted a longitudinal study with first year medical students. Six scales of the LIST-Questionnaire by Wild and Schiefele were applied at the beginning and the end of the first academic year. As a result, five scales were confirmed. Furthermore a relationship between learning strategies and gender was found: female students scored higher than male students on some cognitive learning strategies. In addition different measures for academic success were assessed. The results of this second measurement are currently being processed and will be presented at the conference.

Take-home message: Since medical education should encourage deep learning it is very important to know if and how medical school influences learning strategies of students. By this means potential negative factors can be detected and corrected if necessary.

4N/P5  Not utilized learning potential for student nurses during their clinical placement in psychiatry

Linda Kragelund (The Danish University of Education, Tuborgvej 164, 2400 Kbh. NV, Denmark)

Background: When Danish Nursing Education in 2002 became a Bachelor Degree the clinical part of the education was reduced. Therefore it was necessary to optimize learning in practice.

Work done: I made a qualitative investigation to describe student nurses’ learning processes in non-routine situations where they interact with psychiatric patients. The theoretical framework includes primarily P Jarvis’ concept disjuncture and A Heller’s theory about everyday life. The empirical part of the study is primarily based on qualitative semi-structured interviews with observations of and observations with a volunteer sample of 11 student nurses doing their psychiatric placement in 11 psychiatric wards. The empirical material consists of more than 1.000 transcripted pages.

Qualitative content analysis was used. It resulted in further development of Jarvis’ concept disjuncture in a concept named collective not-conscious disjuncture, in development of the concept pseudo-everyday life activities and in a categorizing model for and a theory about student nurses’ learning processes. The theory includes relations between 4 types of disjuncture, 3 types of content in the learning processes, and factors that provoke transformation from one type of disjuncture to another.

Students and mentors are not aware that students are in potential learning situations when they interact on their own with patients, and that it is non-routine for students to act with patients in pseudo-everyday life activities.

Conclusions: It may be possible to optimize learning in practice if not-conscious learning possibilities are transformed to conscious learning possibilities.

4N/P6  Cognitive and non cognitive factors in Mexican students who finish medical school

Adélina Alcorta-G*, Juan-F González-G, D Saldivar-R, Jesús Ancer-R, María-V Bermúdez, Juan Montes-V, Santos-R, Marco-V Gómez-M, A E Alcorta-G, S Tavitas, F Rodríguez, A M Salinas (Facultad de Medicina, Departamento de Psiquiatría del Hospital Universitario “Dr. José E. González” Universidad Autónoma de Nuevo León (UANL), Palo Blanco 604 Valle de Santa6engía, San Pedro Garza García, Nuevo León, Mexico)

Background: The aim was to explore what kind of cognitive and non cognitive factors can predict successful completion of medical school in Mexican students. A longitudinal study was carried out over 6 years in 690 students.

Work done: Participants took a non cognitive test three months after they started their training. We collected their curriculum average as cognitive factors. We looked at two groups, one graduating in 6 years vs. the other not graduating on time. Analysis: Media differences test for independent population and x^2.

Results: Average age for freshmen was 18±2 years; 52% male; 70% from public school. No significant differences were found (p>.05). 22% finished medical school; there were no cognitive factors that predicted their success: to be
in contact with faculty (p<0.01); non medical readings (p<0.01); feeling to be loved (p<0.01); low escision (p<0.03); strong identity (p<0.01); highly functional family (p<0.01); fewer life stress events (p<0.01); and depression (p<0.03). As a cognitive factor: curriculum average at the end of the freshman year (p<0.01).

Conclusions: Both factors can predict students who can finish medical school in a regular program. This test can predict vulnerable students and help faculty to decide about new programs for these students before they fail.

4N/P7 Development and evaluation of study guide template for integrated modules: a study in Medical School at King Abdul Aziz University, Saudi Arabia

Awwāḥ Al-hazmi (Medical School, King Abdul Aziz University, Physiology Department, P.O.Box 80205 Jeddah 21589, Saudi Arabia)

Background: The undergraduate medical curriculum in the King Abdul Aziz University in Jeddah, Saudi Arabia, was reformed in 2002. It is integrated, organised in courses and modules, and has an increasing proportion of problem-based and self-directed learning. The new curriculum has presented the faculty and students with specific challenges. Accustomed to a traditional teacher-centred approach, and because the language of instruction is English, students needed much more support and encouragement in taking advantage of independent learning than their western counterparts would require. A well designed study guide may be the most important student learning tool in the new integrated curriculum.

Work done: This paper describes an effective and efficient approach to the production of study guides. The approach is based on the development and the use of a study guide template. The guide is evaluated by second year medical students at King Abdul Aziz University.

Conclusions: The carefully designed study guide is highly appreciated by students and “study guide template” that includes a well designed layout is a useful aid for medical teachers who have had no experience in producing a study guide. The template allows medical teachers to invest their time in the production of the content rather than in the layout and format of the guide.

4N/P8 Clinical study guide: a tool for promoting life long learning

S H Nazari*, S H Salehpoor (Shahid Beheshti Medical School, Evin, Chamran Highway, Tehran, 19395-4719, Iran)

Background: The clinical curriculum in the new UME program of Shahid Beheshti Medical School has witnessed a dramatic shift from disease toward clinical manifestations, as well as horizontal and vertical integration of radiology, pathology, and pharmacology in clinical rotations.

Work done: The study guides developed in interdisciplinary authoring teams before the students entered the clinical rotations. These roles for the study guides are in addition to 3 conventional roles that Harden assumed for study guides. Interventions for integration in the clinical program were numerous and we needed a uniform structure for different study guides so a guidebook for writing study guides was developed by Educational Development Center (EDC). More information at the first part and a gradual shift to independent study is the characteristic feature of the frame work for the study guides which were particularly designed for the program and encourage students’ self study.

Conclusion: The study guides in this program have been used as a tool for management of curricular change and are considered as a tool for self-directed learning.

Take-home message: Various uses of study guides for different needs of the curriculum are possible.

4N/P9 Importance of mentoring using a log sheet for the pediatric rotation at KAAU

Nadia Fida (King Abdulaziz University, PO Box 1450, Jeddah, 21441, Saudi Arabia)

Background: In spite of performing many hours of individual teaching we are unable to know what our students learn collectively by the end of the rotation. The exam event repeatedly leaves the staff members unsatisfied with the student’s performance, and the student’s learning experience untested. This is the first encounter of our staff with failing students. This is a measurable approach to standardize students’ learning experience during 6th year pediatric rotation.

Work done: (1) Our initial step is to translate the material we have available consisting of our curriculum and expectation guides into objectives. This step may be further developed into related skills; (2) Mature the log sheet into skills related log sheets where cases are itemized into problems which are discussed within the case, the related outcome, and learning points. (3) Construct tools for collecting objectives achieved during daily activities as in rounds and morning report that can be conducted and applied during resident-student encounter, providing a chance for structure and planning. These tools can be evaluated by committee members during daily workshops to expand on the above core objective. Gaps can then be identified to complete a global objective plan for the pediatric rotation. A resulting check list of activities can then be offered for guiding both mentor and student. (4) Structure the student’s day with the allocated mentors to plan and review together their daily activity to promote self learning, and encourage planning and growth.

Conclusion: If learning objectives are identified and translated into a study guide, we can further process the material into related activities providing evidence of achievement ready for collection and assessment. This sets the groundwork for a consensus of standards and expectations.

Take-home messages: Planning and monitoring is a critical part of continuous assessment.

4N/P10 Senior Mentor Programs: older adults as teachers of medical students

Thomas Stewart, M. Brownell Anderson*, Paul Eleazer, Maureen Dever-Bumba, Darryl Wieland, Cindy Alford, Camille Fitzpatrick, Mitch Heflin, Carla Herman, Cheryl Hinnors, Michael Hosokawa, Bonnie Kantor (Div. of Geriatrics, University of South Carolina, 3010 Farrow Road, Suite 300, Columbia, South Carolina, 29203, United States)

Background: Senior Mentor Programs (SMPs) match medical students with older adults who are well and socially active as developmental stage and geriatrics content. Approximately 20 programs have evolved in the U. S. since 2000. Some focus extensively on student attitudes while others emphasize knowledge and skill components. Most contacts between students and mentors occur in mentors’ residences.
A variety of program models evolved to address curriculum and organizational requirements. The vast majority of participating older adults are age 75 and older.

Work done: A national evaluation of ten SMPs has been completed using archived data (e.g. focus groups results, student evaluations, etc.) and original data collected in site visits. Results are now being reported at professional meetings and academic journals.

Conclusions: Student and mentor acceptance of the relationship has been very positive. Student attitudes have gone beyond modification of stereotypical attitudes about older adults and their health. The SMPs have discovered that both general curriculum objectives (such as communication skills and professionalism) and geriatrics objectives can be addressed by SMPs. SMPs have also created positive community images for sponsoring medical schools.

4N/P11 “Mind maps” as a tool for medical physics and telemedicine knowledge summarization
Elena Kukurová*, Michal Weis, Marie Košuličová, Dušan Sysel, Juraj Martinka, Michal Tmka (Institute of Medical Physics and Telemedicine, Brno, CZ, Sasinkova 2, Bratislava, SR, 813 72, Slovakia)

Work done: Using results of a three-year analysis, the authors developed a pedagogically simplified, practice-oriented methodical model of direct teaching as well as of individual study for students, graduates and other persons interested in lifelong education. The model is composed of a set of individual SCHEMES on the principle of one-minute knowledge basis in branches Medical Physics and Telemedicine. Schemes as graphical arrangement of ideas represent a knowledge-concentrate of single-page knowledge, which we can read in one minute. For easier access to information on the Internet, it has hypertext, multimedia user-friendly features. A student can work independently, with use of e-learning with support of PC and Internet.

Conclusions: The authors believe that the introduced model can become a strong motivational factor for theoretical study, since it supports one of the most important pedagogical principles – the principle of continuity and it relates to the didactic system of memory maps – "mind map". A mind map is a scheme presenting relations among concepts. The main goal is to become familiar with basic concepts and their relationship and creation of a system with a certain hierarchy. It supports creative thinking by categorization of ideas and basic relations among them.

4N/P12 Role play for assisted teaching of health promotion for sixth-year medical students
Thanachai Panaput, Wichian Thianjaruwatthana (Medical Education Center, Khon Kaen Hospital, Khon Kaen, 40000, Thailand)

Background: Role play is a method which can be used to make students understand the concept of health promotion. The objective was to evaluate role play assisted teaching of health promotion in relation to concept of health promotion for sixth-year medical students.

Work done: 36 sixth-year medical students at Khon Kaen Hospital were recruited. A 45 minute lecture of health promotion was given. They were then divided into 4 groups and were assigned to perform a role play for 15 minutes in one out of four topics; road safety, chronic disease, infectious disease and smoking in health personnel. At the end, assessors gave immediate comments. Self-administered questionnaires were undertaken 6 months later.

Results: Assessors endorsed four features of the role play; contents, presentation, initiation idea and teamwork in all groups. Most students understood more of the concept of health promotion (75%). Most of them recognized the importance of health promotion (78.1%), appreciated role play (84.3%) and were able to integrate health promotion into their clerkships (68.7%).

Conclusion: Role play assisted teaching can be used as a method to improve understanding of the concept of health promotion for sixth-year medical students.

Take-home message: Role play is an alternative method for teaching of health promotion.

Posters

40 The student and Peer Assisted Learning

4O/P1 Student-driven Employment Day for the Biomedicine Programme at Karolinska Institutet

Background: The Employment Day of the Biomedicine Programme at Karolinska Institutet was initiated and arranged by students who wanted to present alternative work opportunities to their fellow students and to enhance interaction between students and the pharmaceutical industry. So far, most of the graduates of the relatively new Biomedicine programme (started 1995) have worked with laboratory research. There are few alumni that can provide inspiration to present students in their career choice. The students therefore wanted to visualise different career opportunities, get additional goals for their education and understand how to reach the profession of their dreams.

Work done: The employment day included an introduction describing the Biomedicine programme to the company representatives, a symposium where six companies and organisations presented themselves to the students, and a career fair where students interacted with future colleagues from pharmaceutical and consultancy companies, as well as biotech and entrepreneurial organisations.

Results: Of the participants 90% believed that the employment day was fruitful/very fruitful and many wished for an expansion of the day.

Conclusions: The employment day served as a forum for students and employers to meet and led to an increase in final-year students who chose to do their master thesis outside the university.
40/P2 Are students entering primary care specialties more emotionally intelligent?
Nicole J Borges* (Wright State University Boonshoft School of Medicine, 232 Fred A White Center, 3640 Colonel Glenn Highway, Dayton, OH, 45435-0001, United States)

Background: Despite the growing body of research on emotional intelligence, studies are lacking regarding the relationship between emotional intelligence and specialty choice.

Work done: This study assessed the emotional intelligence of 84 fourth-year medical students using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) to determine if students entering primary-care specialties would have higher scores on the MSCEIT than students entering non-primary care specialties.

Results: Results of the multivariate analysis of variance showed that no significant difference existed between students who entered primary care or non-primary care specialties and their MSCEIT scores.

Conclusions: Students entering primary care specialties do not appear to have higher emotional intelligence than students entering non-primary care specialties. Fourth-year medical students, regardless of specialty, were similar in their ability to identify emotion in themselves and others, use emotion to solve problems, understand complex emotions, and manage emotions in themselves and others.

Take-home message: Given that exploring medical students’ emotional intelligence as it relates to specialty choice is in its infancy, it is recommended that additional studies be conducted to determine if the emotional intelligence construct as a whole should be considered in the specialty choice decision making process of medical students.

40/P3 Taking account of diversity in the delivery of courses and programmes of medical education
N Bhal*, T B S Lee, N Gupta, N G Jones, M Musa, J L Franks, N Kollar, S J Brigley (Cardiff University, School of Postgraduate Medical and Dental Education, UWCM, Heath Park, Cardiff, CF14 4XN, United Kingdom)

Background: Students are now more diverse as a population than ever before. Teachers need to be aware of diversity, students’ different backgrounds, experiences and culture and how to utilise these demographic differences in the learning process. As part of the MSc Medical Education course in Cardiff, students from year two are expected to prepare a teaching session for students in year one. This course hosts a diverse group of students from multi professional, multicultural, different age groups and backgrounds.

Work done: A half day session on “Taking account of diversity in the delivery of courses and programmes of medical education” was prepared, delivered and evaluated. The sessions included various novel techniques e.g. focus groups as learning tools to teach this lesson.

Conclusions: The session achieved its objectives by raising students’ awareness and understanding of diversity issues in medical education. The use of novel instructional techniques proved successful in engaging this diverse group of students and helped achieve learning outcomes. Areas in which diversity of the group enriched the learning process were highlighted.

Take-home messages: Diversity and equality are important issues to consider when delivering courses and taking them into account improves and enhances the learning experience.

40/P4 Application of PQA in assessing the personal qualities and moral orientation of Taiwan medical students - a preliminary report
Kuo-Inn Tsou*, Cho S L, David Powis, Miles Bore, Don Munro, Daniel Man-Yuen Sze, Lin C S, Hsieh M S (Fu Jen Medical College, No. 510 Chung Cheng Rd, Hsin-Chuang City, Taipei County, 24205 Taiwan)

Background: To meet the goal of medical education, it is important to pay attention to the personal qualities and the moral/ethical orientation of medical students.

Work done: This study took the 206 medical students from two Taiwan medical schools as the study subjects. Candidates completed two psychometric measures from the PQA: NACE to assess certain personality traits and Mojac to assess their moral orientation (see www.pqa.net.au). The internal reliability of each test was acceptable and the scores had a normal distribution.

Results: Students with a bachelor or higher degree (16 students) had higher scores in Confidence and lower scores in Empathy than high school-leaver-entry students. Those who entered the medical school through entrance examination had higher scores in Narcissism than those who entered through the interview process (44 students). None of the scores was influenced by sex, family income or parents’ education and occupation. Scores of this cohort were compared with the PQA norms. The cohort was found to have lower scores in moral orientation (more Libertarian), Confidence, Empathy and total score for NACE (more Detached); higher scores in Narcissism and Aloofness than the PQA norms.

Conclusions: PQA can discriminate between Taiwan students and were reliable too. Significant differences between the cohort and the PQA norms were found for all traits measured. Whether these differences reflect cultural difference or the suitability of PQA for oriental medical students need further investigation.

40/P5 Randomization in medical education; random seating and random teacher-learner interaction: application and evaluation by postgraduate students
Ioannis D K Dimoliatis*, Aikaterini Bibou, Alexandra Zingiridou, Evangelos Drosos (Ioannina University Medical School, Department of Hygiene & Epidemiology, University Campus, Ioannina, 45110, Greece)

Background: The Athenian Democracy used a draw for the election of the parliament, president, judges. Roman soldiers used a draw for sharing Jesus’ clothes. God’s will for the successor of Judas was revealed with a draw. Randomized controlled trials randomly shape equivalent groups, the p-value statistic is the probability of getting the result by chance alone, and some medical schools select their students with a draw. What about randomization in Medical Education?

Work done: In a postgraduate seminar students’ seating, division in subgroups, work presentation, and any question addressed to them took place by lottery. Immediately after seating and at the end of the seminar, students wrote anonymously their comments on randomization. All comments were feedbacked to all (31) students and they were asked to provide secondary comments, which were also distributed to them along with a questionnaire for evaluation.
Conclusions: The process ran smoothly with active participation in a pleasant climate. Immediately after seating 17% had a negative opinion, 69% neutral, and 13% positive; at the end of the seminar 20%, 14%, 65% respectively (p<0.02); and 2.5 months later 7%, 14%, 79%.

Take-home message: Randomization of student seating and participation at postgraduate level is an applicable teacher-learner interaction, well accepted by students, who 2.5 months later kept their opinion positive.

4O/P6 The assessment of medical students’ learning styles using the Kolb Learning Style Inventory

Hye Rin Roh, Sang Wook Lee, Sung Bae Park, Ji Yoon Lee, Sook Won Ryu*, Jeong Hee Yang, and Sang Hyun Kim (Kangwon National University College of Medicine, 192-1 Hyoja 2 dong Chuncheon Gangwondo, 200-701, Republic of South Korea)

Background: The purpose of this paper was to assess if there was a relationship between Kolb learning styles and learner variables including age, gender, and grade retention among Kangwon medical students.

Work done: The Kolb Learning Style Inventory (LSI) is being used at many educational levels to determine the learning preferences of medical students and clinicians. The students’ learning styles were analyzed for associations by learner variables. The Kolb LSI was administered to 164 Kangwon medical students. They were categorized based on learner variables.

Results: Kolb’s assimilator was the preferred learning style type of the study group (55.2%). accommodator (17.8%) and diverger (16.0%) were next, followed by converger (11.0%). Learning style preferences of medical students did not vary significantly according to age, gender, and grade retention.

Take-home messages: No statistically significant relationships were identified between Kolb learning styles and learner variables. These results suggest that information of the learning styles can provide educators with planning teaching strategies, employing a variety of teaching methods, and facilitating academic performance.

4O/P7 Teaching – the best way to learn?

A Vethayaganam*, B Askew, W Ifield, P Lee, L Smith, B V Prathibha (William Harvey Hospital, Kennington Road, Willesborough, Ashford, Kent, TN26 1HX, United Kingdom)

Background: Teaching and training is part of a doctor’s professional life. This has taken on a very important role in recent times. Doctors are increasingly being trained to teach and are undertaking professional educational qualifications. This has certainly led to junior doctors choosing to teach and wanting to develop in this area.

Work done: As part of the Foundation programme, a junior doctor has taught undergraduate medical students and Foundation year 1 doctors, weekly for four hours over four months. The sessions are not only used to plan and organise teaching, but also enhance the doctor’s own teaching skills by undertaking courses in teaching. Active and structured feedback is sought for all the sessions. A mock exam is held for the medical students prior to their final exams.

Conclusions: As a result of this, the junior doctor has been able to learn and enhance his own teaching skills and knowledge as well as develop his organisational and team working skills. The feedback from the students has been excellent.

Take-home message: Teaching is a very powerful learning tool and when organised well, can not only help the students but also enhance the teachers’ knowledge.

4O/P8 Using student ratings in Objective Structured Teaching Examinations of Foundation doctors’ teaching skills

Alex Walter*, Ged Byrne, Paul O’Neill (University of Manchester, South Manchester University Hospital, Medical Education, 1st Floor, Education and Research Centre, Wythenshawe Hospital, Manchester, M23 9LT, United Kingdom)

Background: The scientific literature suggests that student evaluation of teaching contributes to the validity of 360 degree appraisal.

Work done: In evaluating a workshop on teaching procedural skills for Foundation doctors (postgraduate years 1-2) we used standardised students (SSs) in a four station Objective Structured Teaching Examination (OSTE). Participants were rated by the SSs at each station using a previously published 1-5 Likert scale with 22 items. 13 SSs rated 22 participants over 2 OSTEs, pre- and post-workshop, in a total of 164 encounters.

Results:

<table>
<thead>
<tr>
<th>Stations, mean rating (95%CI)</th>
<th>Venepuncture</th>
<th>Catheterisation</th>
<th>Cannulation</th>
<th>Arterial blood gas sampling (ABG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSTE 1</td>
<td>4.17 (3.92,4.43)</td>
<td>3.56 (3.09,4.03)</td>
<td>3.70 (3.35,4.05)</td>
<td>3.23 (2.99,3.47)</td>
</tr>
<tr>
<td>OSTE 2</td>
<td>4.34 (4.09,4.59)</td>
<td>3.50 (3.27,3.74)</td>
<td>4.11 (3.83,4.39)</td>
<td>3.55 (3.17,3.92)</td>
</tr>
</tbody>
</table>

Conclusions: Although the teaching of a less complex station (venepuncture) scored higher than a more complex station (ABG) (p<0.001, repeated measures ANOVA, across both OSTEs), individual item ratings demonstrated a marked ceiling effect (31%=5, 35%=4) which prevented discrimination of teaching ability.

Take-home messages: Students participated enthusiastically but further work is required to determine how best to optimise their assessment of teaching in OSTEs. Approaches may include training, adjusting the rating scale and using statistical methods to minimise construct-irrelevant variance.
4O/P9 Peer teaching in Family Medicine – From boring lectures to buzzing peer groups – was it “worth it”?

David Cameron*, Anne-Marie Bergh, Glynis Pickworth, Marietjie van Rooyen, Julia Blitz (Department of Family Medicine, PO Box 667, Pretoria, 0001, South Africa)

Background: Lecture-based, didactic teaching was transformed into peer group teaching in the five-week Health and Care block in the fifth year of the University of Pretoria MBChB programme. The class of 200 students was divided into eight groups. Each group became experts on one of eight themes (Chronic disease, Pain management, Palliative care, Mental Health, Managed care, Forensic medicine, Emergency medicine, and AIDS & TB) which they in turn taught to a group of 26 peers.

Work done: Students were taught to a group of 26 peers. Palliative care, Mental Health, Managed care, Forensic medicine, Emergency medicine, and AIDS & TB) which they in turn taught to a group of 26 peers.

Work done: A self-selecting mentor scheme was set up for all students in their first year, Year 0 of the School’s 6 year programme. Each mentor produced a profile of themselves that included data such as their age, gender, hobbies and interests and ‘home’ location. This enabled mentees to self-select their mentor. Mentors received training in mentoring skills and were given advice on possible issues they might encounter. Evaluation of the scheme was undertaken by means of questionnaires to both mentors and mentees.

Results/Conclusions: Preliminary results indicate that there are mutual benefits to be gained from participating in a peer mentoring scheme. Mentees felt they received readily accessible support from their mentors while mentors found that they developed transferable skills such as leadership and communication skills. Therefore, peer mentoring schemes could provide a valuable form of student support.

Conclusions: Unknown at this stage - block ends March 30. Preliminary findings seem to indicate that it was feasible, it was acceptable only to some and the effectiveness remains to be determined.

Take-home message: Multi-faceted evaluation of curriculum change allows one to determine whether it was “worth it”.

4O/P10 A regional “near-peer” tutoring scheme provided by junior doctors

Jeremy Rodrigues*, Anshuman Sengupta, Alana Mitchell, Jenny Richards, Simon Maxwell, Martin Dennir, O James Garden, Simon Paterson-Brown, Mike Ford (Royal Infirmary of Edinburgh, Little France, Edinburgh, EH16 4SA, United Kingdom)

Background: Peer-led teaching by undergraduates at University of Edinburgh has been shown to be an effective teaching modality. We aimed to build on this by launching a “near-peer” scheme, using junior doctors’ experience of examinations to provide tutorials for final year undergraduates. Our objectives included providing additional teaching for students by tutors who had recently sat these examinations and to provide tutors with teaching experience early in their postgraduate career.

Work done: 18 tutors were recruited from the 2006 graduates of University of Edinburgh. Preparatory sessions for tutors were provided alongside tutorials. Tutors led one tutorial per month, aimed at specific Final MBChB examination stations (History, Examination, Prescribing). Tutorials were run at five sites across South-East Scotland. Anonymised feedback was collected from attendees.

Results: To date, there have been 40 tutorials, with feedback received from 122 of 124 attendees. 98% strongly agreed or agreed that the sessions provided useful revision, and 98% were interested in attending more. A formal proposal is being submitted to the University. If approved we will organise a preparatory course for tutors.

Conclusions: Near-peer teaching is a popular adjunct to the existing curriculum.

Take-home messages: “Near-peer” teaching can bridge peer-led teaching and traditional postgraduate-led teaching.

4O/P11 To identify potential benefits and issues of clinical medical students teaching pre-clinical medical students within Southampton School of Medicine

Cara Hammond*, Sally Curtis, Carolyn Blundell, Linda Turner (University of Southampton, MEDU, Level 4, Boldrewood Campus, School of Medicine, University of Southampton, Bassett Crescent East, Southampton, S016 7PX, United Kingdom)

Background: The current move in medical education towards small group teaching has provided the opportunity for peer teaching to have a more influential role. The GMC’s publication Tomorrow’s Doctors states that graduates “must recognise their obligation to teach colleagues”, but with no formal training in teaching how can this be viable?

Work done: This study aimed to identify potential benefits and issues of peer teaching and student views on its place in medical education. Senior medical students volunteered to teach students in year 1. The student teachers were given a tutorial on teaching skills prior to teaching. Feedback questionnaires were filled in after the sessions had taken place.

Results: Preliminary results indicate that student teachers and the students taught benefitted from peer teaching. Both sets of students increased their knowledge of the subject taught and the student teachers have learnt new teaching skills. Early analysis suggests that benefits outweigh the disadvantages.

Conclusions: With the current shift in medical education, peer teaching could be a major resource. This study has shown that peer teaching benefits both groups of students. All students involved have indicated they have gained skills important to their continuing education. With very little adaptation this model could be effectively used within most universities.

4O/P12 The introduction of a peer mentoring scheme for first year medical students – a pilot project

Nadia Fisher*, Carolyn Blundell, Sally Curtis, Linda Turner (University of Southampton, School of Medicine, Southampton General Hospital, Tremona Road, Southampton, Hampshire, S016 6TD, United Kingdom)

Background: The aim of the study was to investigate possible benefits of introducing a peer mentoring scheme for first year students at Southampton Medical School. It sought to identify how such benefits might differ from, and add to, the current support mechanisms provided for students.

Work done: A self-selecting mentor scheme was set up for all students in their first year, Year 0 of the School’s 6 year widening access to medicine programme, BM6. Mentors were recruited from students in Years 1, 2 & 4 of the BM6 programme. Each mentor produced a profile of themselves that included data such as their age, gender, hobbies and interests and ‘home’ location. This enabled mentees to self-select their mentor. Mentors received training in mentoring skills and were given advice on possible issues they might encounter. Evaluation of the scheme was undertaken by means of questionnaires to both mentors and mentees.

Results/Conclusions: Preliminary results indicate that there are mutual benefits to be gained from participating in a peer mentoring scheme. Mentees felt they received readily accessible support from their mentors while mentors found that they developed transferable skills such as leadership and communication skills. Therefore, peer mentoring schemes could provide a valuable form of student support.
4O/P13 Medical students as teachers: an effective way in learning adolescent contraception

W Watcharotone, W Dansawang, C Ardonk (Buddhachinaraj hospital, 90 Sithamtripok Road, Muang Distinct, Phitsanulok, 65000, Thailand)

Background: “Medical students as teachers” is a strategy used not only to accomplish such objectives but also to expand their knowledge, enhance their teaching skills, and allow them to encounter an important social problem. This study aims to explore the value of “medical students as teachers” as a paradigm for learning adolescent contraception.

Work done: 5th year students (n=11) were assigned to teach high school students (n=95). They collected information, designed their own teaching styles and discussed the teaching plans with medical staff. The teaching hours were carried out under staff supervision. Evaluation included attitudes towards the course from medical students, supervisors, and learners. Pretest and posttest scores of learners were also analyzed.

Results: All medical students agreed that the experience expanded their knowledge, improved teaching skills and should be addressed in the regular curriculum. Supervisors noticed their knowledge improvement, teaching capability and enthusiasm to teach. The learners were also impressed and enjoyed the teaching hours. Posttest scores showed significant improvement (mean=3.72 versus 2.78, p<0.01).

Conclusion: “Medical students as teachers” is valuable for learning adolescent contraception and should be implemented as a basic learning strategy.

4O/P14 Introduction and evaluation of a Student Grand Round

William Costigan*, Rachel Isba, Richard Taylor, Paul O’Neill, Gerard Byrne (University of Manchester, Undergraduate Office, 1st Floor ERC, Wythenshawe Hospital, Southmore Road, Wythenshawe, Manchester, M23 9LT, United Kingdom)

Background: Grand Rounds play an important role in postgraduate medical education. Tomorrow’s Doctors emphasises the role of doctor as educator, and as such it is important that medical students be given the opportunity to develop appropriate teaching skills.

The pilot Student Grand Round (SGR) at Wythenshawe Hospital was developed with these roles in mind. This study looked at the end-of-semester feedback given by students.

Work done: During the final session students were asked to fill in a sixteen-item questionnaire.

Results: Highlights of the results, with the percentage agreeing/strongly agreeing: I enjoyed SGR 62%; SGR is a good idea 84%; I learned something from SGR 80%; Presenting at SGR was a useful experience 78%; I will put my presentation in my portfolio 69%; Filling in peer feedback during SGR was useful 48%; The summary feedback was useful 63%; I will put a copy of our feedback in my portfolio 74%; I felt well supported whilst preparing our presentation 42%; I will continue to come to SGR 85%.

Conclusions/Take-home messages: SGR was well received and students found it a positive experience. There are plans for it to become a permanent feature of year 3 teaching.

4O/P15 Peer-to-peer learning in PBL sessions

Andrea Antolic*, Dagmar Rolle, Rita Kraft (Arbeitsgruppe Reformstudiengang, Charité Universitätsmedizin Berlin, Chariteplatz 1, Berlin, 10117, Germany)

Background: The aim is to give students more responsibility in self-designed PBL-cases and peer-to-peer learning. The application of PBL to case-conferences is examined.

Work done: PBL accompanies medical students in the Berlin Reformed Track over a period of five years and is gradually adjusted to a more clinical approach. In the fifth year during the clerksip in internal medicine students meet once a week in their PBL group. They choose a patient from their ward and prepare a PBL-case. Each student has to consider why this case is interesting for the group discussion and will provide a learning profit for their peers. As the students work on different internal subspecialty wards we expect a wide variety of topics.

The specific characteristic is that the student himself moderates his peers’ discussion. The responsible tutor assists the case presenting/moderating student, provides feedback for him and the group and functions as clinical expert when needed.

Conclusion: We will present the results of a questionnaire, which topics the students chose and why, their satisfaction with the tutor role and whether this PBL concept is adequate to the level of development of fifth-year-students.

Take-home message: PBL is adaptable to peer teaching and qualifies students in case presentations.

4O/P16 Peer teaching in Family Medicine – role of student group dynamics

Julia Blitz*, David Cameron, Marietjie van Rooyen, Glynic Pickworth (Department of Family Medicine, PO Box 667, Pretoria, 0001, South Africa)

Background: Peer teaching was used in the fifth year of the University of Pretoria MBChB programme. The class of 200 was divided into eight groups. Each group became experts on one of eight themes (Chronic disease, Pain management, Palliative care, Mental Health, Managed care, Forensic medicine, Emergency medicine, and AIDS & TB) which they in turn taught to a group of 26 peers.

Work done: Contribution of different teaching styles to group dynamic The students’ approaches to teaching were assessed by the peer teacher in their own “expert” session compared to their mark in other theme sessions. Pretest and posttest scores of learners were also analyzed.

Results: All medical students agreed that the experience expanded their knowledge, improved teaching skills and should be addressed in the regular curriculum. Supervisors noticed their knowledge improvement, teaching capability and enthusiasm to teach. The learners were also impressed and enjoyed the teaching hours. Posttest scores showed significant improvement (mean=3.72 versus 2.78, p<0.01).

Conclusion: “Medical students as teachers” is a strategy used not only to accomplish such objectives but also to expand their knowledge, enhance their teaching skills, and allow them to encounter an important social problem. This study aims to explore the value of “medical students as teachers” as a paradigm for learning adolescent contraception.

Work done: 5th year students (n=11) were assigned to teach high school students (n=95). They collected information, designed their own teaching styles and discussed the teaching plans with medical staff. The teaching hours were carried out under staff supervision. Evaluation included attitudes towards the course from medical students, supervisors, and learners. Pretest and posttest scores of learners were also analyzed.

Results: All medical students agreed that the experience expanded their knowledge, improved teaching skills and should be addressed in the regular curriculum. Supervisors noticed their knowledge improvement, teaching capability and enthusiasm to teach. The learners were also impressed and enjoyed the teaching hours. Posttest scores showed significant improvement (mean=3.72 versus 2.78, p<0.01).

Conclusion: “Medical students as teachers” is valuable for learning adolescent contraception and should be implemented as a basic learning strategy.
4P/P1 Effectiveness of an interactive CME workshop on performance of occupational physicians: a controlled trial

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Background: Diagnosis, prevention and reporting of occupational diseases (ODs) are core activities for occupational physicians. Their performance can be improved because ODs are still under reported. Interactive continuing medical education (CME) workshops may be effective in changing the performance of physicians. Outcome measures of performance should be actual performance rather than self assessment measures.

Work done: The intervention is a one day workshop for small groups, with preparation assignments, peer teaching and problem-oriented training and discussion as key components. Teachers acted as tutors. The study is a controlled trial design with 122 physicians in the intervention group and 500 controls. We measured the proportion of reporting physicians and the number of reported ODs per physician. Predictive factors are assessed.

Results: The workshop significantly changed the proportion of reporting physicians (p = 0.013). The number of reported ODs per physician did not change. Self-efficacy after the workshop is a predictive factor (p = .022).

Conclusions: The interactive CME workshop is effective in changing the performance of physicians.

Take-home messages: Assignments, peer teaching and problem-oriented training and discussion are valuable components in a CME workshop.

4P/P2 An innovative, adaptable, project management technique for personal and educational development projects

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Background: Individual, project or organisational development is vital for survival and growth, but many such educational initiatives stall or fail due to lack of understanding about the factors that define success. The author merged two business methodologies to create a formula to maximise the chance of success. Thus the "Development Pipeline" Concept was adapted and expanded to demonstrate that insight, motivation, ability, opportunity, real world practice, accountability and communication are the essential dimensions to be examined in developing a project. This was tested on an educational initiative.

Work done: A mentoring scheme for new consultants was planned and successfully established using this model. Each part of the process was systematically analysed using the "pipeline" analogy and possible blockages/constrictions identified and corrected.

Conclusions: Utilising this model to plan the project, several preconceived perceptions about likely blocks to the flow were shown to be false. Effort was thus focussed on the actual critical constrictions and no vital area was omitted. The project was successfully completed and future development of the mentoring scheme will utilise this pipeline analysis.

Take-home message: Business project management techniques can be simply adapted to allow meaningful critical analysis and successful completion of personal and educational projects.

4P/P3 Medical specialists' participation in CME/CPD activities in Finland

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Background: CME/CPD is voluntary in Finland and there is no recertification requirement in place. In 1999 the Finnish Medical Association (FMA) recommended a minimum of 10 days of external CME/CPD activities/training a year for doctors and the National Evaluation Council for CME/CPD made the same recommendation in 2003. The FMA has surveyed how these recommendations are met among medical specialists. 63% of Finnish doctors have specialised in one or more of the 49 specialties.

Work done: A survey reviewing the doctors' CME/CPD activities in 2005 was conducted as part of the FMA's annual questionnaire to all working doctors in Finland in 2006. The average participation rates were drawn from the data and compared within various specialties or associated specialty groups, altogether 15 groups.

Results: The workshop significantly changed the proportion of reporting physicians (p = 0.013). The number of reported ODs per physician did not change. Self-efficacy after the workshop is a predictive factor (p = .022).

Conclusions: The interactive CME workshop is effective in changing the performance of physicians.

Take-home messages: Assignments, peer teaching and problem-oriented training and discussion are valuable components in a CME workshop.

4P/P4 Needs assessment questionnaire for imposing a mandatory CPD course for Dentists in Greece

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Background: In Greece, the government and the professional bodies recognize the necessity of imposing a structured mandatory CPD system for all dentists. To ensure participation and improvement of professional performance, it is important to conduct a pre-program needs assessment. The purpose of the present study was to investigate the perceived educational needs of the dentists attending the 2006 Hellenic Dental Association Conference.

Work done: An anonymous questionnaire was distributed to all participants. It investigated personal background information, their opinion on the organization and content of the conference, and the use of various sources of continuing education.
Results: 302 dentists with a mean age of 41.22 ±10.05 years responded to the questionnaire. 88.4% stated that the organization of the particular conference was very good or excellent. 84% expressed the opinion that CPD should be mandatory and the most appropriate providers are the Universities (75%) and the Dental Association (56%). They preferred to be educated in clinical items using practical/clinical techniques (74%), mostly on Saturdays (82%).

Conclusions/Take-home messages: Special attention should be paid to the clinical orientation of a mandatory CPD system, provided by appropriate but authorized independent authorities, respecting the working timetable of the dentists.

4P/P5  **Reflections on HIV: identifying needs, improving learning, optimizing patient care**

Cécile Tremblay*, Peter Lin*, Marie-France Deslauriers (University of Montreal Hospital Centre, 3840 rue Saint-Urbain, Montreal, Quebec H2W 1T8, Canada)

Background: A multi-staged approach was used with the objective of assessing the learning and educational needs of Canadian physicians specializing in HIV/AIDS. A literature search on this methodology yielded no similar three-step needs assessments performed in the past.

Work done: The needs assessment took place in three distinct stages. The first stage consisted of an in-person focus group session with HIV specialists. For the second stage, the learning needs identified in the focus group session were validated in an online session. The third and final stage made use of a questionnaire faxed to 300 non-HIV specialist physicians.

Results: By directly involving the participants and allowing them to first identify, and then validate learning needs, this method ensured all recommendations were based on the findings accurately reflect the learning needs of Canadian non-HIV and HIV specialists. The four key topics highlighted were primary care, HIV management, comorbidities and social issues. Specific topics were prioritized within each area. Preferred formats for education and communication were also determined. Interestingly, there was great interest in comprehensive web-based initiatives as well as the more traditional methods such as live, face-to-face CME programs.

Conclusions: Educational strategies may help to reverse inverse performance in academically isolated rural hospitals.

4P/P6  **The role of context and process in the success of educational strategies in academically isolated rural hospitals**

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Background: The importance of continuous professional development for healthcare workers is widely acknowledged, but the identification of optimal implementation strategies remains a challenge, particularly in academically isolated rural areas.

Work done: We report the results of a qualitative study that evaluated the effect of an educational intervention aimed at rural doctors in the Western Cape Province, South Africa. We also present a conceptual framework for developing best practice educational strategies to reverse inverse performance in academically isolated rural hospitals.

Results: Doctors felt that participation in relevant learning activities improved their competence, increased the levels of job satisfaction they experienced, increased their willingness to stay in a rural environment, and impacted positively on the quality of services provided. The success of educational strategies is however heavily dependent on the local environment (context), as well as the practical applicability and clinical relevance of the activities (process).

Conclusions: Educational strategies may help to reverse inverse performance in academically isolated rural hospitals. This requires effective local leadership that creates a positive learning environment and supports clinically relevant learning activities.

Take-home message: The study findings reconfirm the need for health care providers and institutions of higher education to join forces to improve the quality of rural health care.

4P/P7  **Maintenance and improvement of family physicians competencies: Le Parcours du médecin de famille, an innovative program**

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Background: The analysis of our needs assessments data bank indicates that they all converge towards the necessity to organize a family practice curriculum-based CPD program: perceived needs by family physicians, real needs by licensing authorities and curricular needs by family medicine units.

Work done: With the objective of maintaining and improving physicians’ competencies, Le Parcours du médecin de famille is an innovative evidence-based program using a patient-management approach, promoting the new roles of family physicians. This new learning model combines large group lectures and panels to small group workshops in a 21 days cycle (7 days per year for 3 years) covering most major topics family physicians meet in their daily practice.

Conclusions: Participation in the first 3-year cycle (ending in May 2007) shows a high degree of satisfaction and regular attendance while numerous participants register for all sessions. The use of an auto-evaluation tool promoting reflective practice and of practice-facilitating tools during the program assures sustainability of new knowledge and its transfer into practice.

Take-home messages: The success of an innovative CPD program relies on a needs assessment solidly attached to daily practice and a constant concern about reflective practice and knowledge transfer.

4P/P8  **Performance concerns in psychiatrists**

Denis O'Leary* (National Clinical Assessment Service (NCAS), Market Towers 1, Nine Elms Lane, Vauxhall, London, SW8 5NQ, United Kingdom)

Background: NCAS helps employers and contractors manage performance concerns in doctors and dentists in the UK. NCAS has published data on performance concerns for all referred practitioners including some data on psychiatrists. Concerns have been classified in domains adopted by the National Disciplinary Framework for hospital practitioners - Clinical, Behavioural and Health. Whilst useful indicators of the key areas of concern, these domains are too-non-specific for training and development purposes.
4P/P9 Educational needs of session GPs – ten years on
Martin Wilkinson*, David Wall (West Midlands Workforce Deanery, St. Chad’s Court, 213 Hagley Road, Edgbaston, Birmingham, B16 9RG, United Kingdom)

Background: Ten years ago a study was undertaken to look at the educational needs of GP non-principals. The study found this group to feel isolated and had significant barriers to continuing professional development. The Standing Committee of Postgraduate Medical and Dental Education (SCOPME) gave 13 recommendations to be implemented by UK deaneries to improve education for GP non-principals. The terminology has changed to “sessional” GPs now represented by flexible career, retainers and locum GPs but many of the problems of 10 years ago remain.

Work done: The validated questionnaire of 10 years ago was revised and sent to all flexible career GPs and retainer GPs on the West Midlands Deanery data base. The questionnaire asked about how sessional GPs were keeping up to date and what the barriers to CPD were. The results were compared to the 1996 study. This study is currently being analysed and the results will be presented.

Conclusions: NHS appraisal, employment contracts and work by deaneries have partially addressed some of the problems encountered 10 years ago, but significant problems remain with access to CPD for sessional GPs.

Take-home messages: This group continues to feel isolated and vulnerable. Recommendations for 2007 will be presented.

4P/P10 Outcomes of three different practices of physician-patient communication module
R Guzel, N Mungan, G Seydaoglu*, D Altuntas, N Evilyaoglu, T Guler, F Guler-Uysal, M Gulsen, S Haslurk, M Kasap, N Ogulener, F T Duzun, N Saltoglu, S SoImanz, F Doran (Cukurova University Faculty of Medicine, Cukurova University Faculty of Medicine, Balcali, Adana, 01330, Turkey)

Background: The number of trainees or trainers and the duration may play significant roles on the effectiveness of a module.

Work done: The aim of this study was to evaluate different practices and to find out “favorable” and “needs to be developed” areas. In 2005 year round training was made with three trainers for four days, in 2006 groups were trained at the same dates, with two trainers for three days. The number of students varied from 10 to 13, with a total of 142, 136 and 113 students respectively. Evaluation was made by assessment forms consisting of 15 questions and written feedback.

Conclusions: The year round training caused disintegration and increased expectations among students. When the duration was set at three days with two trainers, some of the topics were not allocated sufficiently. The best practice was the one having all groups at the same dates with three trainers, and for four days.

Take-home message: The physician-patient communication module, which has been highly approved, can be modified according to the assets, characteristics, and the needs of each faculty of medicine.

4P/P11 Developing empowerment through leadership training of residents from different fields of specialization, in a university hospital
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Background: In the 90s it was considered that medical doctors were lacking professional skills in leadership, teamwork and organizational understanding. Thus a 35-day leadership program running for 2 years was started in 2000. The aims were to enable the residents to take control of their professional lives, strengthening their ability for teamwork, communication and systems thinking and make them more committed to participate in developing the organization.

Work done: The three first cohorts were retrospectively evaluated (semi-structured questionnaire) in 2004 about a year after the intervention (n=63) and compared to a control group (n=37).

Results: The results showed that the respondents were more active in participating and leading team processes and considered themselves as being improved in leadership skills. They made more initiatives in organizational development and considered themselves to have more influence in internal decision making. Generally, they had a more positive attitude towards the organization and their work than the control group. On the other hand, the analyzed group felt that their new skills were not properly utilized by the organization and local leaders after the program. Consequently, the program was modified with stronger connection between the program and everyday work and has continued with altogether 150 participants so far.

4P/P12 The gendered structures and status of female doctors in Korean health care system
Sang-Hyun Kim (Yonsei University College of Medicine, 134 Sinchon-dong, Seodaemun-gu, Seoul, 120-752, Republic of South Korea)

Background: This study shows why the status of female doctors is lower than that of male doctors in the Korean health care system in spite of the increasing number of female doctors. Work done: This study found gendered structures in Korean health care system through in-depth interviews. The socio-economic status of female doctors compared with that of male doctors was found through a survey. The interviews and survey were conducted in general and university hospitals, in Busan and Seoul, Korea. A total of 311 doctors who were medical specialists or professors responded to questionnaires.

Work done: The presentation describes the performance concerns of a consecutive series of 123 psychiatrists referred to NCAS for advice in the period October 2004-March 2006. Baseline characteristics of the cases are presented including age range, specialty, grade and employment status. The performance concerns at the time of referral are classified across the General Medical Council’s Good Medical Practice domains. The presentation will describe the absolute number of concerns and the percentage of practitioners with concerns in each domain.

Conclusions: The implications of the findings for postgraduate training and continuing professional development programmes for psychiatrists are discussed. This is the first report detailing performance concerns in this way for any medical specialty group in the UK’s National Health Service workplace.
Results: The major findings are as follows. Firstly, a traditional gender division of labor is still prevalent in Korean health care system. In addition, gendered structures in Korean health care system were represented as medical socialization, male-centered apprentice systems of professional training, and informal networks. Especially, an incentive system and Kim’s plan give female candidates a disadvantage in selecting a specialty for residency. Secondly, the status of female doctors has been lower than that of male doctors.

Conclusions: (1) Gender stereotypes are persistent in medical departments, especially in surgery, and in hospital management. (2) Male doctors hold higher positions such as chiefs of staff, faculty chiefs, and final decision makers in hospital management. (3) Female doctors in hospitals receive a relatively lower level of income compared with that of male doctors. Gender-segregation in specialties was found as the major cause of the wage difference between female and male doctors.

4P/P13 Working skills, habits and styles in graduates of Medical Sciences Universities
T Khadivzadeh (School of Nursing and Midwifery, Mashad University of Medical Sciences, Ebne Sina Street, Doctora Crossroad, Mashad, 91374, Iran)
Background: The skills that workplaces want go beyond academic competencies and employers want “high performance” employees. Working is a diagnostic and prescriptive tool in this regard. The aim of this study was to determine the working skills, habits and styles of academic employees working in governmental or private settings in Mashhad in 2005-2006.

Work done: 706 workers in hospitals, health centers or private settings were selected and completed the “Working” tool including 9 Likert type scales.

Results: There was no relationship between age and gender with working skills, habits and styles. The scores of 6 of 9 scales were different between different academic majors. Working experience was in negative correlation with all the working scales that were significant with scales of: “working in team”, “persisting” and “life long learning”.

Conclusion: Negative correlation of working experience with working scales is different from previous studies and the general idea that most employees acquire better working skills during working experience.

Take-home messages: These competencies can be taught during in-service education programs. The Working instrument can be applied to identify areas in which employees need to enhance their effectiveness and workplace success.

GIME
4R Good Ideas in Medical Education (GIME) 1: The curriculum
For abstracts see session 2R.

Short Communications
4S Use of portfolios in postgraduate medical education

4S/SC1 e-Portfolios and the healthcare professions - can one system cater for all?
Karen Beggs*, Alex Haig, Neil McManus, Tim Brown (NHS Education for Scotland, 11 Hill Square, Edinburgh, EH8 9DR, United Kingdom)
Background: Since being piloted with 400 foundation (pre-registration) doctors in 2005 the NHS Education for Scotland e-Portfolio has been adapted for a number of other healthcare professionals including trainee dentists, qualified pharmacists, trainee general practitioners, trainee paediatricians and dental practice staff. The e-Portfolio provides frameworks for reflective learning, summative and formative assessment, competencies and curricula. Can one system really meet the needs of such diverse professional groups? Are the expectations and learning requirements of doctors, dentists, pharmacists and other healthcare staff fundamentally the same?

Work done: This presentation will describe the overlapping and unique requirements of each professional group using the NES e-Portfolio. Drawing on data from over 20,000 users, case studies will be used to illustrate the potential of the e-Portfolio to support learning, assessment and the demonstration of competency across the health professions. Particular attention will be given to the role of the e-Portfolio in supporting competency frameworks, curricula, interoperability with managed learning environments, reflective learning and ownership.

Conclusions: The multi-professional e-Portfolio model has been demonstrated to be an efficient and adaptable pedagogical system that can support not only the needs of the learner but also of the organisations responsible for ensuring training standards are met.

Take-home message: Although the needs of the different professional groups are diverse, the fundamental requirements of an e-Portfolio are closely related and sometimes identical.

4S/SC2 Providing electronic feedback on electronic portfolios: the perspective of the tutors
Ann Dekelelaere*, Nathalie Druine, Jan Degryse (Faculty of Medicine, Katholieke Universiteit Leuven, Herestraat 49, bus 400, 3000 Leuven, Belgium)
Background: An electronic portfolio was introduced to support personal reflection and professional growth of aspiring GPs. This portfolio was embedded in a support system. Tutors read the portfolio and formulated e-mail feedback.

Research question: do the tutors perceive (a) the electronic portfolio, and (b) the electronic feedback as positively in supporting the students?

Work done: A semi-structured interview (40 minutes) was held with the 14 tutors about their perceptions and experiences with the portfolio and the electronic feedback format.
Conclusions: The electronic portfolio format is not a time-saving arrangement. The advantage of being able to read/provide feedback at any time/place does not compensate for the disadvantages of not having face-to-face contact. Writing down the feedback forces tutors to spend more time on accurately formulating. The major disadvantage, however, is that they don’t have any idea of how their feedback is perceived by the students and whether they consider it supportive. The lack of dialogue (one-way feedback) in the long run makes tutors’ doubt the relevance and impact of their efforts. Minor disadvantages were the problems with the electronic support application.

Take-home messages: Face-to-face contact is indispensable to effectively support professional development and cannot be replaced by electronic feedback.

4S/SC3 Using e-portfolios to evaluate supervisory competence – experience from a VLE for clinical psychology supervisors
Dr Gellisse Bagnall (NHS Education for Scotland, 2 Central Quay, 89 Hydepark Street, Glasgow, G3 8BW, United Kingdom)

Aim: to discuss feedback from students and assessors on the use of e-portfolios as a learning and assessment tool for accredited supervisor education.

Background: Since 2005, NHS Education for Scotland has been running a CPD ‘Module’ for new supervisors in Clinical Psychology. This comprises 50 hours of blended learning study, spread over six months and combining face-to-face and online learning at a distance. The online component promotes reflective learning to establish theory to practice links during the experience of supervising a clinical trainee. All course participants maintain a private online reflective journal during the six months. They also gather evidence of developing supervisory competence for a portfolio which is submitted for external review at the end of the module, matching each piece of evidence explicitly against 12 statements of supervisory competence.

Results: Over 60 new supervisors have completed/are currently completing the Module. Systematic evaluation has included feedback about the use of portfolios as evidence of developing competence. Positive feedback suggests that the process is perceived as useful in structuring learning, while negative comments include the amount of time required.

Conclusions: Will consider how e-portfolios can best be used to promote learning at the same time as evaluating competence.

4S/SC4 Portfolio as a tool to document and mark out stages of development of post-graduate students’ competencies
Daphné Girardot*, Marie-Josée Dupuis (Université de Montréal, C.P. 6128 Succ. Centre-ville, Montréal, Québec, H3C 2J7, Canada)

Background: The postgraduate program in gynecology-obstetrics of the University of Montreal is competency-based. Competency assessment should be authentic, developmental, qualitative and respect individual progression. An electronic portfolio was implemented to document the development of competencies during the residency.

Work done: An electronic portfolio was designed to document the progression of 7 competencies. The portfolio includes 6 sections: (1) description of performance criteria for each competency; (2) description of a good performance; (3) description of a bad performance; (4) description of critical incidents; (5) self-assessment; and (6) feedback. Residents are asked to provide reflexive comments on their progression and report critical incidents which lead them to test and significantly improve their competencies. Content analysis of residents’ comments will serve as data sources to identify key stages of development for each competency.

Conclusions: Identification of key stages of development of residents’ competencies should provide relevant data for the elaboration of a rigorous and valid competence assessment system.

Take-home messages: In an iterative approach, portfolio can be used to (1) help residents to document their progression across competencies and (2) serve as a research tool in a process of competence assessment improvement.

4S/SC5 The Competence portfolio – a tool to facilitate competence development
Hans Hjelmqvist*, Turid Stenhagen, Thomas Zilling, Fredrik Åberg, Jessica Sveors (Swedish Medical Association, PO Box 5610, Stockholm, SE-114 86, Sweden)

The Swedish Medical Association has, together with the Swedish Medical Society, created a portfolio system with the purpose of facilitating competence development throughout the entire career as a physician, from basic education to retirement. The system is offered to all members of the Swedish Medical Association and the Medical Society and has been in use since March 6 this year. The system contains the following functions: Documentation of (1) training plans with visualisation of goal fulfilment; (2) training activities including clinical work; (3) guidance discussions/appraisal discussions; (4) list of qualifications/CV. The system includes possibilities to communicate with tutor/supervisor and with principal, who can be given the qualifications to sign agreements and achievements in the training plan. The portfolio system has been produced as a teaching aid for the individual physician and as a method to secure competence development for the medical profession as a whole. The Swedish Medical Association will make a short presentation of the system together with an early follow-up of the initial experiences.

Short Communications

4T Clinical teaching and learning 2

4T/SC1 Key factors in bedside teaching – a model of the process
Yousef Al-Weshahi*, Dwight Harley, David Cook (University of Alberta, Division of Studies in Medical Education, 2-76 ZLC, Edmonton, Alberta, T6G 2X8, Canada)

Background: Several authors have attempted to create a model for an effective process of bedside teaching. In particular, the model suggested on a priori grounds by Cox (sequence of eight articles in Med. J. Aust. 1993) has proved to be popular.
4T/SC2 Proficiency based learning as a predictor of the retention of a technical surgical skill
Heather Carnahan*, Adam Dubrowski (Department of Surgery, University of Toronto, The Wilson Centre, 200 Elizabeth Street, Eaton South 1-359, Toronto, Ontario, M5G 2C4, Canada)
Background: A debate is emerging regarding the efficacy of proficiency based versus duration based training of technical skills. It is not clear whether a) the performance level attained at the end of variable duration practice, or b) the overall amount of practice performed during learning will best predict the retention of a technical surgical skill.
Work done: Forty undergraduate medical trainees practiced a knot tying skill and terminated their practice sessions when they felt they had achieved proficiency. Motion efficiency and expert based evaluations were quantified one week later in a retention test. Better retention performance was associated with reaching a higher criterion at the end of practice. The amount of practice performed was not predictive of retention performance.
Conclusions: This project was based on a basic theory building study from our lab, and was followed by this applied study with medical students. Both studies showed retention benefits to proficiency based training. The next step in this progression will apply this theoretical framework and paradigm to examining the learning of more complex skills and tasks in a population of surgical residents.
Take-home message: Proficiency based training programs are effective in the acquisition of fundamental technical skills to medical students.

4T/SC3 Advanced Life Support Courses; effect on short-term and
danish education, Rigshospitalet, Denmark, Rigshospitalet, afsnit 5404, Teilmbygningen, Blegdamsvej 9, 2100 København Ø, 2100, Denmark)
Background: Doctors at different educational levels attend European Resuscitation Council (ERC) Advanced Life Support (ALS) Course. The aim is to study the effect of a standard ALS-course on short-term and long-term ALS-competence in recently graduated doctors.
Work done: This is a randomized pretest-posttest control group study with follow up at 6 months. The intervention group received a standard ALS Course. ALS-competence in the intervention group was assessed at baseline, following the intervention (posttest) and at 6 months (follow-up). ALS-competence in the control group was assessed at baseline and at 6 months.
Results: 154 accepted the invitation and were randomized to two groups. The intervention group and the control group were equally competent at baseline assessment, p=0.336 and equally confident, p=0.835 (independent samples t-test). The intervention group had significant short-term increase in competence following the ALS-course, p<0.001 and a significant short-term increase in confidence, p<0.001 (paired samples t-test). At follow up there was significant difference in mean difference (Baseline-follow-up) between the groups in both competence, p<0.001 and confidence, p<0.001 (independent samples t-test).
Conclusion: Participation in an ALS-course before clinical work significantly increases short-term but also long-term ALS-competence and confidence in resuscitation knowledge and managing emergency cases.

4T/SC4 Expanding the contribution of patients in medical education: views and experiences
Naomi D Quinton*, Vikram Jha, Hilary L Bekker, Trudie E Roberts (University of Leeds, Medical Education Unit, Level 7, Worsley Building, Leeds, LS2 9JT, United Kingdom)
Background: The patients’ role in educating doctors has moved from being the exemplar of clinical symptoms to the provider of expertise in illness experience. Current initiatives suggest the patients’ role should be more involved, i.e. the patient-as-teacher. This study investigates views on the roles of patients as teachers in medical training.
Work done: A cross-sectional survey employing focus groups; three groups with undergraduate medical students (n=31), senior clinical academic staff (n=9), and non-clinical specialists in medical education (n=9). Thematic content analysis was applied to the focus group transcriptions. Six broad themes emerged from the data: good practice for teaching, that was completed by one hundred and seventy four clinical experience, that was confirmed by these observations, it seems likely that the sequential and systematic approach to bedside teaching suggested on theoretical grounds, corresponds well to the experience of students. The use of this approach may be beneficial in planning future programs of bedside teaching.
4T/SC5 A qualitative study of students’ feelings and experiences upon meeting their clinical supervisors and starting their first clinical attachment
Jonathan Myers*, Elspeth Alstead (Whipps Cross University Hospital Medical Education Centre, Whipps Cross University Hospital, Whipps Cross, London, E11, United Kingdom)
Background: Despite modern changes in many medical schools there still remains a “big day” when medical students start their first clinical attachment. This may be a day that students were waiting for or it may be a day they were dreading. As clinical teachers we aim to understand the students’ ideas, concerns and expectations surrounding their first attachment.
4U/SC1 Threats to well-being during residency training: prevalence of intimidation, harassment, and discrimination

O Szafrań*, R A Crutcher, W Woloschuk, P W A Humphries, D Kreptul (University of Alberta and University of Alberta, Department of Family Medicine, 205 College Plaza, Edmonton, Alberta, T6G 2C8, Canada)

Background: Few Canadian studies have examined resident well-being. As part of a survey of family medicine residency graduates, we examined the degree to which residents perceived incidents of intimidation, harassment and/or discrimination during their two year residency program.

Work done: A cross-sectional survey was conducted of 389 graduates of two academic Departments of Family Medicine in the province of Alberta, Canada, during 2001-2005. The survey section on intimidation, harassment, and discrimination, addressed issues related to the type, source, frequency and perceived basis of these incidents.

Results: Preliminary findings are based on a crude response rate of 219 (56%) respondents. Overall, 45.7% of graduates experienced some form of perceived mistreatment/harassment, mainly in the form of inappropriate verbal comments (96.8%), work as punishment (29.5%), or privileges or opportunities being taken away (17.9%). Sources of intimidation, harassment or discrimination were specialist physicians (81.1%), hospital nurses (56.8%), residents in specialty programs (49.5%), or patients (34.7%). Canadian graduates believed that the intimidation was primarily gender based (p=0.006), whereas international medical graduates believed the basis to be ethnicity or culture (p=0.003).

Conclusion: Intimidation, harassment and/or discrimination occur during residency training.

Take-home message: Family medicine residency programs should continue to vigorously promote resident well-being.

4U/SC2 The Department in Difficulty – junior doctors can make a difference when re-thinking postgraduate training

Rikke Brandt*, Carsten Hering Nielsen, Peder Charles (Centre for Postgraduate Medical Education - CEPOME, University of Aarhus, Victor Albeck Building - University Park, Aarhus, DK-8000, Denmark)

Background: The term 'Department in Difficulty' is introduced as the parallel to 'Student in Difficulty' and is widely used and acknowledged as an important area of research in medical education. Addressing and identifying difficulties in a constructive manner, junior doctors made a huge difference by engaging themselves in the process of resolving them.

Work done: Within the existing framework of financial and human resources available for postgraduate training in a university hospital department setting, the project purpose was to (1) identify and address areas for potential improvement; (2) demonstrate the importance of leadership involvement. At AMEE 2006 the TIPS-approach was introduced; addressing the Tone – Introduction – Planning and Showing off (I) training in everyday work. The model was scrutinized and further developed, and presented to the medical staff in close collaboration with the department head.

Conclusions: Good training environments are the responsibility of all medical staff. It is in the young doctors' own interest to initiate improvements when experiencing lost potential training situations.
4U/SC3 Trainee medical errors – results of a UK wide survey
Heather Payne*, Daniel Smith, Elisabeth Paice (Wales School of Postgraduate Medical and Dental Education, Unit 15, Cardiff Medicentre, Heath Park, Cardiff, CF14 4UJ, United Kingdom)

Background: Medical errors by postgraduate medical trainees are inevitable, and are variously categorised and attributed. This study explores the reporting of errors by UK postgraduate medical trainees using data from a UK-wide survey.

Work done: All postgraduate medical trainees in the UK were surveyed in the Summer of 2006 as part of the UK regulator’s quality assurance programme, in total 24,800 responses were received (65% response rate). Respondents were asked ‘have you made a serious or potentially serious medical error in the past month?’ possible responses no/yes once/yes more than once/don’t wish to answer.

Conclusions: Emergency Medicine trainees reported more errors (16.8%) than other specialties (9.3%). Trainees completing the survey via an anonymous route reported more errors than those using routes perceived as less anonymous. Trainees reporting a more complete induction, better clinical supervision and no work overload were less likely to report making a medical error. Trainees in a job offering plenty of experience were more likely to report making errors.

Take-home messages: Postgraduate medical trainees are more likely to report errors anonymously. Effective educational practices supported by employment policies are required to ensure safe trainees. Postgraduate medical education should harness the educational and patient safety benefits of error reporting by trainees.

4U/SC4 A stakeholder analysis to explore the impact of the European Working Time Directive on postgraduate medical education in the UK
J Clarke*, K Farrell, C Voelklein, F Patterson, M Bannon, H Davies (Sheffield University, Academic Unit of Child Health, Stephenson Building, Western Bank, Sheffield, S10 2TH, United Kingdom)

Background: Implementation of the European Working Time Directive (EWTD) has restricted the hours worked by junior doctors, leading to widespread concern about the delivery of quality training. This project aims to explore the impact of the EWTD on postgraduate training in the UK and to determine how best to optimise training in the context of reduced hours.

Work done: Stakeholder analysis was undertaken. Focus groups and semi-structured interviews with trainers, trainees and EWTD leads were conducted. Thematic analysis was undertaken and triangulated with reviews of relevant medical and organisational psychology literature.

Conclusions: Two broad themes emerged, organisational factors (eg. fragmentation of service provision, altered team structures, disincentives for trainers to train) and training issues (eg. the need for trainee initiative for on-the-job training, effective under-utilised training methods). Solutions included the promotion of a positive training climate (organisational culture) and the effective use of short “just-in-time” learning opportunities. The need for protected training time, especially for technical skills, was highlighted.

Take-home messages: A multi-dimensional model encompassing a training-orientated organisational culture which empowers trainees to maximise learning opportunities as well as using emerging technologies could provide quality postgraduate medical education and comply with EWTD.

4U/SC5 Supporting poorly performing junior doctors: a multifaceted approach
Fiona Anderson (NHS Education for Scotland, Postgraduate Office, Level 7 Ninewells Hospital, Dundee, DD1 9SY, United Kingdom)

Background: It is widely recognised that a small number of new medical graduates will experience some difficulty during their first postgraduate year of clinical training. This presentation focuses on the complexity of their problems and proposes a multifaceted approach to supporting these doctors.

Work done: For several years the East Deanery, Scotland have utilised a range of tools to support doctors in difficulty. These include: multi-sourced feedback, educational sessions, ward simulation exercises, targeted clinical training, a knowledge test and other tools that will be described. Specific tools are selected and used in a manner appropriate to address the problems identified and the needs of the trainee. These tools alone, although essential, are only part of the management of poor performance. Other aspects of the trainee’s work environment require consideration e.g. level of responsibility and supervision. A range of options might include: supernumerary posts, a change in clinical environment and supervision. Matching the tools and approaches with individual trainee’s needs is both complex and challenging. Case studies to be described show that our multifaceted approach is supportive and provides a range of evidence of performance.

Conclusion/Take-home messages: Our experience has shown that although this approach can be time-consuming, complex and difficult to organise, it works.

4U/SC6 Improving palliative care in a graduate medical training program: initial results of a trainee designed intervention
Bryan Jarabek*, Abdi Jama, Sue Ruegg, Tim Moynihan, Furman McDonald (Mayo Clinic Rochester, 200 First Street SW, Rochester, MN 55901, United States)

Background: Care of terminal patients in hospital is often inadequate for symptom palliation.

Work done: As part of a trainee initiated quality improvement project, 148 internal medicine residents at Mayo Clinic were surveyed regarding their comfort with 9 evidence based aspects of palliative care. The mean comfort with all issues was 54% (range 41% - 76%). To better educate our residents and care for our dying patients we implemented an evidence based comfort care order set with instructional template for staff and residents regarding use of the order set and relevant literature.

Take-home message: Deficiencies between intended and practiced training efforts should be immediately addressed by young doctors. It is imperative that suggestions and initiatives to prevent them should be supported and appreciated by management as they improve the department’s overall reputation and quality. It pays off not to settle for less.
4V/SC1 Comparison of medical students’ perceptions of their surgery training: Israelis versus Americans
Netta Notzer*, Ruth Abramovitz (Sackler Faculty of Medicine, Tel Aviv University, P.O.B. 39040 Tel Aviv, Israel, 69978, Israel)
Background: At our Faculty of Medicine two programs-of-study exist: A 6-year curriculum program for Israeli students and a 4-year curriculum program for American students. This situation provides an opportunity to look at students’ perceptions of their training deriving from different cultural backgrounds.
Work done: We used an identical Hebrew/English questionnaire at the end of the surgery rotation in 2006 and compared the responses of 50 American students versus 50 Israeli students, trained in the same 8 departments by the same 101 physicians. We analyzed their ratings for ‘the contribution of the rotation’ to their medical training and ratings of 5 dimensions for each instructor: (1) His general contribution; (2) Presentation of theoretical material; (3) contribution to the clinical training; (4) Instructor’s relationship with students; (5) Availability to the student.
Results: American students rated consistently higher the contribution of the surgery rotation to their training but significantly under-rate their instructors’ teaching along all 5 dimensions. No difference was found regarding the correlation between assessments and the amount of hours each physician spent with students.
Take-home message: Students’ expectations, differences in the career-choice and opportunities in the two countries can explain the findings. These results and explanation need further investigation.

4V/SC2 Palliative care education: comparative analyses of international efforts
C Ferris, P B Mullan* (University of Michigan Medical School, Department of Medical Education, G1116 Towsley Center, Ann Arbor, Michigan, 48109-0003, United States)
Background: International health service research studies continue to find that patients at the end of life suffer from inadequate care. Too often, patient preferences for care are not elicited or honored; patient suffering, which existing medical care resources could resolve, remains unalleviated. Integrating end-of-life care education into existing medical training programs requires knowledge of what physicians know and believe they can or should do to care for patients at the end of life.
Work done: This study draws on palliative care education research in the United States, in which assessment measures and associated benchmarks for medical faculty and residents’ palliative care knowledge, concerns, and self-assessed competency levels, were identified. These measures were used as pre- and post-assessments of faculty participating in a palliative care education program in Jordan, Salzburg and Mongolia, collaborating with the WHO Collaborative Centre for Palliative Care.
Results: Statistically significant differences following the educational intervention were documented in palliative care knowledge (t=-16.6, p<.00, 95% CI -6.3,-4.9) and self-assessed competence (t=-23.2, p<.00, 95% CI -1.2, -1.0) in physicians participating in palliative care education.
Conclusions: Sharing and adapting educational interventions and assessment measures can guide international efforts to adopt and evaluate key medical educational efforts.

4V/SC3 FAIMER Education Programs: five year impact
William Burdick*, Page Morahan, Summers Kalishman, Stewart Mennin, Maryann Eklund, Debbie Diserens, John Norcini (Foundation for Advancement of International Medical Education and Research, 3624 Market Street, 3rd Floor, Philadelphia, PA, 19104, United States)
Background: Education programs of the Foundation for Advancement of International Medical Education and Research were created five years ago and the early indicators of their impact are now being measured. Programs include the FAIMER Institute, a two year part-time Fellowship in health professions education and leadership, FAIMER Regional Institutes, located in India and Brazil, and International Fellowships in Medical Education, a scholarship program funding Masters in Health Professions Education.
Work done: Fifty-five Fellows from 20 countries have completed the FAIMER Institute program, and 11 have received scholarships to attend distance learning Masters programs in medical education. Four Regional Institutes have included a total of 114 Fellows. The evaluation employs surveys and interviews of Fellows, beginning with the first FAIMER Institute class of 2001.
Conclusions: Data from survey and professional network analysis show significant increases in knowledge, skills, and network effectiveness. Qualitative analysis of interview data indicates use of education methods and leadership tools developed at FAIMER programs. An additional measure of impact is the high level of Fellows’ professional accomplishment after the fellowship experience.
Take-home messages: An education program incorporating an authentic education project and using an interactive methodology appears to have an important impact on health educators.
**4V/SC4** Postgraduate Medical Education (PMED) Project – a comprehensive web-based international directory

Frank A Simon*, Gerald P Whelan, Danette McKinley, John J Norcini (Foundation for Advancement of International Medical Education and Research (FAIMER), 3624 Market Street, Philadelphia, PA, 19104, United States)

Background: Advances in medical knowledge require that education and training continue beyond medical school in programs of postgraduate medical education that follow and build on fundamentals established in medical school. Increasingly, physicians migrate to pursue career and education goals. Currently, there is limited information available on the scope and types of postgraduate training available in different countries, as well as how training is organized and monitored.

Work done/Results: FAIMER staff has gathered information from 38 respondents in 23 countries regarding the nature, structure, and organization of postgraduate medical education. Considerable variation in responses received within and between countries indicated that additional investigation is essential. Collaborative efforts with other organizations have resulted in revisions to surveys and database design.

Conclusions: A dynamic resource providing information on postgraduate medical education in various countries would be of great value to the global medical community. Development of a web-based resource could facilitate research on comparability of postgraduate medical education and training, assist in developing and optimizing programs, and support policy decisions regarding the global physician workforce.

Take-home messages: Resources on medical education worldwide would contribute to research on the comparability of medical education experiences. Completing this challenging project requires international partnerships and collaboration.

**4V/SC5** Accreditation processes throughout the world: The FAIMER directory of organizations that recognize/accredit medical schools

Marta van Zanten*, John J Norcini, Frank Simon (FAIMER/ECFMG, 3624 Market Street, Philadelphia, PA, 19104, United States)

Background: Migration of physicians, combined with the recent growth in the number of international medical schools, has created a global interest in accreditation as a way to ensure the quality of undergraduate medical education.

Work done: The FAIMER directory of organizations that recognize/accredit medical schools includes information on 75 entities that certify or authorize undergraduate medical education programs in the country in which the schools are located. Forty-four percent of the authorities are independent entities and 56% are government affiliated. Most countries report that the process is mandatory (78%), although some have a non-compulsory system. A limited number of countries have a voluntary, independent process in addition to a mandated, government accreditation authority.

Ongoing research entails gathering more detailed information about the various quality assurance methods; including describing the standards employed, evaluation protocols, length and levels of accreditation, and the outcomes of accreditation. We are also gathering specific accreditation information for over 2,000 medical schools.

Conclusions/Take-home messages: As part of FAIMER's mission to inform the development of health care policies around the world, we will continue to update and expand the directory, including information on accreditation procedures and standards. This resource is freely available on the FAIMER website.

Jason R. Frank*, on behalf of the CanMEDS 2005 Working Groups (Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, Ontario, K1S 5N8, Canada)

Background: Competency-based education has received increasing interest in medical education in recent years. Calls for greater patient safety, effective care, improved communication, humanism, professionalism, efficiency, and maintenance of competence, among other issues, have led to an outcomes orientation in an era of greater accountability. The RCPSC's CanMEDS initiative began at the beginning of the 1990s to specifically address the effectiveness of medical education by identifying the essential competencies physicians need to meet societal needs. The CanMEDS 2000 framework was accepted by the RC Council in 1996 and implemented across Canada and around the world.

Work done: In 2003, the Royal College commissioned eight working groups to reexamine the seven CanMEDS Roles (Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional) and update their wording. A consensus process involving a review of recent literature and issues changed the framework. We present the updated framework of physician competencies, CanMEDS 2005, and detail the major revisions and their implications for medical education.

Conclusions/Take-home messages: The CanMEDS framework has been updated to reflect current and emerging issues in medical education, and can serve as a foundational framework for competency-based education.

4W/SC4 Leveraging technology standards to facilitate mapping content to competencies and outcomes

Rosalyn P Scott*, Valerie Smothers, Chris Candler (MedBiquitous Consortium, 4265 Marina City Dr. #901, Marina Del Rey, California, 90292, United States)

Background: Medical education and specialty certification are moving to outcomes and competency-based assessment strategies. The challenge is how to track effectively learning activities and proficiencies against frameworks, such as the Scottish Doctor Learning Outcomes and the US ACGME Core Competencies. The frameworks themselves are often text-based and not easily imported into/across competency-based assessment systems in predictable ways.

Work done: MedBiquitous Competencies Working Group is developing XML standards that would enable tracking and sharing education, performance and assessment information within and between competency frameworks. To take advantage of industry work underway, the Group is collaborating with other standards and specification developers, e.g., IEEE and HR-XML. Use cases are being developed as exemplars to define a model for describing, referencing and exchanging competency data. Additionally, MedBiquitous and Oregon Health and Sciences University have tested a search system for connecting learning resources and competencies as part a US National Library of Medicine funded project.

Conclusions: Technology standards are needed to facilitate the mapping of learning activities to competencies and outcomes. Standards also enable the delivery of learning content based on identified gaps in competency.

Take-home messages: Leverage technology standards for competencies where feasible and participate in relevant standards development efforts.

4W/SCS Successful approach to the development of an integrated outcome-based curriculum

Claude Mailhot (Faculté de Pharmacie, University of Montreal, P.O. Box 6128, Succursale Centre-Ville, Montreal, Quebec, H3C 3J7, Canada)

Background: Based on a relevance and feasibility study involving major stakeholders, the Faculté de pharmacie engaged in the development of an integrated outcome-based curriculum.

Work done: Program development involved several steps with constant interaction between clinicians and Faculty members. First, we determined fundamental program characteristics including: an outcome-based curriculum; the migration to active learning strategies; the creation of interdisciplinary activities; and a more intense experiential program. Next, we defined the competency profile of the future pharmacist. We identified the following nine outcomes (general and professional) to be mastered by graduates: professionalism, communication; teamwork and interdisciplinarity; scientific reasoning and critical thinking; self-directed learning abilities; leadership; pharmaceutical care; community services; and management and operations. The next step was to make an inventory of all cognitive material essential for each outcome development including knowledge units, skills and attitudes. This material was then reorganised under annual themes. Knowledge mapping procedure was used to design learning modules.

Instructional design for each integrated course will be performed by multidisciplinary teams which includes a clinician.

Conclusion: Our successful and structured approach to program development was based on active participation of Faculty members and clinicians working in multidisciplinary teams.

Take-home message: Outcome-based curriculum needs fundamental structure revision.
4X/SC1 “And the Oscar goes to…” – lessons learned from interviews with teaching-award winners
D Schricke*, P Kraft, S Reinsch (Fachschaftsinitiative Medizin der Charité, Hexenhäuschen, Charitéplatz 1, Berlin, 10117 Berlin, Germany)
Background: At Charité Medical School, an award for the best teacher is assigned by the students of each year. The winners stem from both sexes, all ages and academic titles, and differed in their acquired teaching experience. We further wanted to know whether there are common characteristics in teachers rated as outstanding.
Work done: To answer this question we interviewed 20 award-winners with the help of a semi-structured questionnaire. We asked questions on their role-models, personal engagement, ability to explain and what according to their opinion defines an outstanding teacher. In a second step we interviewed students and presented them the self-appraisal of their teachers in order to validate statements concerning talent, motivation and charisma.
Conclusions/Take-home messages: The self-assessments were overall congruent with the students’ view. Results will be reported. Our present results suggest that high-quality teaching is mostly influenced by the teacher’s personal experiences. Development of a “teaching culture” is a process that requires continuous efforts.

4X/SC2 The development of a clinical teaching feedback instrument
Mark Oliver, Sally Corbett*, Roger Barton, John Spencer (North Tyneside General Hospital, Education Centre, North Shields, Tyne and Wear, NE29 8NH, United Kingdom)
Background: We wished to develop an instrument to provide feedback to clinical trainers based on the consideration of a single teaching episode. The instrument compares performance in a number of areas with a normative sample of clinical training sessions.
Work done: We have constructed a questionnaire based on behaviours associated with effective clinical teaching. Approximately half of the items were derived from published clinical training assessment tools, while the remainder were derived from work within our department, utilizing the experiences of our medical staff and students. The prototype tool has been used to construct a normative database of real-life teaching sessions based upon the ratings of learners and the self-assessments of trainers. The behaviours have been factor-analyzed to reveal the underlying teaching characteristics. Item reduction has produced a more streamlined instrument.
Results: This instrument allows us to analyze the teaching behaviours associated with a particular teaching session. Feedback is in the form of a percentile rating for each of the teaching characteristics, with a breakdown of where marks were gained and lost, allowing trainers to see which behaviours they may wish to incorporate into their teaching.
Conclusions: Our prototype assessment instrument provides formative feedback to clinical teachers and with further development may have wide applicability.

4X/SC3 Using peer-observation to improve teaching quality in the pre-clinical years
Tim McMahon*, Hemal Thakore (University College Dublin, School of Medicine & Medical Science, Health Sciences Centre, Dublin 4, Ireland)
Background: Peer-observation of teaching is a common quality improvement strategy in medical education. However, many supposedly “peer”-observations are not genuine interactions between equals because of a disparity of power between observer and observed. Typically, the latter have more to lose because a judgement is being made on their teaching that could adversely affect their career. Consequently, there is a strong imperative for teachers to ensure that they are observed in situations where they can “showcase” existing strengths and to avoid observations of situations where areas of developmental need might be exposed. This is the exact opposite of what should happen if peer-observation is to be used to improve the quality of teaching rather than to simply demonstrate that a certain level of competence already exists.
Work done: The authors applied a model of peer-observation to the early years of an undergraduate medical degree that was specifically designed to ensure genuine equality in power between observer and observed.
Results: The protocols of the model enabled teachers to feel confident in exposing areas of weakness to a trained observer and to implement a subsequent self-improvement plan informed by the observation feedback.
Conclusion: When using peer-observation of teaching for quality improvement, it is both possible and beneficial to switch the contextual imperative from one that encourages showcasing of strengths to one that encourages teachers’ subject areas of weakness to scrutiny by peers and use the professional dialogue that follows for self-improvement.
Take-home message: The model presented is an effective quality improvement tool.

4X/SC4 Development of an instrument for evaluating the clinical teacher
R E Stalmeijer*, D H J M Dolmans, H A P Wolffhagen, A J J A Scherpbier (Maastricht University, Department of Educational Development and Research, PO. Box 616, 6200 MD Maastricht, Netherlands)
Background: During clinical rotations medical students are supervised by physicians. Medical practice has always strongly emphasised the ‘traditional apprenticeship model’ of clinical training where students mainly learn by observing physicians in practice. However, research has indicated that effective learning in practice is dependent on active involvement of students and deliberate attention to the underlying cognitive processes of tasks. This so-called cognitive apprenticeship approach requires strong supervisory skills. We developed a questionnaire to provide physicians with feedback on these skills.
Work done: Content validity of the questionnaire was established by asking several stakeholders, i.e. 16 physicians, 12 senior students and 10 educationalists to rate the relevance of each item (N=30) on a 5-point Likert scale (1= highly irrelevant, 5= highly relevant). The stakeholders were also asked to make suggestions for improving the questionnaire.
Results: Most items were considered relevant to highly relevant by all the stakeholders (Mean 4.3, SD 0.38). Some differences were observed. For example modelling was considered less relevant by the students than by the physicians (T= 4.67, p=.00). Based on the participants’ feedback the wording of several items was altered and 5 items were eliminated.

Conclusions: The questionnaire will be used to further investigate the cognitive apprenticeship model in the clinical context.

4X/SC5 Developing a comprehensive framework of undergraduate medical teaching activities

Terese Stenfors-Hayes*, Michael T Rossi (‘Department of LIME, Karolinska Institutet, Stockholm, Sweden; ‘Medical Teaching Organisation, The University of Edinburgh, UK (The University of Edinburgh, The Medical Teaching Organisation, 49 Little France Crescent, Edinburgh, EH16 4SB, United Kingdom))

Background: This presentation details the development of a comprehensive yet generic framework of medical undergraduate teaching activities. The project arose in response to needs identified in medical teacher-training and curriculum development around medical students learning to teach.

Work done: A provisional framework of teaching activities and a model of learning and teaching were developed iteratively through literature review, consultation and reflection on practice. The framework and model were then methodically tested using journal analysis, brainstorm sessions and focus-group interviews with medical teachers and medical teacher-trainers.

Results: Data were analysed and used to synthesise a new and comprehensive framework of undergraduate medical teaching activities and to slightly adjust the model. The resulting framework consists of 15 generic teaching activities arranged in three thematic groups. The new framework and model of learning and teaching are now successfully being used in medical teacher-training, undergraduate teaching and as an organisational structure for electronic teaching resources.

Conclusions/Take-home messages: The framework of undergraduate medical teaching activities and the learning and teaching model seem to be comprehensive of all teaching activities reported by the medical education literature and by teachers of medical undergraduates themselves; and seem to be acceptable and useful tools to describe and facilitate reflection upon medical teaching activities.

4Y The student in difficulty

4Y/SC1 Risks for clinical failure – strategies to facilitate academic success

Ewa Szumacher*, Cate Palmer, Fiona Cherryman, Renate Bradley, Peter O'Brien, Pamela Cotton (‘Department of Radiation Oncology, Sunnybrook and Women's College Health Sciences Centre, University of Toronto, 2075 Bayview Avenue, MANUMS, Ontario, Canada; ‘Department of Radiation Oncology, Princess Margaret Hospital; ‘Medical Radiation Sciences Program at University of Toronto and the Michener Institute for Applied Health Sciences; ‘Department of Radiation Physics, University of Toronto)

Background: Clinical teachers often work with undergraduate students whom they view as “difficult”. The goal of this presentation is to describe a framework for identifying students’ problems and to outline strategies for intervention for students who are at risk for clinical failure within MRSP. The faculty members should try to confirm their suspicions by determining the students’ perception of the problem, relevant life history, and perceived strengths and weaknesses. In designing an intervention, teachers should carefully define the goal and time frame of the intervention, determine how the problem will be addressed, and decide how the intervention will be documented and evaluated.

Work done: The author will describe the magnitude of clinical remedial education within the 89 remedial undergraduate students' cohort within the Medical Radiation Sciences Program and the Michener Institute for Applied Health Sciences, University of Toronto, from 1999 to the present.

Based on a retrospective database, the author will discuss strategies for students who experienced serious clinical remediation and will present challenges to remedial medical education.

Conclusions: A detailed analysis of the six students who were dismissed from the program due to unsuccessful clinical remediation will be presented.

Take-home message: Clinical remediation can be very resource intensive and not all remedial students can overcome their difficulties and be successful.

4Y/SC2 The effect of peer academic and social development programmes on medical students from disadvantaged backgrounds

S Veena Singaram (University of Kwa Zulu Natal, Nelson R Mandela School of Medicine, School of Undergraduate Medical Education, Private Bag 7, Congella, Durban, 4013, South Africa)

Background: Transformation in South African higher education has led to a dramatic change in student demographics. Increased access to previously disadvantaged groups was not always accompanied by strategies to provide adequate and appropriate forms of support. This was evidenced by the steady decline in graduation and poor academic records of these students in comparison with their increased numbers in higher education institutions (Favish, J. (2005) S AJHIE, 19, (2), 274-291).

Work done: Instruments were developed with consultation with student counselors to ascertain problem areas of students with poor academic performance. The main areas highlighted were personal, academic and lack of faculty support. Accordingly academic development programmes were implemented together with other initiatives which included using peer resources and academic literacy development.

Results: Preliminary focused group interviews and analysis of marks indicate an improvement particularly in the attitudes of students. Students also highlighted that they felt more motivated to learn and overcome barriers they were experiencing.
4Y/SC3  Personality traits and types predict medical school stress: a six-year longitudinal and nationwide study

Reidar Tyssen*, Filip C Dolatowski, Jan Oie Ravik, Ruth F Thorkildsen, Øivind Ekeberg, Erlend Hem, Tore Gude, Nina T Granvold, Per Yaglum. (Department of Behavioural Sciences in Medicine, Institute of Basic Medical Sciences, Faculty of Medicine, University of Oslo, PO Box 1111 Blindern, NO-0317 Oslo, Norway)

Background: Personality types (combinations of traits) taking into account the interplay between traits give a more detailed picture of an individual’s character than do single traits.

Work done: We surveyed Norwegian medical students (N = 421) one month after medical school started (T1), in the middle of the third undergraduate year (T2), and at the end of the sixth undergraduate year (T3). The responders were categorized according to the personality typology of Torgersen by their combination of high and low scores on the personality traits of extraversion, neuroticism, and conscientiousness. We studied the effects of both personality types and traits on stress during medical school.

Conclusions: There was a higher level of stress among the female students. The traits neuroticism (P = 0.002) and conscientiousness (P = 0.03) were independent predictors of stress. When controlled for age and gender, “brooders” were at risk (P = 0.02), whereas “hedonists” were more protected against stress (P = 0.001). The combination of high neuroticism and high conscientiousness is considered risk for forthcoming medical school stress.

Take-home message: Both neuroticism and conscientiousness traits should be further studied in order to define optimal levels for sound mental health and good students.

4Y/SC4  Using interactive theatre in veterinary education to promote mental health awareness

Nick Short*, Anita Lane (The Royal Veterinary College, Royal College Street, London, NW1 0TU, United Kingdom)

Background: The suicide rate amongst UK vets is almost twice that for the medical profession and four times greater than in the general population. One approach to address this issue has been to work with undergraduates to assist them in recognising the potential problems they may face in practice and how they might best respond to these challenges. Topics such as depression, addiction and suicide can be difficult to address in a conventional lecture environment. Students find such subjects uncomfortable to discuss and hard to relate to personally. In contrast, drama is able to present a range of sensitive topics and contexts in a non-threatening context which is better able to engage the audience.

Work done: The performance presented here showed the progression of a young female vet, Rachel, from carefree and able practitioner to a stressed professional contemplating serious self-harm, using a range of pedagogic and theatrical techniques.

Conclusions: Evidence from a comprehensive evaluation demonstrated that this approach was valued by students, practitioners and those involved in the policy and politics of the veterinary world. This experience could provide some pointers as to how a similar approach might be adapted for use in other educational settings such as medical undergraduate education.

4Y/SC5  Academic support for students in a problem based medical program: enhancing the self-reflective capacity of students with academic and other difficulties

Peter Davy*, Vicki Langendyk, Pippa Craig (Faculty of Medicine, University of Sydney, 2006, Australia)

Background: Staff from the medical education unit at the University of Sydney provide support for medical students experiencing academic and other difficulties.

Students sit three written formative assessments prior to attempting the summative assessments towards the end of the second year of the medical program. These formative assessments provide opportunities for students to note their own strengths and weaknesses over the breadth and depth of the curriculum. The majority of students perform at a satisfactory standard. Usually no more than 15% of the cohort receives a result in formative assessments which would suggest that they are at risk of failing the summative assessments. However, because the faculty believes that it has a duty of care to ensure adequate diagnostic and remedial support to students who may be at academic risk, this group are offered an interview with a faculty member to help diagnose problems and develop a remedial plan.

Work done: The main student support strategies include: (1) quantitative feedback on assessment results; (2) diagnostic exploration of academic or other difficulties with assessment and/or learning; (3) co-development of remediation plans. The presentation also discusses the possibility that in addition to receiving academic support, the self-reflective capacity of students may be a critical factor.

Workshop

4Z  Teaching and assessing clinical competence in non hospital settings

Bashir Hamad, Mohi Eldin Magzoub (College of Medicine, King Saud bin Abdulaziz University for Health Sciences, College of Medicine, Riyadh, 22490, Saudi Arabia)

Background: Limiting undergraduate training to hospitals may well constrict students’ experiential preparation to face real problems prevailing in the larger community and thus undermine their ability to respond to health problems prioritized by the health system. Therefore, medical schools throughout the world have extended their undergraduate training to include teaching and learning outside teaching hospitals. Among key challenges facing these medical schools is how to control training in the alternative sites and assess the students with reasonable quality. This workshop will address these issues. The workshop organizers will share their rich experience in pertinent areas in the field, but it will depend mainly on the active involvement of the participants.
Intended outcomes: (1) Identify and build on the reasons for teaching/learning in non hospital settings; (2) Organize a teaching activity for implementation in non hospital settings. (3) Identify relevant instruments for assessing students in these settings, and explore initial issues in designing them.

Structure (1) Introduction and participants’ expectations; (2) Small group work on reasons; (3) Organizing activities and discussion; (4) Student assessment – group discussion; (5) Presentation and discussion.

Intended audience: Educators at all levels.

Level of workshop: Intermediate

### Workshop

**How do I tell them that? Providing feedback about professionalism**

Reena Karani, Karen Mann, Emily Chai, Audrey Chun, David Thomas, Nisha Rughwani, Rachel Stark, Rainier Soriano, Helen Fernandez (Mount Sinai School of Medicine, 1 Gustave Levy Place, Box 1070, New York, NY, 10029, United States)

Background: Teaching and assessing professionalism is a focus in medical education curricula around the world. As educators continue to define the behaviors, skills and attitudes that constitute professionalism in medicine, innovative instructional and evaluation proposals abound in the literature. One goal of any comprehensive program in this area must be to provide feedback to those with identified deficiencies in professional behaviors. However, giving effective feedback in the area of professionalism remains a significant challenge for many educators. This interactive workshop is designed for an international audience of educators interested in developing their feedback skills about professionalism.

Intended outcomes: By the end of the session, participants will 1) identify the language and elements of feedback techniques shown to be effective from the literature, 2) practice delivering professionalism feedback to colleagues and students using designed cases, 3) reflect upon their own experiences and develop practical skills to approach challenging situations, and 4) share strategies for providing effective feedback across different disciplines and professional levels and discuss factors that might affect how feedback is received.

Structure: We will use a variety of instructional methods including small group discussion and practice during this workshop.

Who should attend/level of workshop: It is intended for educators at all levels and no prior experience is required.

### Workshop

**How to plan and conduct an institutional self-evaluation study**

Mostafa Seleem (Cairo University, kasr El Aini Medical School, 9 Ahmed el melihy-Dokki, 1121, Egypt)

Background: The accreditation process in medical education is dependent upon institutional self evaluation study which should be built around standards for accreditation.

Outcomes: By the end of the workshop the participants will: (1) Be able to recognize values, planning and conduct of a self-study; (2) Be able to identify and select the different tools and sources available to collect evidence; (3) Be able to design questionnaires and plan for focus group discussion; (4) Be able to analyse results and come to a conclusion.

Structure: The workshop will involve an interactive presentation about the definition, values, how to plan and conduct a self-study and principles of report writing. Then group work will be conducted during which WFME standards will be distributed and the participants will be asked to choose the tools needed to collect evidence for certain standards using a prepared checklist. Then they will be asked to design a questionnaire, plan for focus group discussion, determine the type of document and data base needed….etc if those tools should be chosen to collect evidence for that standard.

Intended audience: All those who are interested in and/or responsible for quality assurance in their institutions.

Level: Beginners.

### Workshop

**Actively engaging students in quality improvement**

Toni M Ganzel, David L Wiegman, Ruth B Greenberg (University of Louisville School of Medicine, 3rd Floor, Abell Administration Center, 323 East Chestnut Street, Louisville, KY, 40202, United States)

Background: Actively engaging students in quality improvement efforts to enhance the educational environment and the curriculum improves students’ satisfaction with their entire educational experience. This workshop will share five years of successful experience in such a program. Quality Improvement (QI) and its application to medical education via Process Improvement projects will be the focus. Participants will develop a template for similar projects to take back to their own schools.

Intended outcomes: (1) Participants will understand the value and key aspects of engaging students in the QI process and its application; (2) Participants will identify key success factors in implementing Process Improvement projects; (3) Participants will create a plan for implementing one or several Process Improvement projects at their home schools.

Structure: (1) Introduction/Objectives; (2) Review QI and its application to the involvement of medical students in Process Improvement projects; (3) Examples of medical student Process Improvement projects from the University of Louisville; (4) Small groups – Identify possible Process Improvement projects for your school; (5) Large group – Share the work of the small groups; (6) Summary.

Intended audience: Student Affairs and Curriculum faculty and staff; Student leaders

Level of workshop: Appropriate for all levels.
Workshop 4DD  Developing high-quality multiple-choice items to assess application of knowledge using patient vignettes

Kathleen Z Holtzman, David B Swanson (National Board of Medical Examiners, 3750 Market Street, Philadelphia, PA 19081, USA)

Content: Writing high-quality multiple choice questions (MCQs) is a challenging task. Questions often contain technical flaws that provide advantage to “test-wise” examinees and focus on relatively unimportant content. Reflecting worldwide shifts toward integrative curricula, this workshop will focus on writing multiple-choice items that assess application of basic science and clinical knowledge in patient situations. The session will cover commonly occurring item flaws, as well as item content and format, emphasizing preparation of items that assess more than recall of isolated facts. Both item writing and item review will be addressed. Attendees will receive a copy of Case & Swanson’s Constructing Written Test Questions for the Basic and Clinical Sciences.

Structure: Interactive, seminar format that includes item-writing practice and group review of test material.

Intended audience: Medical school faculty involved in writing exams, including course and clerkship directors, members of medical education departments, and others interested in achievement testing.

Level of workshop: Intermediate.

Workshop 4EE  Assessment challenges: using Simulated Patients in the holistic testing of consulting ability in high-stakes examinations

Connie Wiskin, Anne de la Croix (University of Birmingham, Department of Primary Care, Learning Centre, Edgbaston, Birmingham B15 2TT, UK)

Background: Many essential components of the consultation are not easily quantified using numeric scales or checklists. While these methods are indeed robust for assessing items that are observable, or countable, they can be less effective when other aspects of performance are considered. Obvious examples are communication ability, ethical behaviour and other aspects of the learner’s professional development. These criteria conform less well to discrete marking schedules, and may warrant a more creative approach.

Content: This workshop will give participants the opportunity to explore how communication and professional attitudes can be assessed using a comparatively novel holistic (descriptive) marking schedule. While a degree of subjectivity is required, this is welcomed in the context of serious consideration of testing aspects of a student’s performance that resist traditional numeric measurement. The system that will be introduced has been used in undergraduate and postgraduate high stakes (summative) testing in Birmingham for 10 years.

Structure: Assessments of this nature typically include role play (simulated patients), wherever possible with the role player highly involved in either direct scoring or scoring recommendations. This workshop will be interactive, and provide an opportunity to observe video clips and live simulations to prompt discussion about development of both this type of methodology and the level of responsibility simulated patients have in testing ‘non-clinical’ aspects of performance.

Intended audience/Level of workshop: The workshop is designed for up to 15 participants. A working knowledge of the simulated patient methodology and some direct experience of assessing communication is required, so the level is classed as intermediate. We look forward to seeing you.

Workshop 4FF  Teaching clinical competences – skills training (“skillsdrill”) and simulation (reflection)

Kjell Å Salvesen, Stine Gundrosen, Petter Samuelsen, Torill Tanemsmo, Petter Aadahl (Faculty of Medicine, NTNU, Trondheim, Norway)

Background: Clinical competences are mainly taught, trained and achieved at the bedside. However, an increasing number of manual skills require the use of manikins and models in dedicated laboratories and the supervision of experienced tutors. At the same time, complex clinical situations including communication skills can be trained in simulation centres where the emphasis is on reflection during debriefing. For clinicians such combined training facilities are paramount. The learning process varies quite extensively between those two elements and the different pedagogic challenges for the clinical teacher will be at the core of this workshop.

Intended outcomes: To discuss the different roles of the clinical teacher: (1) The proactive experienced teacher in skills training (learning by doing); (2) The reluctant facilitator in simulation (reflection-on-action).

Structure: Interactive mini lectures and training in groups in both the obstetric skills training laboratory and medical simulation centre.

Who should attend: Teachers in clinical medicine.

Level: No formal prerequisites.
5A The basic sciences and medical education

5A1 Transformed gross anatomy in a revised medical curriculum
Wojciech Pawlina (Mayo Clinic College of Medicine, Rochester, MN, United States)
Medical curricula are changing in response to the ongoing transformation of the US health care system. Medical students are now acquiring new skills and competencies in addition to basic science and clinical knowledge. Traditional basic science courses provide opportunities to teach principles of management, information technology, leadership, and team-building skills. Gross anatomy is the first course that can address issues related to professionalism such as respect, responsibility, confidentiality, self-policing, and interpersonal skills. In a revised medical curriculum, the gross anatomy course should be viewed not only as a basic science course but also as an early opportunity to teach new skills and competencies for tomorrow's physicians.

5A2 The implications of the rapid advances in medical sciences including genetics for undergraduate and postgraduate medical education
Domenico Coviello (Chair of Education Committee of European Society of Human Genetics and Head of Laboratory of Medical Genetics, Ospedale Maggiore Poloclinico, Mangiagalli e Regina Elena, University Hospital of Milan, Italy)
The latest progress in the field of human genetics is changing the needs and the delivery of health care in our era. The ability to tailor therapies and predict both positive and negative outcomes through the analysis of genotype will lead to an increased role for genetics in the delivery of health care. It is therefore essential that medical doctors are appropriately prepared to deliver patient care. The establishment of core competences is currently being used as a basis for health professional education in many other fields and settings (Walton & Elliott, 2006; Wold et al, 2006; Smith, 2005). We describe a set of core competences that could apply to health professionals in Europe, whatever their national setting and could provide an appropriate framework for establishing minimum standards of preparation for health care professionals in genetics across national boundaries.

5A3 Basic sciences and professional development
Ingeborg Netterstrøm (Center for Educational Development in Health Sciences, University of Copenhagen, Denmark)
The presentation will illuminate the process of medical students learning the basic sciences and their development of a professional identity, based on results from a research project, a longitudinal study. Entering medical school, students have high expectations of their future role as a doctor. In the preclinical phase they learn that medical knowledge is unambiguous and authoritative beyond discussion and reflection. The question is: what impact does it have in relation to the student's formation of an identity as a physician? And how are the students prepared to face uncertainty and complexity in the clinic?

5A4 The integration of Human Patient Simulators with traditional physiology teaching
Judy Harris (School of Medical Sciences, Bristol, UK)
We are currently using high fidelity, computer-controlled Human Patient Simulators to enhance our physiology teaching for first and second year medical, dental, veterinary and medical science undergraduates. The simulators are used mainly in small group (n=20), interactive sessions to illustrate physiological principles that cannot be demonstrated in human (i.e. student!) subjects. We are currently developing scenarios that illustrate aspects of cardiovascular and respiratory physiology – by demonstrating how the manikin responds, for example, to simulated haemorrhage and to ‘breathing’ different mixtures of inspired air. Staff and student feedback for this new approach to teaching physiology has been very positive.

5A5 Body Painting as a teaching tool in the teaching of anatomy to medical students and life drawing artists
Paul G McMenamin (Faculty of Medicine, Dentistry and Health Sciences, University of Western Australia)
With a move to more integrated systems-based approach in the preclinical disciplines at our medical school the author has been developing and trialling a variety of novel teaching methods in the medical course alongside conventional surface anatomy, radiology and cadaver prosections. One of these methods, body painting, has proven very successful. The author has also been running classes for life drawing artists on the anatomical basis of the human form. Participants get to personally participate in painting muscles onto live nude models. The result is not only an astounding teaching and learning tool but also represents a living 3D artform.
Symposium 6A  e-Learning v e-Teaching: autonomy or control?
Chairperson: Rachel Ellaway (Northern Ontario School of Medicine, Canada)
The development of the Internet has posed fundamental questions regarding freedom, access and control. These are echoed in the online mediation of healthcare education; while some practitioners and tools focus on the opportunities for free expression, exchange and participation, others are about security, tracking and direction. This symposium will present a debate between leading thinkers in technology-use contemporary healthcare education on whether the dominant role of technology-mediated education is about creating greater user autonomy or greater institutional control. Participants are invited to contribute to the debate to help us better understand the directions we are taking.

Symposium 6B  The basic medical sciences: role of basic science in the revised medical curriculum
Chairperson: Wojciech Pawlina (Mayo Clinic College of Medicine, Rochester, MN, USA) Panel: Domenico Coviello (European Society of Human Genetics/Mangiagalli Clinic, University Hospital of Milan, Italy), Richard L Drake (Cleveland Clinic Lerner College of Medicine, USA), Harumi Gomi (Jichi Medical University, Tochigi, Japan), Judy Harris (University of Bristol, UK), Paul McMenamin (University of Western Australia), Ingeborg Netterstrøm (University of Copenhagen, Denmark), Netta Notzer (Sackler Faculty of Medicine Tel-Aviv University, Israel)
The preceding plenary session provided a few examples of how basic science courses are being integrated into revised medical curricula. The symposium will explore challenges and opportunities related to the teaching of basic science in the medical school environment. Following a brief introduction, the participants will provide their perspective on the following basic science issues:
• placement and timing of basic science courses in the medical curriculum;
• integration of basic science content in clinical courses;
• introduction of new disciplines (genomics, proteomics, bioinformatics);
• responsibility of basic science educators in fostering translational research;
• role of basic science in professional students’ development;
• and evaluation of basic science knowledge and competencies.
This interactive symposium, utilizing the audience response system, will survey and engage the audience in a dialog to discuss present and future directions in basic science education.

Symposium 6C  Implementation of competency-based postgraduate curricula
Chairperson: Olle ten Cate (Netherlands) Panel: Jason Frank and Linda Snell (Canada); William McGaghie and Diana Wayne (USA); Charlotte Ringsted and Lisbet Ravn (Denmark); Fedde Scheele and Olle ten Cate (Netherlands)
Several countries have adopted frameworks for competency-based postgraduate training. The CanMEDS model (Canada) and the ACGME Outcome framework (USA) are well known. Other countries have introduced similar frameworks. Adopting a competency-framework is one thing, but translating it into day-to-day practice of training and assessment is quite something different. Tools have been developed, websites launched, taskforces and advisors installed, and progress is being made. This symposium aims at: (1) defining competency-based PG training; (2) an overview of what PG innovations in four countries (Canada, USA, Denmark and Netherlands) show; (3) presenting obstacles experienced in PG innovation; (4) giving examples and suggesting possible solutions. Where do clinicians and educationalists find common ground?

Short communications 6D  Clinical reasoning
6D/SC1  The application of the Health Information Network Teaching Systems (HINTS) in pediatric clerkship
Chyi-H Lin*, Tsuen-C Tsai, Chao-N Cheng, Yu-T Wu, Yuan-Y Chiou, Yuh-J Lin, Lih-S Chen (Dept. of Pediatrics, College of Medicine, National Cheng Kung Univ., No.138, Sheng Li Road, Tainan, 704 Taiwan)
Background: Teaching on clinical reasoning and system-based practice remains challenging for medical educators. We used computer information technology and designed case scenarios to facilitate and monitor medical students’ learning.
Objective: The study is to develop a Health Information Network Teaching Systems (HINTS) in Pediatric Clerkship and report students’ perceptions on its application.
Work done: The HINTS used a clinical vignette to trigger students for information collection, resolving problems, and forming diagnosis/treatment plans. A schema and tips were provided to facilitate problem-solving. In Year 5 Pediatric course, the HINTS was applied for students’ pre-class preparation and their responses were used for in-class discussion. A questionnaire regarding students’ perceptions of learning with HINTS was collected at the end of course.
Clinical reasoning can broadly be defined as the process of thinking critically about the diagnosis and management. Extensive research has been conducted on clinical reasoning to gain better understanding of this process. However, most research has focused on the process of diagnostic reasoning. Because of the lack of understanding regarding therapeutic reasoning, (continuous) education in therapeutics deprives a solid basis.

Work done: Based on the literature about diagnostic and therapeutic reasoning and cognitive psychology, we developed a hypothetical model of therapeutic reasoning. The hypothetical model will be presented and discussed, including recommendations for future research. In addition recommendations to improve (continuous) education in therapeutics are formulated which are based on this hypothetical model of therapeutic reasoning.

Conclusions: This new curriculum facilitates in students the development of clinical reasoning and they begin to think like a physician since the first course by using basic concepts to solve medical problems.

Take-home messages: Clinical reasoning must be the core in basic sciences courses in order to prepare the students for the time they start to see real patients.

6D/SC2 A hypothetical model of therapeutic reasoning
S Bizsesur*, E Geyteman, M Alabdulaiym, P Teunissen, A Arnold, Th de Vries (VU university medical center, De Boelelaan 1117, Klinische Farmacologie en Apotheek, 1081 HV, Netherlands)

Background: A (drug) treatment for an individual patient is an essential part of medical care, and should lead to an effective, safe and convenient treatment at reasonable costs. For many medical problems, treatment guidelines and standards have been developed to assist clinicians in determining their treatment. Reliable guidelines and standards are based on evidence (RCT, systematic reviews) indicating the best treatment(s) for a certain patient population. However, for individual patients, medical doctors sometimes have to deviate from the standard treatment. In these cases, they have to weigh many factors such as prognosis of the disease and patient characteristics. This process is called therapeutic reasoning, and is considered to be a part of the general clinical reasoning process.

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Conclusions: This new curriculum facilitates in students the development of clinical reasoning and they begin to think like a physician since the first course by using basic concepts to solve medical problems.

Take-home messages: Clinical reasoning must be the core in basic sciences courses in order to prepare the students for the time they start to see real patients.
Our work: As part of the master plan in patient safety education, a tutorial was developed for medical students. During this tutorial students discuss about different types of adverse events, and the impact of adverse events on quality of care. They learn also to analyse adverse events on a structured way, so they have more insight in the role of doctors, other health care workers and the clinical environment in the appearance of an adverse event.

Conclusion: For the first time in our medical curriculum students are explicitly confronted with patient safety aspects of medical care. The content of the tutorial is very much appreciated by students, and afterwards they have more insight in the different aspects of adverse events.

Take-home messages: Patient safety is an important aspect of clinical practice, and more education on this subject is needed during medical school.

Short communications

6E Teaching and learning styles

6E/SC1 Medical students’ epistemological beliefs: the focusgroup approach
Background: Epistemological beliefs (EB) are students’ conceptions on knowledge and knowing. The study of EB is currently a popular area of research within educational psychology. This study questions whether the focusgroup approach based on the ‘Reflective judgement interview’ allows us to map out medical students’ EB and whether there are indications that their EB develops during the last year of medical training.

Work done: 2 focusgroups of students were met on 3 occasions. Two focusgroups of experienced GP tutors were met once. During all these meetings, the participants were presented ill-structured questions which they were asked to answer critically. All sessions were audiotaped, transcribed and analysed according to a pre-defined plan.

Conclusions: The ill-structured problems have given access to the participants’ EB, but with this measure, few arguments were found in favor of and evolution of the students’ EB. No considerable differences were found between the students’ and the trainers’ EB, except for one statement.

Take-home messages: The study of EB is a very interesting and fascinating area of research in which the challenge lies in overcoming the thresholds inherent to the domain of EB as well as those inherent to the domain of medical education.

6E/SC2 Factors that promote long-term learning: students’ perceptions
Alina Marszalek and Susan B Higgins-Opitz* (School of Medical Sciences, Faculty of Health Sciences, University of KwaZulu-Natal, 4001, South Africa)
Work done: Three innovative active learning exercises, a module on Tuberculosis (TB), a cardiovascular module, and gastrointestinal and endocrine presentations, were implemented in the pre-clinical (1st and 2nd) years of the traditional medical curriculum of the former University of Natal. These exercises differed in format, implementation and assessment. Retrospective surveys were carried out to evaluate the long term impact of these exercises on 4th and 5th year students’ learning.

Results: Of the 56 responses received from 5th year students, 77% reported that all of the above-mentioned learning exercises had contributed to a better understanding of clinical problems encountered during their training, as opposed to 49% of the 4th year respondents (n=111). The TB module was identified as having contributed the most by 80% and 48% of the 5th and 4th year respondents, respectively. Recognition of the value of these active learning exercises was consistently greater by the 5th year cohort. Features of the learning exercises identified by students as having the greatest impact on their learning included holistic approach, early clinical exposure and patient interaction. Problems highlighted included unequal contribution by group members, insufficient guidance, too long a duration and repetitiveness leading to boredom.

Conclusions: This study demonstrates the meaningful role and long-term effects of active learning.

6E/SC3 Long term retention of urological knowledge and skills from small group course
U Zimmermann, K-J Klebingat (Urological Clinic University Greifswald, Fleischmanstr. 42-44, Greifswald, 17457, Germany)
Background: Long term retention of knowledge and skills is an indicator for successful teaching methods. It depends on regularly recurring exercises. We evaluated by a formative student assessment the retention of knowledge and skills from a practice-oriented urological small group course and the opportunity of exercises in other disciplines.

Work done: After one year, 43 of 100 students were randomly selected to answer a questionnaire and perform a digital prostate palpation. The questionnaire contained questions regarding realisation and frequency of digital rectal palpation (DRE), urinalysis and ultrasound, material needed for urinalysis and probe handling in a hypothetical case. On a model students had to recognise palpable findings from various diseases, name appraisal criteria and diseases with increasing prostate specific antigen (PSA).

Results: About half of the students had performed urological skills with a frequency from 1-10 investigations. 53% could specify material for urinalysis and handled the probe correctly. 67% allocated all palpable findings to diseases but only 27% named all appraisal criteria. All students named at least one disease with rising PSA.

Take-home message: The course is a feasible method to teach urological knowledge and skills and adduces acceptable results. To improve students’ performance more integration of investigative methods in other disciplines is required.
A different approach to using learning styles
Thelma Quince, Paul Sikles, Diana F Wood, John Benson (Department of Public Health and Primary Care, Institute of Public Health, University Forvie Site, Robinson Way, Cambridge, CB2 2SR, United Kingdom)

Background: How individuals learn is a concern in many fields of education (Cassidy 2004, Educational Psychology 24:4:419-444). Honey and Mumford’s (LSQ) examines individuals’ preferences for different ways of learning (Honey & Mumford 2006, The Learning Styles Questionnaire: 40-item version, Maidenhead, Berkshire, Peter Honey Publications). Strong associations between LSQ learning styles, instructional modes and academic performance have not been found. Kolb suggests that ability to learn from different experiences is beneficial (Kolb, Experiential learning, Englewood Cliffs, NJ: Prentice Hall Inc). Specific learning preference may be less important than breadth of preference.

Work done: 656 students at Cambridge School of Clinical Medicine, completed the LSQ on intake, of which 241 did so on exit. We constructed a breadth of learning style index. We used quartile scores to rank students according to strength of orientation towards each learning style. Based on the number of “weak” orientations we classified breadth of learning styles as “broad” (none) moderate (1) and narrow (2 or more).

Results: Of students completing the LSQ on intake and exit a third had broad, and a quarter had narrow learning styles on intake. Broad learners on intake were more likely to remain stable. Half of the students recorded changes in breadth of learning style: a quarter became narrower and a quarter became broader.

Conclusion/take-home message: Simple index of breadth of learning styles may have greater utility than specific individual learning styles. Developing breadth of learning style may facilitate life-long learning.

Design and validation of Teaching and Learning Style Profile (TLSP) for the pharmaceutical courses
Maryam Lelos, M S Salek and R D Sewell (Welsh School of Pharmacy, Cardiff University, Centre for Socioeconomic Research (CSER), Redwood Building, King Edward VII Avenue, Cardiff, CF10 3XF, United Kingdom)

Background: Academics’ values and expectations of educational activities are changing, simultaneously, technological advancements beg the need for systematic monitoring of teaching and learning styles in order to design more progressive course contents and methods. This study endeavoured to validate the TLSP for systematic assessment of teaching and learning styles.

Work done: Development of the TLSP comprised conceptualisation, item generation and was followed by psychometric testing to examine its measurement properties. The initial TLSP was subjected to content validation using a panel of judges. The level of agreement amongst the panel members was measured by determining Cohen Kappa coefficient value (k). The item generation phase produced statements for educators and students. The item reduction phase, combined with the literature review and student survey, reduced these statements considerably. They were then categorised comparatively so that the results demonstrated the population’s ergonomic, stylistic and methodological preferences. Content validity was used to establish measurement properties of the TLSP.

Conclusions: Feedback from the panel supported (k) and also highlighted some refinements to the TLSP. It is hoped that systematic assessment of teaching and learning styles in medical and pharmaceutical education programmes would lead to optimisation of learning outcomes.

Readiness for multiprofessional learning among students with and without direct patient contact
A Brauner*, M Lewitt, E Ehrenborg* (Karolinska Institutet, King Gustaf V Research Institute, Department of Medicine, Karolinska University Hospital, Rolf Luft Center for Diabetes Research, Department of Molecular Medicine and Surgery, Karolinska University Hospital, Department of Clinical Microbiology, MTC, Karolinska University Hospital, SE-171 76 Stockholm, Sweden)

Background: Future health care is dependent on clinical and experimental oriented professionals. To meet these challenges students with no direct patient contact but who will be involved in the development of drugs and diagnostics need to comprehend knowledge of diseases also from a clinical perspective and collaborate with health care professionals. To develop meaningful multiprofessional assignments it is important to know students’ preparedness for collaborative efforts.

Work done: In order to quantify clinical (medical) and experimental oriented (biomedical) students’ attitudes to multiprofessional learning a modified version of the University of Liverpool Readiness for Interprofessional Learning Scale (RIPLS) was prepared and used prior to shared learning activities. The RIPLS questionnaire includes measurement of “teamwork and collaboration”; “professional identity” and “roles and responsibilities”.

Conclusions: Medical students were surer of their professional identity and role than biomedical students. The biomedical students seem to be more positive and eager to perform interprofessional teamwork and collaborations than the medical students. Medical students though that they needed to obtain more knowledge and skills than other students at Karolinska Institutet. However, both student groups have a positive attitude to multiprofessional learning.

Take-home message: Tailor-made shared learning activities might be needed depending on participating student groups.

E-learning for sharing across medical and pharmacy students
Lesley Diack*, Michael Gibson, Lorna Michattie, Derek Stewart, Dorothy McCaig, Christine Bond, Hamish Mckenzie (The School of Pharmacy, The Robert Gordon University, Schoolhill, Aberdeen, AB10 1FR, United Kingdom)

Background: Interprofessional education (IPE) in health care has been shown to develop an appreciation of the importance of teamwork and communication. In the first two years of the undergraduate health and social care courses in Aberdeen all students are involved in face-to-face discussions. However such sessions become difficult logistically. The use of e-technology to deliver education is becoming increasingly recognised and can overcome many issues.
6F/SC3 Using simulated ward conferences to demonstrate the importance of multidisciplinary team working

Michael Gibson*, Lesley Diack (The Robert Gordon University, Schoolhill, Aberdeen, AB10 1FR, United Kingdom)

Background: As part of the interprofessional education (IPE) programme, all first year health and social care students in Aberdeen take part in a series of face-to-face workshops. To build on these workshops the current initiative aims to analyse the components of interprofessional team-working and to demonstrate its potential impact on patient experiences.

Work done: Multidisciplinary workshops comprising groups of up to ten 2nd year undergraduate pharmacy, nursing and social work students answered a series of questions analysing the components of interprofessional team-working shown in three video clips. These clips focused on aspects of interprofessional communication in a simulated multidisciplinary ward meeting.

Results: Student and facilitator feedback was extremely positive. Key themes which arose included recognising the role each profession plays in a multidisciplinary team, the necessity for good communication between disciplines and the usefulness of the video clips as a tool for demonstrating interprofessional communication.

Conclusions: This initiative demonstrates the benefits of using video technology to instil an appreciation of the importance of multidisciplinary team-working in health and social care.

Take-home messages: These workshops build upon the first year IPE in Aberdeen and will be rolled out to all second year health and social care students in the coming year.

6F/SC4 Student-led IPE: reflections of students from Sudan

Mohammed Salem*, Widad Abdalla, Mahadi Mahmoud (Faculty of Medicine & Laboratory Sciences, Alzaiem Alazhari University, P.O.Box 1933, Omdurman, Sudan, 11111, Sudan)

Background: Student-led IPE is a new concept in interprofessional education (IPE) that describes leadership and reflection of students on IPE theory and practice. This term was highlighted by Prof. Meads (CAIPE, UK) in his description of an IPE-based program to Alzaim Alazhari students from Sudan.

Work done: Medical students of Alzaiem Alazhari University led a community-based rural program for many years for the sake of students’ own training and contribution to the promotion of health services in different underserved rural areas in Sudan. Later on, students introduced a big change into the program by involvement of Medical Laboratory Sciences students and recruitment of health workers and midwives from rural communities to form a multiprofessional health team. This aimed to improve both, quality of health services delivered and training of students via interprofessional collaboration, distribution of tasks and exchange of knowledge and skills.

Conclusions: Students learned how to lead and manage health services with minimal resources and reflect on the concepts of partnership and collaboration with various sectors of the community.

Take-home messages: Positive change in students’ knowledge is reflected in their attitudes and into their practice, in turn. This indicates readiness and motivation of students to lead IPE developments in different institutions. Last, not least, students are not only a valuable resource in health education development, but are also potential leaders!

6F/SC5 Multiprofessional education among undergraduate medical and nursing students: effectiveness and acceptability

J M Johnston (University of Hong Kong, Department of Community Medicine, 21 Sassoon Road, Li Ka Shing Faculty of Medicine, People’s Republic of China)

Background: Interprofessional education has been recommended as a way to improve collaboration, communication and teamwork between physicians and other health care professionals. However, there is sparse empirical research assessing the effectiveness of IPE in health or social care and little evidence to substantiate or refute the benefits of inter-professional learning.

Work done: A repeated measure, pre/post-intervention design was used to assess the effectiveness of the inter-professional educational curriculum in the Patient Care Project (Feel Link) in Years 1 and 2 of the undergraduate medical and nursing curriculum. All Year 1 undergraduate medical students (n=125) and nursing students (n=160) enrolled in 2005 were included in the study and followed up until the end of Year 2 in 2007. Using validated questionnaires and focus groups we assessed a) inter-professional communication, b) team work and collaborative skills and c) student, tutor and patient/client satisfaction with the learning experience, and d) improved understanding of the roles and perceptions of other professionals.

Conclusions: Although the effect size was small, positive change in inter-professional communication, team work and collaborative skills were reported by both the medical and nursing students. The adoption and introduction of inter-professional education though early in the undergraduate curricula, found that professional roles and attitudes are already well entrenched and difficult to change.

Take-home messages: Early inter-professional education enables a more collaborative approach to work and appreciation of the professional role of other team members. Stereotypical attitudes prevail and a more persistent intervention throughout the undergraduate curriculum is needed to overcome entrenched professional barriers to inter-professional work.
6G/SC1 Determining the reliability of clinical performance assessment scores in real time
Thomas J Beckman*, Jayawant Mandrekar, Gregory Engstler, Lindsay Decker, Robert Ficalora (Mayo Clinic College of Medicine, 200 First Street SW, Rochester, Minnesota, 55906, United States)

Background: Assessment score validity is usually based on a single psychometric analysis. Yet learning environments are always changing and assessment validation and revision is a never-ending cycle. We are unaware of methods for calculating reliability in real time. Therefore, we developed software that calculates the reliability of assessments instantaneously.

Work done: We collected over 2,300 assessment forms in 2006. We developed software that calculates assessment score reliability in real time. Software accuracy was verified by comparing data from our software with data from a standard method. Factor analysis explored the dimensionality of assessment scores.

Results: Correlation between results from our software and a standard method were excellent (ICC for kappas = 0.97). Cronbach alphas differed by less than 0.03 between both methods. Cronbach alpha ranged from 0.94 to 0.97 and weighted kappa ranged from 0.08 to 0.40. Factor analysis confirmed 3 domains of teaching.

Conclusions: We describe an accurate method for calculating reliability in real time. Ours may be the first electronic method to address the theory of validity-hypothesis testing and revision. This technique will enable future studies to isolate aspects of the learning environment and determine their impact on reliability, thus improving knowledge of validity threats in naturalistic settings.

6G/SC2 Validity, reliability, feasibility and satisfaction of the Mini-Clinical Evaluation Exercise (Mini-CEX) for cardiology residency training
Alberto Alves de Lima*, Carlos Barrero, Sergio Baratta, Yanina Castillo Costa, Guillermo Bortman, Justo Carabajales, Diego Conde, Amanda Galli, Graciela Degrange, Cees Van der Vleuten (Instituto Cardiovascular de Buenos Aires, Blanco Encalada 1525, C1428DCO, Argentina)

Background: The Mini-CEX has been designed to incorporate the skills that residents require in patient encounters.

Work done: To determine the validity, reliability, feasibility and satisfaction rates, 108 residents from 17 cardiology residency programs were included. Validity was evaluated by the instrument’s capability to discriminate between pre-existing levels of clinical seniority. For reliability, generalisability theory was used. Feasibility was defined by a minimum number of completed observations. Satisfaction was evaluated through a 1-9 rating scale from the evaluators’ and residents’ perspectives.

Results: Regarding validity, Mini-CEX was able to discriminate significantly between residents of different seniority. Reliability analysis indicated that a minimum of 10 evaluations are necessary to produce a minimally reliable inference. Feasibility was poor: 15% of the residents were evaluated 4 or more times during the study period. High satisfaction ratings from evaluators and residents were achieved.

Conclusion: Mini-CEX discriminates between pre-existing levels of seniority, requires considerable sampling to achieve sufficient reliability, and was not feasible within the current circumstances. It was considered a valuable assessment tool as indicated by the evaluators’ and residents’ satisfaction ratings.

Take-home messages: Mini-CEX is a valid assessment tool. Requires considerable sampling to achieve sufficient reliability. It was not feasible within the current circumstances.

6G/SC3 Implementation of Mini-CEX (Clinical Evaluation Exercise) in a newly established parallel surgical out-patients clinic
Troels Kodiat*, Knut Aspegren, Jørn Aaseby, Kirsten Kruse, Claus Vinther (Esbjerg General Hospital, Department of Internal Medicine, Finsensgade 35, Esbjerg, 6700, Denmark)

Background: Postgraduate training was reformed in Denmark in 2004 requiring assessment of specific clinical skills. We wanted to test mini-CEX in a newly established Danish surgical out-patients’ clinic where senior and junior doctors are working parallel. Focus was on communication and collaboration skills while working in the outpatient department in everyday circumstances. A nurse carried out the structured observations of the junior doctor’s clinical encounters. Feedback was given by the supervising senior doctor and the nurse.

Work done: In 2006/2007 5 junior doctors were assessed in a total number of 18 clinical encounters. Acceptance of the method was evaluated with questionnaires to all involved.

Results: Senior doctors found it easy to use Mini-CEX in 14 of 15 encounters and were positive to use the method in the future. Junior doctors said Mini-CEX was a positive experience in 15 of 18 instances, that feedback was fair in 17 of 17 and useful in 18 of 18 encounters. Average time consumption using Mini-CEX was 37 minutes. It was found to be a very useful formative assessment tool and was cost effective.

Conclusions: The comments shows good feasibility and acceptance of Mini-CEX in a Danish department of surgery.

Take-home message: We recommend the use of Mini-CEX for routine assessment of core clinical skills in Danish postgraduate training.

6G/SC4 Trainee and trainer perceptions of the value and validity of Objective Structured Assessment of Technical Skills (OSATS) for work-based assessment of surgical skills in Obstetrics and Gynaecology
J F Bodle*, S J Kaufmann, D Bisson, B Nathanson (Leeds University, Academic Dept Obstetrics and Gynaecology, Clarendon Wing, Leeds General Infirmary, LS2 9JT, United Kingdom)

Background: Reduced Junior Doctor training hours and increased patient expectations have resulted in less exposure to surgical procedures. Validated methods of assessment are therefore required to ensure the surgical competency. OSATS forms are one possible tool. The aim of this paper was to investigate trainee and trainer perceptions of the value and validity of OSATS in the operating theatre environment.
Work done: OSATS forms and feedback questionnaires were distributed to trainees and trainers.

Results: Fifty-nine assessee and sixty assessor questionnaires were returned (90 trainees and 29 trainers). 85% of trainees and 78% of trainers agreed or strongly agreed that OSATS would improve trainees' surgical skills. Face, construct and content validity was perceived by trainees and trainers as strong or good, 68% (100%), 90% (73%) and 76% (61%) respectively. 76% of trainees and 77% of trainers felt that OSATS should become part of the formal postgraduate assessment process.

Conclusions: Work-based OSATS are a welcome addition to the objective assessment of surgical skills with proven face, content and construct validity.

Take-home messages: OSATS warrant further investigation to assess their criterion-related, construct and predictive validity as well as their reliability and determine their place in postgraduate training and assessment.

Workshop

Creating an interprofessional faculty to develop communication skills

Colin Fergusson, Peter Harrison, Bridget Lock, Pam Shaw, Alistair Thomson (National Association of Clinical Tutors, 56 Queen Anne Street, London W1G 8LA, United Kingdom)

Background: At our AMEE workshop last year, "Developing an interprofessional faculty to teach professional skills"); we examined aspects of faculty development including the benefits and disadvantages of an interprofessional faculty and those components that could be improved by interprofessional delivery. We also explored how to engage other professionals in postgraduate medical training. This year's workshop will explore how members of the faculty have used this model to deliver communication skill programmes to postgraduate doctors of mixed ability and seniority. We will particularly look at the difficulties of engaging the more reluctant to utilise training. In the UK, poor communication is often identified in 360o degree feedback. The workshop will explore how to engage those doctors, particularly those who may have poor insight or be very senior, in overcoming their reluctance to access communication programmes. One of the facilitators (CF) reported in Basel in 2006 that only 15% of UK consultants in a survey had attended a postgraduate course in any communication skills. That is despite the recognition that all undergraduates and postgraduate doctors will benefit from developing their capability to communicate with colleagues, patients, relatives and the wider world. The benefits to patients and organisations of good communication are well known. In surveys, up to 80% of litigation in relation to medical care has been reported to result from failure in communication. The workshop will consider the benefits and difficulties in developing a faculty directed towards excellence in communication, in a learning environment and in a manner to make it acceptable to all.

Intended outcomes: Addressing communication education as part of professionalism throughout a medical career will help improve patient experience and potentially reduce both the emotional and financial cost of clinical negligence claims.

Structure: Participants will have the opportunity to explore current arrangements and discuss in small groups the pros and cons of developing an interprofessional faculty and the practical problems of getting participants, especially the more experienced and senior doctors to attend. **Participants are asked to bring along recent personal experiences of communication problems.**

Intended audience: All who are involved with or responsible for developing or implementing a curriculum in communication skills programmes for professionals.

Reference: A survey of beliefs and attitudes of senior medical staff to communication skills and training: C Fergusson European Association for Communication in Healthcare, Basel 2006.

Workshop

Bachelor and Masters of Medicine in Europe
Organized on behalf of MEDINE transparency taskforce

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Background: This workshop will explore the perspectives of different stakeholders on the Bologna Bachelor/Master of Medicine controversy, and consider constructive approaches on how to make this European policy work for Medicine. It will introduce participants to work carried out by student organizations IFMSA and EMSA on the Bologna Process (including a document on European learning outcomes and the outcome of a workshop discussing the Ba/Ma structure in Medical Education) and the proposals for the European thematic network MEDINE 2 in approaching European learning outcomes and Ba/Ma structure.

Structure: The session will start with 3 brief introductions in the work being carried out by students and academics to support implementation of Bologna process action lines. Small group discussions will be used to find answers to some targeted questions in the following subject areas: Bachelor learning outcomes, Employability of Bachelors in Medicine, Curricular formats that could work with a Ba/Ma structure. Outcomes of the small group discussions will be presented to the full group followed by further discussion. The workshop will conclude with summary and take home messages.

Intended audience: Medical professionals, educationalists and students, particularly those involved in trying to implement Bologna action lines in their own institutions.

Level of workshop: Intermediate. Familiarity with the Bologna process will help participants gain the most out of this session, although a handout will be circulated which briefly explains this.
Workshop 6J  The study of thinking by collecting and analyzing “Think Aloud” protocols and retrospective verbal reports

K Anders Ericsson (Department of Psychology, Florida State University, Tallahassee, Florida 32306-4301, United States)

Background: In this workshop, participants will learn how to design representative task situations with observable immediate actions and how to instruct experts and novices to “think aloud” during and/or to give retrospective verbal reports after their completed performance. Participants will be introduced to the analysis of verbal reports and methodological issues involved in collecting non-interfering and valid verbal reports.

Structure: The first half will entail a presentation with opportunities for questions. The second half will allow some of the participants to propose representative tasks and methods for applying protocol analysis to their domain of expertise.

Intended audience: Individuals interested in using protocol analysis in their research on expertise or in their teaching of students in simulator or clinical settings.

Level of workshop: Introductory/Intermediate. (The workshop will not assume any familiarity with protocol analysis and concepts from Cognitive Psychology; however, participants with experience of trying to assess thought processes in experts or students are more likely to gain more from the interactive discussion about how to apply protocol analysis to specific skills).

Workshop 6K  International medical education opportunities: cross cultural exchanges

John Norcini1, M Brownell Anderson2 (1FAIMER, 3624 Market Street, 4th Floor, Philadelphia PA 10104; 2AAMC, Washington D.C, United States)

Background: There is growing evidence that cross cultural exchange produces both personal and professional growth among medical students, postgraduate trainees, and faculty. Consequently, there is an increase in number and nature of the programs that provide such opportunities. Three organizations, FAIMER, AAMC, and the Global Health Education Consortium (GHEC), collaborated to develop a database that contains information about available opportunities in US medical schools.

Intended outcomes: (1) Familiarize participants with the advantages of international exchange; (2) Demonstrate the database; (3) Determine how to make the directory most useful to international medical schools; (4) Develop a list of additional information that should be collected to make the database a more useful tool.

Structure: The session will begin with a brief introduction to the types of international experiences available and their advantages. The database will be demonstrated and participants will work in small groups and consider a group of questions.

Intended audience: Conference participants interested in learning about databases available about international opportunities in medical education and participating in discussions about ways to enhance their effectiveness are encouraged to attend. No previous knowledge is required, the session will be highly interactive, and materials describing the database will be provided.

Level of workshop: Beginner.

Workshop 6L  Taking off the blinkers — integrating humanities and liberal arts into the core of medical curricula

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Background: Witten/Herdecke University (UWH) has 25 years of experience with a distinctive format of education that introduces humanities and liberal arts as a cornerstone in medical professional education. The faculty of humanities and liberal arts provides a compulsory core curriculum for future physicians as well as for all UWH degree programmes. This curriculum accounts for ten percent of the entire workload.

Intended outcomes: The proposed workshop will: (1) show benefits from the perspective of the students, prospective employers and also patients; (2) demonstrate how this curriculum is integrated into scientific medical education; (3) present experiences gained, best-practice examples and how-to-do-it patterns.

Structure: In small groups participants are requested to identify specific competencies relevant to their daily practice not yet taught in standard medical curricula. In a second step participants will discuss possible ways to integrate these. The group discussion will be inspired by two examples (e.g. “phenomenology of music: discover listening”; “world view of a clown - body language”). In addition the core curriculum “humanities and liberal arts” at UWH will be introduced. Pros and cons and empirical data from a survey among medical alumni will be discussed.

Intended audience: faculty leaders, medical educators, students.

Level: All levels.
Factors affecting premedical students’ academic college life

Sun Kim, Eun Kyung Lee, Joo Hyun Park (Department of Medical Education, The Catholic University of Korea College of Medicine, Seocho ku Banpodaeng 505, Seoul, 137-701, Republic of South Korea)

Background: The study has as its purpose determining factors which affect medical students’ poor progress in academic studies and to look for ways to improve the situation.

Work done: 64 premedical students in year 1 (40 male, 20 female students) and 98 premedical students in year 2 (64 male, 34 female students) in total 162 were the subjects. From these students, the top 30% and the bottom 30% were selected. Students were analyzed in items such as academic records, college life adaptation, academic self-efficacy, academic achievement goal orientation and maturity in career.

Results: For year 1 premedical students, the top 30% students had higher self-control or judgement, and self management in academic self-efficacy than the bottom 30%, and they had their focus on developing academic competency. The top 30% students also had a prominent directivity in academic achievement goal of career development. The top 30% of year 2 premedical students also showed higher self-control or judgement, self management in academic self-efficacy than the bottom 30%. The bottom 30% group showed significant higher social adjustment scores in college life adaptation compared to the top 30% students which indicated they focus more on social or human relationships (circle or external activities) in their college life.

Conclusions: It could be suggested that premedical students need to have better skills in self-control and a clear direction on their career development in order to handle their academic life more efficiently.

The comparative learning strategy between successful and unsuccessful students in Semnan University of Medical Sciences

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Background: This study was designed to compare learning strategies between successful and unsuccessful students in Semnan University of Medical Sciences.

Work done: This is a descriptive-analytical cross-sectional study. Samples were 41 students of S.U.M.S, and data were collected through a learning strategies questionnaire. Data were analyzed by SPSS and also mean, standard deviation, absolute and relative frequency were detected. Chi-square, Pearson correlation coefficient at the level of 5% was used for analysis.

Results: The results showed that the most frequent cognitive strategy used by successful and unsuccessful students was rehearsal, and the most frequent meta cognitive strategy was planning. The results showed there is a significant difference in using learning strategies between successful and unsuccessful students. There was no significant difference between males and females in using these learning strategies.

Conclusion: Students use different learning strategies such as rehearsal and planning for better learning. Education and encouragement of students about use of learning strategies can help them to succeed.

Stress and depression of medical students in clinical year

Sukit Mahattanana*, Walaporn Eunontanat, Sukit Purak (Maharaj Nakhon Si Thammarat Medical Education Center, CPIRD, Maharaj Nakhon Si Thammarat Hospital, Nakhon Si Thammarat Province, 80000, Thailand)

Background: Studying in clinical year (4th - 6th) is tense and stressful. This study aims to assess the factors related to depression in clinical years for medical students at Maharaj Nakhon Si Thammarat Medical Education Center (MEC).

Work done: 24 medical students were randomly selected by drawing names from a list of 46 questionnaire receivers. The questionnaires were distributed in July 2006. Data gathering questionnaires comprised of Stress Evaluation Form (Cronbach’s Alpha = 0.85), Depression Screening Form and the method to relieve stress. Statistical analysis was performed by using frequency, percentage, mean, standard deviation and Pearson Product Moment Correlation Coefficient.

Results: The greatest individual stress factor was examination results, the greatest stress factor on learning and studying method was medical teachers and means to release stress were consultation with friends, hobby, and exercise. 4 persons have a Stress score above average, 3 persons have Depression score at abnormal level. GPA and Stress showed a statistically significant correlation with Depression ($r = -0.47$; $p$-value < 0.05), ($r = 0.85$; $p$-value < 0.01) respectively.
6M/P5 Why do some medical students fail to reach the point of registration?

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Background: The rate of medical student wastage among universities in Great Britain lies between 0.5-13%, in USA 2-16% and in Australia and New Zealand around 8-10%. An analysis of the reasons why students fail to reach registration would provide useful feedback for student welfare and Undergraduate Deaneries.

Work done: A literature review was completed to establish what is known as to why some medical students fail to reach registration. A key-word search was made of computerized databases, between 1970 and May 2006, for systemic reviews, review articles and original research papers. Papers were critically appraised using Fowkes and Fulton guidelines, for each of the criteria, giving a score of 3 (high), 2 (medium) or 1 (low). Results were summed in Excel spreadsheet and papers with the highest score selected.

Conclusions: Eight main themes, and 21 factors were identified as the reasons for medical student attrition from medical school.

Take-home messages: The effect of the factors that play a significant role in causing the voluntary withdrawal from medicine could be neutralised if they were recognised as “risk” factors at a critical point in a students’ career progression.

6M/P6 Pre-matriculation factors predicting medical students’ academic difficulties

Samkaew Wanvari* (Faculty of Medicine, Ramathibodi Hospital, Rama VI Road, Bangkok, 10400, Thailand)

Objective: To assess pre-matriculation factors predicting the academic difficulties of medical students in medical school.

Work done: A logistic regression analysis of demographic factors (age, sex residence and financial status), entrance examination score and pre-matriculation interview result with academic difficulties (failure of one or more comprehensive basic science or clinical science examinations, repetition of any compulsory clerkship, dismissal, transfer, delayed graduation or attrition) was accomplished using the data of 735 Ramathibodi medical students enrolled between 1995-1999.

Results: Stepwise logistic regression analysis showed that the significant predictors of academic difficulties in medical school were age, sex and pre-matriculation interview remarks. The odds ratios for male sex, increasing age, and remarks on pre-matriculation interview were 1.47, 1.55, and 2.19 respectively.

Conclusions: Male students, older students, or those with remarks on pre-matriculation interview should be closely monitored and instructed throughout their medical school education to avoid anticipated academic difficulties.

6M/P7 Screening medical students for attention deficit disorder

Judith A Westman*, Patricia Fertel, Linda Stone, Robert A Bornstein (The Ohio State University College of Medicine, 370 W 9th Avenue, Columbus, Ohio, 43210, United States)

Work done: Medical students participated in a voluntary pilot program to screen students for attention deficit disorder (ADD) and other learning disabilities. Volunteers exhibited marginal academic performance or a self-perception of reduced abilities when compared to peers. A self-report screening tool was used with 32 students (4 clinical students, 28 preclinical) exceeding the threshold for further assessment. Additional assessment was performed by a neuropsychologist and included the Wechsler Adult Intelligence Test, California Verbal Learning Test, Stroop Interference Test, Continuous Performance Test, and the Minnesota Multiphasic Personality Inventory 2.

Results: Diagnoses included ADD (61%), depression (16%), abnormal executive function (5%), attention deficit hyperactivity disorder (5%), and average intelligence (16%). Students with new diagnoses of ADD had been challenged by failures of USMLE Step 1 (n=3), USMLE Step 2 CK (n=2), remediation of a year (n=2), and marginal course grades (n=10). One student was asked to remediate the first year shortly after diagnosis, and two students withdrew from medical school to pursue alternate career paths. Evaluation of some students is incomplete at the time of abstract submission; complete data will be presented at the meeting.

Conclusions: Based on the pilot program, the authors plan to initiate screening for all incoming first year medical students.

6M/P8 Why do veterinary medical students drop out?

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Background: Applicants for veterinary and medical schools have to compete for the limited number of places. Although we expect admitted students to be highly motivated and qualified for their study, there are still drop outs after one or more years.

Work done: In the Netherlands research was performed to investigate why veterinary students quit their study. Automatically admitted students with high grades in High School, were compared with students with moderate grades who were admitted by weighted lottery. All drop outs (N=159) from cohort 2001 to 2005 (N=1159 students), have been sent a questionnaire to find out their motivation to apply for the study of veterinary medicine and their reasons to quit the study. We received 70 questionnaires (44%) and compared the differently admitted groups.

Results: High grades applicants stopped significantly more due to their lack of interest in the study program, and moderate grades applicants stopped due to the experienced heavy study load.

Conclusions: More information concerning the contents and the heavy workload for the study of veterinary medicine might decrease the number of drop outs.
Unified attendance: an early-warning system for student welfare
Nathaniel Suda*, Kathleen Fotheringham (Bute Medical School, University of St Andrews, St Andrews, Fife, KY16 9TS, United Kingdom)

Background: In 2004, the Bute Medical School adopted an integrated curriculum in which each semester-module would be taught by upwards of thirty staff members. This change presented the opportunity to examine how attendance procedures could enhance student support.

Work done: A comprehensive on-line attendance system which included all aspects of attendance management including: attendance data entry, individualized student records, and email reports and reminders was created and adopted by all members of staff.

Results: Evidence suggests a system which incorporates attendance for compulsory teaching and effectively distributes that information can point out underlying problems in individual student welfare and potential issues in student performance. Evidence will also be shown that the lack of means or coordination to very quickly analyse and distribute attendance data significantly diminish the usefulness of the information.

Conclusions: Accurate and timely attendance records are effective as early indicators of underlying problems in student welfare and performance. However key to successful use of this information to enhance student support is staff awareness of their responsibilities/duties and acting appropriately.

Take-home messages: A unified on-line attendance system can be invaluable to undergraduate medical teaching as it can turn attendance data into early-warning signals about student welfare and can allow staff to assist students appropriately.

Nature and nurture as predictors for study performance at medical school
Karen M Steegers-Jager*, Mouna Naas, Ted A W Splinter (Erasmus MC- Institute of Medical Education and Research, Office Ff2.17, PO Box 2040, Rotterdam, 3000, Netherlands)

Background: Earlier research revealed that about 25% of our first-year medical students has a non-Dutch origin. So far, no data is available on their study performance.

Work done: We investigated the relationship between study performance at medical school and ethnicity, religion, and educational level and labour market participation of parents for 297 out of 354 (84%) fourth-year students. Data was collected by questionnaire. Study performance was defined as first-year GPA, months to complete the first year of the curriculum and study rate during the first three years (credits per month).

Results: Non-Western students tend to perform worse than both Dutch and Western immigrant students, particularly on first-year GPA (t294=2.96;p<0.01).

Educational level of parents only had a significant effect on study rate (F2,291=3.46;p<0.05); no effects for religion or labour market participation were found.

Conclusion: Non-Western immigrant students seem to have a lower study performance at our medical school than the other students, especially in the first curriculum year. Since our study doesn't contain data about dropouts during this first curriculum year, it will be repeated with first-year students.

Stress factors among medical residents: Lebanese particularities
F Haddad, E Nemr, C El Hage, G Shleity, A Yazigi*, P Yazbeck (Hotel-dieu de France Hospital, Saint-Joseph University Medical School, Beirut, 1107-2180, Lebanon)

Background: Stress factors vary according to geographic and socio-cultural environment. The aim of this study is to identify the stressors among medical residents in Lebanon.

Work done: In Saint Joseph University, 127 residents in all specialties completed a written questionnaire including 50 potential stress factors classified in 5 categories: academic, psychosocial, political and economic, personal life events, and other factors. Answers followed 5 frequency levels of Likert scale. Statistical analysis used Mann-Whitney, Kruskall-Wallis tests and Spearman's correlation coefficient. P < 0.05 was significant.

Results: The response rate was 80.3%. Political instability, economic crisis and employment insecurity were major stress factors among all residents. Other less frequent stressors were: exams, number of on-calls, heavy workload, uncertain future prospects for additional training abroad, the birth of a child, lack of time for study and for social life and insufficient income. The mixture of oriental and occidental culture at Saint Joseph University and the multiplicity of the religions did not seem to affect the stress.

Conclusions/Take-home messages: The unstable economical and political situation related to our country was a major stress factor, universally found among our medical residents. It certainly had an impact on employment insecurity, another omnipresent factor. Other factors were comparable to those found in the literature.

Student examination success can be predicted by behaviour
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Background: Professionalism is a key component of ACGM values (US) and CanMedS (Canada) and is critical to a well-trained physician. “Dysfunctional” or unprofessional students often have academic difficulty. Understanding which dysfunctional behaviour influences examination success, would allow educators to pre-emptively intervene.

Work done: 102 penultimate year medical students were studied prospectively in a musculoskeletal course. Introductory week attendance and punctuality was recorded. Faculty reported “dysfunctional” behaviour.
Results: Twenty-two ‘dysfunctional’ students were identified (8 arrogant, 6 lacking confidence, 8 disorganised). There was no significant difference in overall exam results, but all ‘lacking confidence’ students failed the OSCE examination (p=0.00007). ‘Arrogant’ and ‘lacking confidence’ students had significantly poorer attendance and punctuality during the introductory week. Two ‘dysfunctional’ students who had early intensive tuition passed all exam components.

Conclusions: Students ‘lacking confidence’ are more likely to fail the OSCE exam. Early identification of these students and intensive tuition may prevent exam failure. Such students may be detected by poor attendance and punctuality.

Take-home messages: Students who are “arrogant” or “lacking confidence” show significantly poorer attendance and punctuality. Students who “lack confidence” are more likely to fail the OSCE exam and should be identified and tutored to prevent exam failure.

6/M/P13 Academic support: lessons from cognitive psychology, basic physiology, and the study of peak performance

Lawrence Hy Doyle (David Geffen School of Medicine at UCLA, Dean’s Office/ED&R, CHS 60-051/Box 951722, Los Angeles, California, 90095-1722, United States)

Background: Academic Support activities may simply introduce students to basic learning skills such as note-taking, time management, reading, memorizing. As students advance, refinement of these skills can help them deal with the ever-increasing torrent of information.

Work done: Recently, curricula presenting advances in other fields have helped students to further develop skills. Directed practice using insights from cognitive psychology can have significant effect. Activity areas may include: the chunking of information, the effect of proactive vs. retroactive inhibition, the impact of diurnal cycles of alertness, the results of massed vs. spaced practice. All can help students expand upon basic skills. Personal journals detailing the impact of sleep, exercise and diet on student learning and examination performance can provide profound insights. Finally, practice with the essentials from sports psychology such as relaxation, visualization, monitoring of self-talk, effective goal setting, and pre-performance rituals, have helped students improve.

Conclusions: Curricula presenting such materials have been introduced in programs at nearly a quarter of US medical schools, as well as in programs ranging from high schools to medical residencies.

Take-home messages: Academic support built upon knowledge from cognitive psychology, basic physiology and the study of peak performance can significantly improve student performance.

6/M/P14 Stress management, academic performance and quality of life among Korean medical students

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Background: There is broad agreement that medical training is stressful. Although stress can have a positive effect, it becomes harmful when it leads to psychological ill health such as depression. The aim of this study is: 1) to identify salient stressors and to assess differential levels of vulnerability to stress; 2) to investigate differences in coping strategies such as problem-focused and emotion-focused coping mechanisms; 3) to discover whether unmanaged stress influences academic difficulties and quality of student life.

Work done: The Hypotheses are: (1) Students with lower academic performance report more stressful incidents than students with higher academic performance. (2) Students with lower academic performance more frequently use emotion-focused coping strategies than problem-focused coping strategies. In contrast, students with higher academic performance more often use problem-focused coping strategies than emotion-focused coping strategies. (3) Students who report higher quality of life, will more often use active problem-focused coping strategies than emotion-focused coping strategies. To assess coping strategies and quality of life, I will use some multidimensional inventories.

Conclusions: This study will provide information to aid the development of educational intervention for medical students regarding effective stress management strategies.

6/M/P15 Impact of peripheral attachments on medical student welfare

Amy Crees (University of Bristol, 248 High Kingsdown, Bristol, BS2 8DF, United Kingdom)

Background: Few studies have investigated the impact of clinical attachments outside the University city on aspects of medical students' welfare such as access to healthcare, mental health, and ability to maintain healthy lifestyle practices.

Work done: Results presented here were taken from a student-led survey at a UK medical school. Respondents had completed at least one year of clinical training, and had spent time on residential attachments between 22 and 66 kilometres from the University. The protocol received ethical approval. Questionnaires were sent by email; completed forms were returned to a confidential email account. Response rate was 20% (n = 130).

Results: During peripheral attachments, students found it more difficult to access primary care for their own needs (P<0.0001), and took less physical exercise (P=0.05). 18.2% rated their mental health during peripheral attachments as “poor” or “very poor”; 21% experienced considerably more stress during these placements than during attachments closer to the University.

Conclusions/Take-home messages: Peripheral attachments may have a wide range of implications for student welfare. Medical schools, students, and the healthcare services should work together to minimise the negative implications, and extra support may be needed for some students.
Clinical teaching – contexts and approaches

6N/P1 Medical students' groups at internship: conflicts and proposals
P L Bellodi*, M A Martins (University of São Paulo Medical School - FMUSP, Av. Dr Arnaldo, 455, 01246903, Brazil)

Background: Rotations at the internship are an important and difficult time for medical students. The groups are established by free choice. The students are always anxious about this division.

Work done: In order to understand these conflicts, this theme was discussed by all the groups (n = 80) of the medical school mentoring program. We analyzed it by a qualitative approach.

Results: Most of the students prefer the current format (free choice) criteria, besides the conflicts. For them, friendship and responsibility are essential to deal with the tasks of internship. A random composition could increase stress during this time and reduce the motivation to learn. The excluded students are described as those with little responsibility, socially inadequate and stressed persons. Mixed criteria, periodic changes among the groups and a manual with clear rules were the proposals presented.

Take-home messages: The mentoring program discussed important aspects in the process of groups' formation and is helping the Medical School to develop a new system that considers emotional and learning needs of their students.

6N/P2 How to make military medical exercises more efficient
Anders Johansson*, Lars Owe Dahlgren, Lars Lundberg (Swedish Armed Forces Medical Centre, Box 5155, Västra Frölunda, SE-42605, Sweden)

Background: Different educational backgrounds can influence what military nurses give priority to in medical exercises. According to a five-stage decision process of reflected skill acquisition, individuals can be classified as novice, advanced beginner, competent, proficient or expert (Dreyfus & Dreyfus, 1980;85).

Work done: A random sample of conscript nurses were interviewed and asked to rate different training conditions. The nurses were classified into two groups; Group I (n = 47) had general nursing education. Group II (n = 70) had specialist education, i.e. critical and emergency care. Differences in rating of importance were analysed by testing for trends in contingency tables.

Results: From a total of six different training conditions, significant differences between how Group I and Group II rated the importance was noted in three: where the exercise took place (p<0.05), realistic injuries (p<0.01) and relevant symptoms (p<0.01).

Conclusions: Group I needs concrete examples and group II needs complexity in the exercises. The competent have not yet developed speed and flexibility. However, in performance on individual tasks the competent nurse could become proficient (Benner, 1984).

Take-home message: The educational background as well as the working experience of the students has to be considered when planning military medical exercises.

6N/P3 Delivering training to students on placement
Robert Collin*, Carl McQueen (Leeds Medical School Unit, St. John Ambulance, c/o Clinical Skills Learning Centre, A Floor, Gilbert Scott Wing, Leeds General Infirmary, Great George St, Leeds, LS1 3EX, United Kingdom)

Background: Membership of the Leeds Medical School Unit of St. John Ambulance (LMSU) stands at over 150 students. Problems have arisen in the delivery of training as many students attend placements at hospitals across Yorkshire, UK. A website was designed with the aim of tackling the problem of access to training material. Training material was posted on the site and its use monitored. This audit assesses the impact the website has made to the co-ordination and delivery of training in the first 6 months.

Work done: The website was designed using Joomla (content management system) and is co-ordinated by a student volunteer. Presentations, interactive tutorials and workbooks are available in the training suites on the site and are updated weekly.

Results: 167 students have registered on the site. The training material is being accessed regularly (16.96 unique visits/day Feb 2007). No technical problems have been encountered: the website has been on-line for 213 days (28/03/2007). Retention of students on the courses has increased from the same period last year (127%).

Conclusion: The new website has improved accessibility of teaching material to students in the LMSU. Websites provide a useful teaching adjunct when training students who spend time on placement away from their home university.

6N/P4 Reflection on emotional experiences during clerkship: does it make you a better doctor?
Ann Deketelaere, Geert Kelchtermans, Chris Aubry, Marta Witkowska* (Faculty of Medicine, Katholieke Universiteit Leuven, Herestraat 49, bus 400, 3000 Leuven, Belgium)

Background: During their clerkship students keep a portfolio in which they demonstrate their professional growth. One assignment encompasses the reflection on an emotionally significant experience. We analyzed both the type and the content of those reflections to unravel different learning processes and meanings those experiences had to them.

Work done: Assignments from 240 students were analysed by two independent researchers. The analysis was guided by a theoretical framework on form and content of reflection, building on the ALACT-model (Korthagen, 2001) and the model of broad and deep reflection in experiential learning (Kelchtermans, 2001; 2007).

Results: Four different types of reflection were distinguished: D(escriptive) if the student describes what happened; P(ersonal) if the student documented personal emotions; A(nalytical) if the student unravels the experience in its emotional meaning; L(earning) if the student’s analysis resulted in formulated learning insight. In exploring emotional experiences students also mention technical, ethical and political dimensions of reflection and in analyzing the causes for these emotions they reflect on the underlying assumptions; values that constitute their professional identity.

Conclusions/Take-home messages: Structured and systematic exploration of emotionally significant experiences is a valuable portfolio-assignment contributing to the development of a professional identity.
An evaluation of clerkship of medical students from the view point of patient safety

Hye Rin Roh, Sang Wook Lee, Sung Bae Park, Ji Yeon Lee, Sook Won Ryu, Jeong Hee yang*, Yang Hee Kim (Kangwon National University College of Medicine, 192-1 Hyoja 2 dong Chuncheon Gangwondo, 200-701, Republic of South Korea)

Background: The purpose of this study is to evaluate the status of clinical clerkship from the view point of patient safety.

Work done: We conducted this evaluation in 2006 at College of Medicine at Kangwon National University. 49 fourth-year medical students were given a survey following a clinical clerkship. The questionnaires about the status of clinical clerkship were composed of communication, clinical skills, teamwork and interpersonal skills, decision making for diagnosis and treatment, ethics, self directed and long learning, evidence based medicine, and prevention of complications. We analyzed students' perception of their achievement.

Results: The achievement of clinical clerkship was high in basic clinical skills, decision making, and teamwork with doctors, but relatively low in communication and interpersonal relationship with hospital workers, ethics, evidence based medicine, and prevention of complication.

Conclusions/Take-home messages: The clinical clerkship was insufficient from the view point of patient safety. Accordingly, the clinical clerkship should be changed for patient safety.

Development of blended learning curriculum to teach basic clinical examination

Matthias Angstivurm *, Martin Göbbels, Yerovika Kopp, Ing Hege, Gudrun Karsten, Michael Illert, Kirsten Bruchner, Martin Fischer (Medizinische Klinik, Ziemssenstr. 1, 80336 Munich, Germany, Physiologisches Institut Universitat Kiel, 80336, Germany)

Background: Learning of clinical examination skills is essential for all physicians. Elearning offers an attractive tool to excite interest in these methods in medical students.

Work done: To establish standardized teaching methods, a blended learning concept including web based elements was developed by the collaboration between the universities of Kiel and Munich. Elearning modules were generated for cardiologic and pneumologic but not in gastroenterologic examination techniques. The influence of Clinical Skills Online, ClISO, on the performance of 36 medical students was tested using practical examinations and MC questions.

Results: ClISO was evaluated as very useful by students. In a pre- and post study design, significantly improved learning in students with ClISO was noted in cardiologic as well as in gastroenterologic knowledge compared to control students. Both groups improved equally in pulmonary examination. No difference in practical performance could be shown.

Conclusions: Improved learning in cardiology was associated with improved learning in gastroenterology despite the lack of elearning in the latter. Therefore a Hawthorne effect of the new electronic media is noted. Practical performance can be trained only by practical learning.

Take-home message: The application of new teaching methods stimulates learning even in areas without the implementation of new methods.

Bedside teaching in intensive care: effect on attitudes and skills of fourth year medical students

M Zijnen-Suyker, J Bakker (Erasmus MC University Medical Centre Rotterdam, Department of Intensive Care, Dr. Molewaterplein 50, Rotterdam, 3015 GF, Netherlands)

Background: A shortfall of intensivists in the future is expected. Therefore increasing interest early in the medical training could increase the number of ICU trainees.

Work done: Fourth year medical students attended a 2h- bedside teaching course in intensive care where observation, hemodynamics and organ support were the main topics. All students (n=193, 135 females) attended the program and 192 students completed pre- and post course 5-point Likert questionnaires (scale 1=strongly disagree to 5= strongly agree). Data are presented as mean±sd. The Mann–Whitney test was used to compare responses before and after the teaching program. A p–value of <0.05 was considered statistically significant.

Results: Overall attitudes towards the ICU as well as self-reported skills improved significantly following the course. Interest to qualify as an intensivist increased significantly (p=0.002). Also fewer students pictured the ICU as a typical death place. The Mann–Whitney test was used to compare responses before and after the teaching program. A p–value of <0.05 was considered statistically significant.

Conclusions: Improved learning in cardiology was associated with improved learning in gastroenterology despite the lack of elearning in the latter. Therefore a Hawthorne effect of the new electronic media is noted. Practical performance can be trained only by practical learning.

Bedside teaching in intensive care: effect on attitudes and skills of fourth year medical students

Take-home message: The application of new teaching methods stimulates learning even in areas without the implementation of new methods.

An unfolding long case or case vignettes: A comparison of 2 instructional methods in inpatient geriatrics for medical students

Nisha Rughwani*, Peter Gliatto, Reena Karani (Mount Sinai School of Medicine, One Gustave L. Levy Place, Box 1070, New York, NY 10029, United States)

Background: Elderly patients' hospitalizations are notable for functional decline and high symptom burden. This creates a critical need for training interventions. Case based learning incorporates active learning using relevant clinical problems. An unfolding long case (LC) improves knowledge and skills with a greater evidence that these transfer across cases. Working through multiple cases may result in enduring knowledge and improved case transfer. We assess the impact of 2 instructional methods (long case (LC) vs. case vignettes (CVs)) on the knowledge and application skills of third year medical students (MS3).

Work done: 5 topics (perioperative assessment, delirium, thromboses, pressure ulcers and functional assessment) were selected from the literature. From a needs assessment, learning objectives, LC, and CVs were developed. Students were alternately assigned to either LC or CVs. A 60-item MCQ test immediately pre and post course assessed achievement.
Results: 65 students completed the course - each method thrice. Average scores increased 18% from 62.2% to 80.2%. Scores increased 21.4% and 19.7% in the CVs & LC groups respectively.

Conclusion: Knowledge and application skills of MS3s increased with both methods. Additional data collection is ongoing to compare methods and determine impact of the course on retention of knowledge at 1 year.

6N/P9 The impact of emergency medicine clerkship on medical students’ clinical skills
Sun Ju Im*, Shin Young Kang, So Jung Yune, Sang Yeoup Lee, Hae Jin Jeong (Pusan National University Medical School, 1-10 Ami-Dong, Seo-Gu, Busan, 602-739, Republic of South Korea)
Background: The Emergency Medicine (EM) clerkship is likely to be more intimately involved in the initial evaluation and management of patients, providing students with learning opportunities. However, the educational impact of the EM specific clerkship has been poorly studied. The objective of this study was to determine if EM rotation improves medical students’ clinical skills.

Work done: This was a retrospective study of 59 medical students who had participated and 91 students who did not participate in a two-week EM clerkship. Students’ practical skills performance was assessed using an Objective Structured Clinical Examination (OSCE).

Results: Students who had participated in EM clerkship performed significantly better in the OSCE than did those who did not participate (p<0.00). Students participating in EM clerkship achieved much higher procedural skill scores including Basic Life Support skills scores than students not participating (71.68 versus 65.32, p<0.00). Students who rotated EM also scored significantly higher in communication and history taking skills.

Conclusions: The EM clerkship is a highly effective course for students to learn procedural skills and also leads to an improvement in communication and history taking skills.

Take-home messages: EM clinical rotation provides special experiences for students, allowing them to be involved in direct patient care, to have learning opportunities.

6N/P10 Nationwide survey of resuscitation education in Finland
H Jäntti*, T Silfvaast, A Turpeinen, A Uusaro (Kuopio University Hospital, Department of Anaesthesia and Intensive Care, PO Box 1777, Kuopio, FI-70210, Finland)
Background: Cardiopulmonary resuscitation (CPR) quality is poor in clinical settings and affects patient outcome.

Methods: A survey was administered to medical professionals at Finnish institutes teaching CPR to emergency medicine providers. Hours spent teaching CPR and the teaching methods used were evaluated.

Results:

Table 1: Group sizes at different institutes and the hours spent teaching CPR

<table>
<thead>
<tr>
<th>Institution</th>
<th>No. responding institutions</th>
<th>Hours of theory range (median)</th>
<th>Hours group training range (median)</th>
<th>Group size range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical students</td>
<td>4/5</td>
<td>2-5 (2.5)</td>
<td>3-10 (7)</td>
<td>6-18</td>
</tr>
<tr>
<td>Paramedics</td>
<td>6/8</td>
<td>8-28 (16)</td>
<td>10-40 (17)</td>
<td>2-10</td>
</tr>
<tr>
<td>EMTs</td>
<td>10/16</td>
<td>4-20 (9)</td>
<td>4-20 (10)</td>
<td>2-12</td>
</tr>
<tr>
<td>Fire-fighters</td>
<td>1/1</td>
<td>6</td>
<td>16</td>
<td>2-10</td>
</tr>
</tbody>
</table>

Table 2: The methods used to teach CPR

<table>
<thead>
<tr>
<th>CPR instruction method</th>
<th>Medical students</th>
<th>Paramedics</th>
<th>EMTs</th>
<th>Fire-fighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of compression rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Visual estimate</td>
<td>75%</td>
<td>12.5%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>- Using a watch</td>
<td>25%</td>
<td>25%</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>- Using an audible tone</td>
<td>25%</td>
<td>12.5%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>- Using graphics (laptop connected to the manikin)</td>
<td>25%</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment of compression depth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Visual estimate</td>
<td>50%</td>
<td>12.5%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>- Manikin light indicators</td>
<td>25%</td>
<td>12.5%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>- Using graphics</td>
<td>25%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Conclusion: The hours and methods used to teach CPR vary widely among different institutes. Medical schools seem to use less time and hands-on training for CPR training than other institutions.

6N/P11 A comparison of clinical procedures experienced by students in an integrated longitudinal clerkship vs. discipline specific clerkships
Marc Broudo*, George Pachev, Joan Fraser, Gordon Page (University of British Columbia, #317-2194 Health Sciences Mall, Vancouver, B.C. V6T 1Z3, Canada)
Background: This study focuses on a comparison of the performance of clinical procedures by two cohorts of students who participated in a year long integrated longitudinal clerkship vs. those students in discipline specific (conventional) clerkship rotations.

Work done: Each third year undergraduate medical student at the University of British Columbia is provided with lists of clinical procedures that they are expected to experience. Students had completed a web based log following the completion of each clerkship. Each log provided clerks with a list of the procedures which they were expected to experience or observe. The quantity and types of procedures clerks experience enable the evaluation of the following: (1) the effectiveness of the orientation courses offered; (2) the effects of multiple teaching hospital sites and services on students’ clinical exposure; (3) help ascertain whether the stated objectives related to the performance of clinical procedures are being achieved.

Results: Preliminary findings indicate that students in the integrated clerkship program were found to experience more clinical procedures than the students in conventional clerkships.
Holistic and continuous care with family and community involvement, 2002-2006
Teerasak Laksananun (Sawanpracharak Hospital, 43 Attakawee Road Paknampo District Nakhonsawan, 666000, Thailand)

Background: The optimal care of a patient is holistic with family and community involvement by a multidisciplinary team. The doctor-patient relationship is of primary importance together with successful maintenance of that relationship through continuity. It is necessary for medical students to learn theory and apply it to practice with the patient and family under the supervision of a multidisciplinary team.

Work done: Lecture in the classroom: (1) Concept of family medicine; (2) Home health care; (3) Counseling technique; (4) Family and community approach; (5) Basic communication skill for family; (6) Family and community psychology; (7) Internal and external factors affecting the patient's disease; (8) Practice with patient and family. Each student was assigned one case of a patient who needed home health care and had many problems. The student had to take care of the patient with the multidisciplinary team and the patient's family in the hospital until discharge to home and follow up about one year.

Conclusion: The medical student could understand the patient's and family's life style, the cause and effect influence on their health and could solve the family's problem with the multidisciplinary team and family and community involvement. The patients and their families could understand and satisfy the physician and could participate in managing care themselves.

Take-home messages: The method could be applied in other curricula.

Clinical teaching in the HPB Surgery Unit in the Royal Hallamshire Hospital
Z Toumi*, I C Cameron, M Peterson (The Sheffield Hepatobiliary Unit, K Floor, The Royal Hallamshire Hospital, Glossop Road, Sheffield, S10 2JF, United Kingdom)

Background: The need for a new model of teaching and learning for surgical trainees comes from three important changes to surgical training in the UK, which are: (1) Introduction of the specialty training programmes. (2) Reduction of length of training period due to restructuring of training programmes and the European working time directive. (3) Introduction of the new surgical curriculum and its implications. To ensure the continuous provision of high quality training, the Hepatobiliary unit adapted to these changes by introducing a new model of clinical teaching and learning.

Work done: Clinical Encounters in the HPB unit: Trainees can learn from six different clinical encounters which form part of their job, including: (1) Inpatients; (2) Outpatients; (3) Emergencies; (4) Theatres; (5) Clinical meetings; (6) Laparoscopic simulation.

The principles of the new model: (1) Performance of tasks; (2) Discussion and feedback; (3) Multidisciplinary discussion; (4) Formative assessment; (5) Reflection; (6) Simulation.

Conclusion: Surgical units can adapt to the changes to existing training models by developing and implementing new models of clinical teaching.

Take-home message: The model of clinical teaching in the HPB unit in Sheffield might be a model to be followed in other units with similar structure.

How can clinical thinking be taught and trained practically? The concept of Real Patient Study Days
Diethard Tauschel*, C Scheffer, S Balzereit, M Hofmann, F Edelhäuser (Universität Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten, D-58448, Germany)

Background: The curriculum at Witten/Herdecke University (Germany) is practice-based. After two years with problem-based learning (PBL) clinical rotations take place. Students were complaining about lacking a clear method, especially one that appropriately transforms PBL to the clinical learning situation.

Work done: Real patient study days (RPSDs) were established as a pilot-project during a six-weeks rotation in internal medicine (4th semester). RPSDs aim on training skills in clinical thinking and clinical work-up. RPSDs are conducted by the treating doctor of the patient and a moderator. Didactical applications include self- and small group activity, time to deal with the learning objectives, plenary discussion, presentations and lecture.

Results: Evaluation of questionnaires given to students shows high marks in: (1) motivation to learn; (2) appropriate transformation of the PBL method to clinical conditions; (3) supporting the clinical rotation; (4) relevance for later practical occupation; (5) global rating.

Conclusion: RPSDs seem to be a helpful method to promote self-engagement and clinical thinking as central competences of the clinical abilities.

Take-home messages: Real Patient Study Days are based on real patient contact, are highly interactive, teach clinical thinking, continue the method of problem-based learning and can be used at different stages in clinical training.

“Learning by doing - but what are they doing?”
Ralph Pinnock*, Alison Jones (Starship Children's Hospital, Park Road, Auckland, 1052, New Zealand)

Background: We had limited evidence of students' clinical experience in their paediatrics rotation so we decided to audit the skills the students were performing. We examined whether a simplified presentation of the curriculum (curriculum framework) would enhance their clinical experience.

Work done: Medical students in their first undergraduate paediatric rotation were divided into two groups. Only one group was given the curriculum framework. The clinical experiences of both groups were surveyed at the end of their rotations. Final year medical students were also surveyed at the end of their rotations.

Results/Conclusions: At the end of their first paediatric rotation the students had performed a number of key skills. The curriculum framework did not affect the range or number of skills being performed. By the end of their final year rotation there were still some key gaps. More than 50% of students had not performed 11 of the 22 skills.

Take-home message: It is valuable to survey students to gather evidence on their clinical experience. Once the gaps have been identified there is a responsibility to help students target their clinical experience more effectively.
60/P1 How many items a test must have: the compromise between the number and the quality
Isabel Neto*, Ana Gouveia (Faculty of Health Sciences, University of Beira Interior, Av. Infante D. Henrique, 6200-506 Covilhã, Portugal)

Background: The aim of this work is to estimate the reliability of MCQ tests made in basic and in clinical modules and to realize the importance of the number and the quality of the items in a test.

Work done: We analysed the MCQ tests made in a 1st year Module and in a 4th year Module of the Medical Degree computing the number of questions and the internal consistency (estimated by KR20).

Results: In the 15 tests of the 1st year Module the number of items ranged from 39 to 86 (53±11), 14 tests (93%) had a KR20≥0.7 and only 1 had <0.7. In the 8 tests of the 4th year Module the number of items ranged from 33 to 48 (42±5), only 2 tests (25%) had a KR20≥0.7 and 6 had a KR20<0.7.

Conclusions: We conclude that the quality of the tests in clinics is not as good as in basics. To improve the tests' reliability we have to increase the number of questions because we can't guarantee a high quality of items. This happens because the items have not been tested previously. Also a higher number of items allows us to miss out those that don't have good discrimination and consequently to improve the reliability too.

60/P2 Knowledge assessment using different MCQs formats: a comparative study
Ana Gouveia*, Isabel Neto (Faculty of Health Sciences, University of Beira Interior, Avenida Infante D. Henrique, 6200-506 Covilhã, Portugal)

Background: Our purpose is to understand if the reliability of multiple-choice questions (MCQs) differs with item formats. The conventional MCQ is widely used and recommended. Other MC item formats show some problems when compared with conventional MC. In basic modules of Medical Degree in Faculty of Health Sciences, MCQs are predominant in knowledge assessment and different MC item formats are often used.

Work done: Our study focused on a 1st year block. We have identified four different types of MC item formats that were grouped in two classes: conventional MC class and non-conventional MC class. After students' assessment, the difficulty and the discrimination indexes were calculated (n=156).

Results: The mean results for conventional MC class (n=85, 54%) were 52±22 (43%) and 0.29±0.16 (54%) and for non-conventional MC class (n=71, 46%) were 34±20 (59%) and 0.22±0.17 (78%), respectively. Distribution studies were performed too.

Conclusions: In our study, the difficulty mean of the conventional MC questions is at a recommended level, the non-conventional being excessively difficult. The conventional MC questions seem to be more discriminative than non-conventional ones, although there is a large values deviation in the latter class.

Take-home messages: This indicates the importance of understanding the weaknesses of the assessment analysis and to indicate how to improve it. One the other hand, this analysis is quite useful to guide the writing of MCQs.

60/P3 MCQs to support “focused” learning
Christina Strydom (University of the Western Cape, Faculty of Dentistry, Tygerberg, 7505, South Africa)

Background: Last year's students at our dental faculty had access to a multiple-choice question (MCQ) data base containing 1500 MCQs as a study aid in the subject of Dental Materials. The motivation behind the MCQ data base was to: 1) involve students in the creation of some of their study and assessment material; 2) support more focused patterns of learning, e.g., that it would help students to (1) learn the more detailed "must-know" facts of the subject; (2) engage with difficult concepts; and (3) study more efficiently. The aim of this evaluation was to explore students’ opinions on the usefulness of the MCQ data base as a study aid.

Work done: 77 of a class of 103 students (74.7%) completed a self-administered questionnaire containing close-ended responses and three open-ended questions.

Results: Most of the students agreed that the MCQ data base helped them to study more effectively (79%). Students reported that the data base improved their factual knowledge (70%), and their conceptual knowledge (64%). Content analysis of the students' comments on the MCQs identifies additional benefits.

Conclusion/Take-home message: The MCQ data base helped the students to understand and learn the prescribed course work and to study more effectively.

60/P4 Process to improve quality of multiple choice questions in 'integrated to clinical science’ in outcome-based curriculum
Usa Siriboonrit*, Suchada Anotayanonth (Chonburi Medical Education Center, Chonburi Hospital, Chonburi Sukhumvit Road, Meung Chonburi, 20000, Thailand)

Background: ‘Integrated to clinical science’ is a new course in the new outcome-based curriculum. Multiple choice questions (MCQs) were used for assessment. What are the interventions and how can the objective to improve the standard of MCQs be achieved?

Work done: The aim was to estimate quality improvement of MCQ after multifaceted interventions. Before implementation (100 items), topic instructors self-revised their MCQs. An interactive training workshop and guidelines modified from Thai National Board of Medical examination recommendation were implemented after the first assessment. Then, the committee including instructors from various departments revised the last 100 items. The quality of MCQs was graded as ‘acceptable and unacceptable’ based on the guideline, analyzed and compared in terms of taxonomy (recall/application of knowledge), negativity, true/false type lead in, one best answer, homogeneity and overall quality using SPSS version 15.0. Chi-square test (X2) was used at significance level 0.05.

Results: Improvement of taxonomy (X2= 6.1, p = 0.01), negativity (X2=9.8, p = 0.002), true/false type lead in (X2= 7.77, p = 0.009), homogeneity (X2=8.79, p = 0.003) and overall quality of stem (X2=12.5, p = 0.005) were significantly demonstrated.
**6O/P5 Are three-option multiple choice items effective?**

D. D. Harley*, R. Damant (University of Alberta, 2-76 Zeidler Ledcor Centre, Edmonton, Alberta, T6G 2X8, Canada)

Background: There is little evidence to answer the simple question “How many options should a multiple choice item have?” Multiple choice items commonly have 3, 4, or 5 options. In order to mitigate the effect of guessing, some argue that 5 options are preferable. A recent study suggested the optimal number of options for a multiple-choice item is 3. However, others authors propose the answer to the question depends upon the inherent quality of the items themselves.

Work done: Multiple choice items containing either four or five options were harvested from two different preclinical-medical examinations, each of which was sat by approximately 130 students. The number of options for each item was reduced to three following the first administration; the new version of each item was then re-administered the following year.

After the first administration, items were assigned to one of three categories based on technical quality. Performance of individual items was compared by evaluating the following characteristics: item difficulty, point biserial correlation and classical discrimination. Changes in the performance of individual items within quality category as well as movement of items between categories were used to determine the overall impact of reducing the number of options.

**6O/P6 Paper-versus computer-based modified essay question tests**

Thorstien Schäfer*, Andreas Burger, Bert Huenges, Herbert Rusche (Ruhr-University Bochum, Medical Faculty, Bureau for Study Reforms, UHW 10/1013, D-44780, Germany)

Background: We wondered whether the implementation of computer-based modified essay question tests (MEQ) led to a reduction in the flow of words compared with the paper-based version.

Work done: Two cohorts (n=41, m=35) of students in their first semester of medical studies in an integrated, problem-based curriculum, performed identical formative 20 question MEQs, either in a paper-pencil or a computer-based format. The “flow of words” was analyzed by word counts of the students’ answers to 7 questions, 2 of general medicine, 1 biology, 1 physiology, 1 biochemistry, 1 psychology, 1 radiology.

Results: There was no significant difference between the total word counts of the paper-based (P) and the computer-based (C) versions (P: 179 ± 77 words, C: 223 ± 128 words, P=0.08). Two answers were significantly longer in the computer-based MEQ compared with the paper version (P: 9 ± 7 vs. C: 18 ± 17 words; P: 21 ± 11 vs. C: 41 ± 29 words). The remaining 5 answers did not differ significantly with respect to the number of words.

Conclusion: Switching from a paper-pencil to a computer-based format of essay question tests does not lead to a reduction of the flow of words in medical students in their first semester.

**6O/P7 A comparison of the assets and drawbacks of three different written assessment types**

Volkhard Fischer*, Daniel Möbs, Johannes Vor dem Esche, Hermann Haller (Hannover Medical School, Carl-Neuberg-Str. 1, OE 9103, Hannover, D-30623, Germany)

Background: Our curriculum separates each academic year into three terms. Within each term the lessons and courses are blocked in subject-oriented modules with a duration from one week to ten weeks. Each module has at least one assessment. Because more than 80% of these assessments were written assessments we were searching for an economic utilisation of resources.

Work done: Restricting ourselves on multiple choice questions we compared three systems. 1) Classical written assessments with a manual examination of the answers. 2) Written assessments with scanable answer shefts and a computer-based reporting. 3) Server-based assessments in a Citrix environment with laptops. The criteria for the evaluation of the economic utilisation of resources are needed human resources, investment costs, total time need per assessment. A special aspect was the assessment quality.

Conclusions: The server-based assessment has the highest investment costs and only moderate need for human resources. Examining multiple choice questions there are only minor advantages for this system compared to the other two in the economic utilisation of resources.

Take-home messages: The server-based system has the greatest potential for development and outclasses the other two in trustworthiness.

**6O/P8 Importance of using images in written assessments**

Diana P. Montemayor-Flores*, Nancy E. Fernandez-Garza (Facultad de Medicina de la Universidad Autonoma de Nuevo Leon, Apartado Postal 3-4121, Monterrey, Nuevo Leon, 64420, Mexico)

Background: MCQ are the most used in written assessments, however the inclusion of images in them is still limited, in spite of the fact that sometimes the question requires an image interpretation, as is often the case in morphology, dermatology and radiology courses. In these cases, instead of using an image, the question includes the interpretation, making it impossible to know if the student is able to interpret the image or simply recognizes the written description.

Work done: In the Medicine School at the UANL, we are promoting the use of images in MCQ, avoiding the description of any type of data that can be represented with an image. At this time, 100% of the questions in the Cellular biology course include an image, and its use is increasing in Anatomy, Development biology, Dermatology, Radiology, and others.

Conclusions: Assessment must be as near as possible to clinical practice. When a physician sees a patient there is no written description of his/her injuries and the physician has to interpret what he/she sees, so that the inclusion of images in written questions approaches more the clinical practice.

Take-home messages: The inclusion of images in written exams allows a better assessment of students’ competencies.
**60/P9**  Progress test: is it a predictor of students’ academic performance?

S Monte-Alegre, E Amaral, S M R Passeri, R Curvo-Leite, A M B Zeréfrino (Universidades Estadual de Campinas - UNICAMP, Rua Tessália Veirá de Camargo, 126, 13083-970, Brazil)

Background: The aim of this study was to correlate learners’ progress test scores (PTS) with their academic coefficient (AC).

Work done: At the end of 2006, 660 medical students from a six-year medical school were invited to take the test, consisting of 120 multiple-choice questions, distributed among 6 topics (Pediatrics, Ob&Gyn, Internal Medicine, Surgery, Public Health, Basic Sciences). Each student's PTS was correlated with his AC, a final year score resulting from the grade of each discipline versus the proportion of hours into the curriculum. Correlation between students' scores and their PC was measured by Pearson coefficient. A total of 355 learners took the test (82.6%).

Results: The average of correct answers showed a stepwise increment from Y1-2 to Y6, ranging from 34.5% (Y1) to 64.4% (Y6). There was a weak to moderate correlation between PTS and AC for Y1 to Y4, but none was observed for Y5 and Y6.

Conclusion: The progress test was effective in reflecting academic performance during the course years more focused on cognitive knowledge, but not during full-time clerkship years, when elaborated clinical competences predominate.

Take-home messages: Progress test should continue to be applied to identify cognitive knowledge improvement through course years, and to motivate students on active learning.

**60/P10**  Experiences with an innovative portfolio-based assessment format for Prevention & Health Promotion: students’ acceptance and correlation with written test

B Huenges, M Klock, D Osenberg, T Schäfer, H Rusche (Büro für Studienreform, Medizinische Fakultät, Ruhr- Universität Bochum, Bochum, 44801, Germany)

Background: During their 5th semester 74 students of two cohorts generated a Poster on a topic of prevention and health promotion and presented them in a session. Additionally a thesis paper on the poster’s topic had to be created. Both tasks were assessed by at least two independent raters using a checklist, leading to the student’s mark for ‘prevention and health promotion’. The project’s goals is to foster students’ deep, reflective learning on the basis of creative Portfolio tasks.

Work done: The aim of study is to investigate the validity of assessment and students’ acceptance of the project. Posters as well as papers are rated separately by at least two jurors, using a structured checklist. Validity of assessment results is investigated by comparing posters’ and papers’ ratings with results of simultaneously performed written assessment of preclinical and clinical knowledge.

Results: Overall results of papers and posters correlate significantly with students’ written test results for clinical and preclinical knowledge (R² 0,136; p < 0,01). Students experienced the task as challenging and did not want to change to the traditional lecture – exam format.

Conclusion: Creative portfolio tasks using students’ poster presentations are useful to assess Prevention & Health promotion in undergraduate curricula.

**60/P11**  Assessment by portfolio in the physiotherapy programme at Karolinska Institutet

Cecilia Fridén*, Birgitta Nordgren (Department of Neurobiology, Care Sciences and Society, Division of Physiotherapy, 23 100, 141 83 Huddinge, Sweden)

Background: The physiotherapy programme at the Karolinska Institutet has recently adopted a new curriculum. New syllabi are created for the courses included in the programme to support a constructive view, which enhances student learning and reflective thinking. It is well known that the examination governs the students’ learning so that it is important that the examination is well aligned with the learning outcome and the content of the course. The portfolio method supports reflective thinking and learning and it will help the student to relate their new knowledge to previous experiences and link theory and practice in a better way.

Work done: The portfolio method was introduced in the course ‘Physiotherapy 3-Exercise’. When creating the portfolio the learning outcomes were thoroughly reviewed and health promotion and presented them in a session. Additionally a thesis paper on the poster’s topic had to be created. Both tasks were assessed by at least two independent raters using a checklist, leading to the student’s mark.

Conclusions: The examinations showed that the students were content with the portfolio method and we understand the portfolio work as it enhances a more active, deep approach to learning.

**60/P12**  Evaluation of group portfolio in significant learning of students of the 2nd year of medicine, during the years 2004, 2005 and 2006, in community work, Universidad de Valparaiso

Peter McColl*, Jorge Gregoire, Ernestina Esparza, Carolina Reyes, Silvia Ulloa, Katherine Cuevas (Escuela de Medicina Universidad de Valparaiso, Pedro Montt 217 Vila del Mar, 2523863, Chile)


Work done: Ten groups of 6 students carried out community work during one academic year and were evaluated by group portfolio. At the end of the course, a questionnaire was applied with closed answers on the Likert Scale.

Results: Evaluation of questions

<table>
<thead>
<tr>
<th>5 – 4 points</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a study tool</td>
<td>50.0%</td>
<td>59.6%</td>
<td>79.3%</td>
</tr>
<tr>
<td>Contributed to my significant learning</td>
<td>55.2%</td>
<td>54.9%</td>
<td>93.1%</td>
</tr>
<tr>
<td>As a tool for evaluation of learning</td>
<td>50.0%</td>
<td>68.4%</td>
<td>81.0%</td>
</tr>
<tr>
<td>Contributes to reflection on academic work</td>
<td>57.0%</td>
<td>64.9%</td>
<td>87.7%</td>
</tr>
<tr>
<td>Contributes to team work</td>
<td>69.0%</td>
<td>70.2%</td>
<td>91.4%</td>
</tr>
<tr>
<td>Use portfolio again next year</td>
<td>56.9%</td>
<td>61.4%</td>
<td>91.4%</td>
</tr>
</tbody>
</table>
6O/P13 Student and staff opinions of reflective writing as a medium for portfolio learning
J Shacklady*, A Prop, E Driesen, C Austin, T Doman (Salford Royal Hospital NHS Trust (Hope Hospital), NW 2 Teaching Block, Ladywell Building, Stott Lane, Salford, M6 8HD, United Kingdom)
Background: Explore the spectrum of opinion on portfolio use in undergraduate medical education.
Work Done: To maximise variation, undergraduate medical students, portfolio facilitators, and clinical mentors wishing to express any opinion about portfolio learning were invited to identify themselves. 26 participated in 7 staff or student focus groups. Data were transcribed and analysed qualitatively.
Results: Many junior students could not see the point of writing reflectively about experiences they were already thinking and talking about. Some more senior students were more positive but others spoke reflectively about how they found reflective writing an unproductive chore. Some senior students made “reflective” portfolio entries only because it was a prerequisite for residency selection. Students reported that mentors who themselves kept a portfolio were more effective. Staff spoke positively about how reflective writing helped students analyse their experiences more critically, improved self awareness, and highlighted learning points for future development, but spoke less about its drawbacks.
Conclusions/Take-home messages: Whilst staff held uniformly positive opinions about portfolio learning, some students saw it as a hegemonic system which did not help them learn. The reason why some students dislike reflective writing deserves further study.

6O/P14 GP's specialist exam: What can be assessed by portfolio?
M Vrcic-Keglevic*, M Katic, H Tiljak, D Lazic, V Cerovecki-Nekic, G Petricek, Z Ozvacic (School of Public Health “Andrija Stampar”, Rockefellerova 4, Zagreb, 10000, Croatia)
Background: The specialist exam for General Practitioners in Croatia is comprehensive. Besides the written essays, MCQ and EMQ test and oral exam in front of a three member jury, portfolio is used as an additional assessment method. Assessment of the portfolios is done by each member of the jury independently, employing predefined criteria and guidelines. They use a marking sheet to insert their assessment grades. One day before the oral exam the examiners meet and discuss the trainee’s portfolio.
Work done: Because we look at the portfolio as a sample of learning evidence collected over time, we decided to assess a quantity, the number of evidence, and the quality of 4 learning outcomes. First, is acquisition of knowledge, comprehensive skills and attributes. Second is developmental achievement, a demonstration of the development of learning outcomes during the time. Third, is individual professional clinical practice, because portfolios are good examples of work-related activities, examples of clinical situations, case presentations or organisational activities. Fourth is the ability to reflect on, to evaluate the trainee’s own professional activities, and the ability to be reflective practitioner. Each learning outcome is graded as: 1) definitive fail; 2) marginal fail; 3) satisfactory; 4) very good; 5) excellent. The same grades are applied for overall assessment of the portfolio. During the presentation, we would like to share our experience with colleagues to see whether there are any other possibilities for qualitative assessment of portfolios.

Open answers: Contributes to the integration of the knowledge acquired in other subjects. Stimulates the development of companionship and solidarity.
Conclusions: The evaluation of the group portfolio improved significantly. The changes introduced were positive.
Take-home messages: For the 2007 version, methodical training workshops will be applied to the tutors. Workshops will be carried out to improve the integration of the theoretical contents of the course.

6P Curriculum development and change

6P/P1 From fragmentation to continuity – an educational approach within patient-centred settings
Jette Steenberg Holtzmann*, Torben Sejr (Glostrup University Hospital, Capital Region of Denmark, Department of Development, Ndr. Ringvej, 2600 Glostrup, Denmark)
Background: It is seldom explored how to create educational approaches that develop the competences needed by the medical staff to meet the demands of continuity and patient-centred care. Our project focuses on this and how supervisors can develop new educational approaches for the students and post-graduates.
Work done: The project consisted of three phases. A literature review and a study trip to London for the four participating departments in order to gather knowledge and create an inter-disciplinary collaboration. The second phase consisted of developing and trying-out different models. Thirdly knowledge and experience spreading to the rest of the hospital.
Results: Development of: Inter-disciplinary team-work, creating learning environments, learning from the patients’ perspective and experience, focuses on the case managers’ competence development, patient path-ways across organisational boundaries.
Conclusions: Inter-disciplinary competences in conjunction with organisational are essential factors to enhance the continuity in both education and in patient-centred care. The project contributed with knowledge and experiences in an emerging field.
Take-home messages: The collaboration between medical staff working and teaching in clinical settings and educational consultants has been beneficial in order to develop new methods and reduce some of the fragmentation within educational courses.
6P/P2  “Who participates in planning a new curriculum – students are welcome!”

P Kraft*, S Reinsch, D Schricke (Reformstudiengang Medizin, Chariteplatz 1, Berlin, 10117, Germany)

Background: The Charité Universitätsmedizin Berlin is currently undertaking a reform of the medical curriculum as a synthesis of the elements of its two tracks, the Reformed Curriculum track (RMIC) and the Traditional track. Students’ participation is encouraged by the faculty members, but compared to their numbers only few students became active.

Work done: Since attending the curriculum’s design commission means lots of additional work, we wanted to assess the students’ motivation for participating. Therefore we used a web-based questionnaire, which was completed by 500 students of all terms and interviewed those 24 students who actually attended the commission’s meetings.

Results: Our findings from the questionnaire showed a balance between curricular elements the students preferred to maintain and elements they wanted to be modified. Among the actually active students in the meetings, the majority reported that positive experience during their studies was their main incentive to participate. Of the active students two thirds were male and the majority came from higher terms. Remarkably 80% were from the RMIC.

Conclusions: Our results suggest that positive experience motivates students to face the additional workload of curricular design. Males are overrepresented.

6P/P3  UME curriculum reform in Shahid Beheshti Medical School and WFME Standards

A Zali*, S H Hazdani, F Hosseini, A Rajaie, Ha’eri (Shaheed Beheshti University of Medical Sciences & Health Services, Evin, Chamran Highway, Tehran, 19395, Iran)

Background: The traditional UME program of Shahid Beheshti Medical School witnessed a radical change in 2004 with a new curriculum which was planned based on comprehensive case study of reforms throughout the world and operationalization of SPICES strategies in alignment with WFME international standards.

Work done: This curriculum has four phases and includes different interventions to foster vertical and horizontal integrations in basic science phase (organ system based) clerkship rotations and internship phase. Also there is an obvious emphasis on education of clinical skills in skill center. Community exposure courses are offered as several longitudinal modules from the first phase throughout the program with the main goal of these courses being community health risk assessment and planning proper interventions. The students are allowed to choose 10% of their units from elective courses and can also attend related special elective courses which make different orientations.

Conclusion: The numerous and various interventions and wide integrations have made this curriculum a sophisticated educational program which required a specified educational management structure and more importantly an accurate change management. After 2.5 year of implementation what has happened so far indicates the success of the program.

Take-home message: The basic rationale and requirements for UME curriculum reform is almost the same in developing and developed countries.

6P/P4  Using an on-line collaborative database to update core curriculum content: evaluation of a novel approach

Peter Yeates, Caroline Boggs, Iain Davies (University of Manchester Medical School, ATR4, Education and Research Centre, Wythenshawe Hospital, Southmoor Road, Wythenshawe, Manchester, M23 9LT, United Kingdom)

Background: Manchester medical school’s core curriculum is organised around 215 Index Clinical Situations (ICS) – core conditions that the new doctor should know. This list of ICS was developed 10 years ago; use has highlighted areas that may be improved. Currently we are piloting the use of a novel on-line collaborative database to allow clinicians who are temporally and spatially separated to interact and develop this core curricular content.

Work done: Following use of this on-line collaborative system, agreement with item inclusion in the final list is rated by participants. For each item generated, frequency of interaction by participants and number of involved participants is recorded. Correlation between these and participant item inclusion ratings is examined. On-line environment and usability are assessed. Philosophical comparison between this method and more established consensus methods is made.

Conclusions/Take-home messages: This novel methodology represents a useful approach to collaborative curricular development. By rolling out this method, we hope to engage a wide number of clinicians from different specialties in ongoing core curricular development.

6P/P5  Impact of the transition from a traditional to a hybrid medical curriculum on students’ learning patterns: a longitudinal study

J Van der Veken (Ghent University - Direction of Educational Affairs, Department of Educational Quality Assurance, St Pietersplein 7, 9000 Gent, Belgium)

Background: Until now, most research studying impact of curriculum innovations on student learning patterns was restricted to short term of cross-sectional research.

Work done: In this study, a longitudinal design was adopted. In addition, treatment fidelity was checked to compare the planned, implemented and experienced curriculum.

Results: Although not all hypotheses could be confirmed, the results suggest significant effects of the hybrid medical curriculum on learning processing strategies, learning regulation strategies, and on learning orientations. The clear build-up of the curriculum and vertical and horizontal integration of subdisciplines and knowledge seem to have significantly reduced lack of regulation and to promote at an earlier stage in the curriculum structuring, relating, critical processing and vocational-orientation. The effect on use of sources of knowledge, self-regulation of learning content and certificate-orientation appeared only in the 4th hybrid curriculum year and was less important as expected. It is not yet possible to confirm the hypothesis that students in the hybrid curriculum become better in translating study topics into their own phrasing or expressions; and neither the expected impact on vocation-orientation could be confirmed.

Conclusions: There is little doubt that the present results are important to curriculum (re)designers and those interested in evaluation of curriculum reforms.
6P/P6  **Transporting curriculum across borders: beyond geography**  
John Steeves*, Karen Mann, Bruce Holmes (Dalhousie University / Atlantic Health Sciences Corp., Department Medical Education, 400 University Avenue, Saint John, New Brunswick, E2L 4L2, Canada)

**Background:** Dalhousie Medical School, in Canada received a “Request for Proposal” to deliver an undergraduate medical curriculum to another province in affiliation with a second undergraduate university, for delivering it in four health care regions.

**Work done:** Working within a required 10 week time limit, a working group representing universities, government, and health care regions produced a zero-based funding proposal for implementation of a distributed undergraduate curriculum. We identified the importance of 1) planning to distribute an existing “accredited” curriculum, while being sensitive to contextual needs; 2) identification of curriculum elements needing special consideration; 3) careful attention to partnership identification and building, ownership and “buy-in” by all stakeholders; 4) planning for technology to provide infrastructure for learning, teaching and governance; 5) attending to faculty and site development.

**Conclusions:** Several unique challenges to curriculum planning, particularly relationship building, added layers of complexity not encountered in single-site curriculum development.

**Take-home messages:** The development of a plan to distribute an entire undergraduate medical curriculum proved complex, requiring the support and contribution of many stakeholders. Attention was required to educational needs and to social, economic and political realities. The resulting plan will result in an improved curriculum in both existing and distributed sites.

6P/P7  **Challenges of establishing a new innovative medical college in the Kingdom of Saudi Arabia**  
Y Al Eissa, M Magzoub, B Hamad, F M Seefeldt (King Saud bin Abdulaziz University for Health Sciences, College of Medicine, Riyadh 22490, Saudi Arabia)

**Background:** The College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia adopted a four year PBL web-based graduate medical program adapted from University of Sydney. The College accepted its first batch of students in 2004. Many challenges were faced by the newly established Medical College including curriculum design, faculty development, student preparation, partnership with the existing hospital, and organizational structure. The aim of this paper is to identify these challenges and to explicate how we responded to these challenges.

**Work done:** This study utilizes focus group discussions, interviews with stakeholders, student questionnaires, and faculty interviews.

**Results:** Results have shown that the college completed its first two years successfully, by establishing flexible organizational structure. Strong faculty development programs were initiated in all educational areas. Strong collaboration was instituted with the existing hospital by allowing “those who serve to teach” and “those who teach to serve”. The PBL and web-based curriculum at Sydney was adopted as a starting point and adapted to fit the local culture and circumstances.

**Conclusion/Take-home message:** Strong leadership, improved organizational structure, dedicated and experienced faculty, and enthusiastic students represent in aggregate the greatest strength of a newly established college in meeting its continuous challenges.

6P/P8  **Use of future workshop procedure for promoting quality of education in Medical Sciences**  
M Motalebi Kashani*, M Hannani (Kashan University of Medical Sciences, Ghotb Ravandi Blvd,Kashan, 8715987793, Iran)

**Background:** Future workshop is a sociologic and pedagogic method for identification of a common problem, development of a vision, ideas and action plan among the group of people concerned. The present study was carried out in Kashan University of Medical Sciences to determine the efficacy of the method for promoting quality of education in the health faculty.

**Work done:** During this experimental study 40 students in the health faculty were included. They were selected through simple sampling. Future workshop process was conducted in five phases (1- preparation phase, 2-experience phase, 3-fantasy phase, 4-strategy phase, 5-action phase) with this theme: “How can the quality of education in the faculty be improved?” Phases 2, 3 and 4 were the main part of the actual workshop.

**Conclusions:** After the workshop a complete report which includes all the critical problems in education (such as improper curriculum planning and teaching methods), fantasies as well as program plans proposed by participants was prepared and followed up.

**Take-home messages:** Results have revealed the future workshop procedure is a reliable method for promoting quality of education and it is strongly recommended to use this method in medical sciences universities.

6P/P9  **Using a comprehensive program evaluation system to facilitate planning and decision-making in an innovative College of Medicine**  
*F M Seefeldt, N Ahmed, A Arshad, Magzoub (College of Medicine, King Saud bin Abdulaziz University of Health Sciences, P.O.Box 22490, Riyadh, 11426, Saudi Arabia)

**Background:** King Saud bin Abdulaziz University College of Medicine in Riyadh is a three year, hybrid PBL program using lecture and demonstrations with tutorial groups, and an integrated, web-based curriculum. It currently enrolls 85 students in its first three batches and supports its progressive philosophy with a large, experienced Department of Medical Education housing an extensive Program Evaluation Unit. The Unit has developed a systematic evaluation program to serve both formative and summative needs.

**Work done:** A wide variety of data-gathering strategies is employed in the evaluation program, including questionnaires, interviews, and group meetings. All are geared, through various report mechanisms, to respond to emergent program needs in a timely fashion. An overview of each - data source, method, content focus, and audience - is presented.

**Results:** Results are presented in categorical fashion, organized according to program components addressed as part of the overall plan. The more important and consistently arising findings and problems are discussed.
6P/P10  Student involvement in curriculum development at the University of Helsinki
Velina Vangelova*, Sonja Pihlpo, Marienka Lindqvist, Juho Parkkola, Eeva Pyryälä (Faculty of Medicine, University of Helsinki, Ruoholahdenkatu 20 R 112, 00180 Helsinki, Finland)

Aim: The aim of our project is to describe the model of student involvement in curriculum development processes in the Faculty of Medicine at the University of Helsinki and to identify the main challenges for further development.

Work done: We have outlined the structure of student involvement in different boards and committees in the Faculty of Medicine. Student representatives are chosen through the medical students' organisations and they are involved in curriculum planning at all levels of the faculty administration. Student representatives actively participate not only at the decision-making level but also at the preparatory stage of curriculum development as members of various working groups. All students contribute to curriculum development by giving web-based course-specific feedback. The feedback rate is high, about 80%. In order to better contribute to the improvement of medical education, up-to-date and detailed information about student feedback would be required.

Conclusions: The student involvement system functions well although it often depends on each student representative's personal eagerness to contribute. The main challenge is to develop the feedback system so that the information it provides would better reach the students and be considered in curriculum development processes.

6P/P11  The experience of integrated curriculum reform in Kaohsiung Medical University in Taiwan
Chun-Sheng Lai, In-Ting Huang, Ai-Li Kuan, Ke-Ming Liu (Kaohsiung Medical University, 100, TzYou 1st RD., Kaohsiung City, 807, Taiwan)

Background: The previous basic science curriculum in KMU was the discipline-based courses such as anatomy, physiology, microbiology, parasitology, biochemistry, pharmacology, and pathology, which were arranged according to individual departments but excluded clinical medicine courses. The renovation of our new basic-clinical medicine curriculum was reformed based on the organ systems instead, modified from the Ottawa University System, which began in 2004. Managed by the Basic-Clinical Medicine Curriculum Committee, fifteen blocks have been organized to a two-year curriculum and began in 2005. In this case, each block organizer was responsible for the horizontal coherence and vertical interaction of the courses. Teachers and students who were interested in the new curriculum were invited as representatives for a series of intensive meetings. In the past two years, both teachers and students had resisted strongly to the change, which were addressed by frequent communication and immediate feedback to each other. In this case, the block organizer played an essential role during the communication. Currently, the students could attend fewer lecture-based but more skill-based classes and learn to become self-directed learners.

Conclusions: Despite the initial resistance by teachers and students, the new curriculum benefited both parties in a short duration of operation.

6P/P12  How do medical schools contribute to their regions? Ten questions with a case study
James Rourke (Memorial University of Newfoundland Faculty of Medicine, Dean of Medicine, Health Sciences Centre, St. John's NL, A1B 3V6, Canada)

Background: Medical School contributions to their regions are a key component of social accountability/responsibility (WHO and Health Canada).

Work done: Ten main questions have been developed to focus on how a Medical School contributes to its region: (1) Do students from the region get admitted into Medical School MD (medical doctor) education programs? (2) Do medical students get appropriate medical education - high quality - relevant to the regional context? (3) Do MD graduates of the Medical School subsequently practice in the region? (4) Do MD graduates get appropriate post graduate residency training - high quality - relevant to the regional context? (5) Do MD post graduates subsequently practice in the region after completing their residency training? (6) Do practicing physicians in the region get appropriate professional development - are they involved in the MD program and post graduate residency training programs - do they participate in needs based continuing medical education? (7) Do Health Scientists get trained - in the region - for the region? (8) Does research benefit the region - amount of activity - relevant to regional context? (9) Does the Medical School contribute to the health care and health of the region - physician resources - level of care - quality of care? (10) Does the Medical School contribute to the economic well being of the region?

Conclusions: A case study approach using Memorial University of Newfoundland, Canada demonstrates how medical schools can use this ten question tool to assess how they contribute to their regions.

6P/P13  Survey of the organization climate relation with the rate of personnel's creativity in the university clinical educational sectors
S Hajiaghajani*, P Ghaffari, R Ghorbani, F Izadi, M R Ghaffari (Semnan University of Medical Sciences, Medical Educational Development Center (MEDC), Iran)

Background: Each organization has a responsibility and special objectives for political, cultural, economic and social development. Universities play an important role in health of the people. We have evaluated the organization climate relation with personnel creativity.

Work done: This is an analytic and descriptive study. 210 cases working in the education units were chosen randomly and systematically in each unit as a samples. 75 questions containing 5 in demographic characteristics, 20 in climate organization, and 50 in creativity were included. Data were analyzed through SPSS. To determine the relation of variations and creativity with climate organization, Chi–square test, Spearman correlation coefficient, T student and Mann-Whitney Tests were used.

Results: Most were females (60%), bachelor degrees (53.2%). 46% were satisfied with the organization climate. Statistical tests showing the meaningful relation between organization climate (P= 0.020) with the personnel's work-place and their academic levels (p=0.009). 3% of the whole samples had creativity. Statistical tests showed that creativity has no meaningful relation with organization climate.
Conclusion: All managers ought to consider the results of this research to reach the organization objectives by providing a situation that the employees can present their comments in decision making and share in finding the solutions for problems to open their creativity.

6P/P14 The problems of higher medical education in Republic of Kazakhstan
S F Berkinaev, G N Kismanova (West Kazakhstan State Medical Academy after M. Ospanov, 68, Mayeseyev Street, Aktobe City, 030019, Kazakhstan)

The difficulties faced by higher medical education in Republic of Kazakhstan are: (1) The increase of competitiveness and the quality of study; (2) The development of new profiles and specialists; (3) The development of new ways of education (e-learning); (4) The assessment of a quality of medical institutes and their graduates.

The challenges to improvement are: (1) An invariance of an education which influences the learning; (2) Absence of an alternative system to evaluate the quality of higher education; (3) Minimum possibility of interdisciplinary training; (4) Imperfect educational standards and absence of continuity in relation to previous and future standards.

The ways of development of higher professional education are: (1) Every higher educational institution is to have definite educational plan and educational objects; (2) The higher educational institution should have the right to work out educational programs, practices and educational standards of higher educational institutions on the basis of state obligatory standards of education; (3) The higher educational institution should be given the right to liberal plans for development of educational programs which aim at a certain amount of free choice of modules (objects) and the sequence of their learning; (4) It is necessary to work out a system oriented to the assessment of a quality by developing educational programs and outcomes of knowledge and skills; (5) At a state level it is necessary to organize state control of literature (books).

6R/G1 Peer group teaching: from boring lectures to buzzing peer groups
Julia Blitz, David Cameron, Marietjie van Rooyen, Glynis Pickworth (Department of Family Medicine, PO Box 667, Pretoria 0001, South Africa)

Background: Lecture-based, didactic teaching was transformed into peer group teaching in the five-week Health and Health Care block in the fifth year of the University of Pretoria MBChB programme. The class of 200 students was divided into eight groups. Each group became experts on one of eight themes (Chronic disease, Pain management, Palliative care, Mental Health, Managed care, Forensic medicine, Emergency medicine, and AIDS & TB) which they in turn taught to a group of 26 peers.

What will be demonstrated: Visitors to the stand can experience the whole process of planning, implementation and evaluation of this transformation. Strategies for dealing with resistance to change will be addressed.

Intended audience: Medical teachers who wish to explore peer group teaching as an alternative to a didactic teaching approach.

6R/G2 Small groups, computers and microscopes for micromorphology learning and teaching
Maryse Fiche*, Raphael Bonvin*, Fred Bosman (Faculté de Biologie et Médecine, Université de Lausanne, Bugnon 23, Lausanne, CH-1011, Switzerland)

Background: Significant changes have occurred during the past two decades in Anatomic Pathology and Histology courses worldwide. Advances in computer technology and curricular changes both drove this evolution. Micropolis is an innovative approach for micromorphology laboratory classes. Using small groups, computers, and microscopes, Micropolis takes advantage of technology improvements to promote student-centered interactive case-based micromorphology learning.

What will be demonstrated: We will present how Micropolis has been designed and implemented since 2004 at the Lausanne University Medical School and discuss its strengths, weaknesses, and potential.

Intended audience: We want to share this innovation especially with medical educators with a responsibility in Anatomic Pathology or Histology programs. Micropolis might be a good idea also for other medical schools facing the problem of the renewal of their microscopy laboratory classes.

6R/G3 Facilitated reflection: a strategy for aiding feedback acceptance and use
Joan Sargeant*, Karen Mann, Jocelyn Locker (Dalhousie University, CME, 5849 University Ave, Halifax, NS, B3H 4H7, Canada)

Background: Attention has been directed toward providing effective feedback to learners; i.e., feedback which is specific, timely, relevant, non-judgmental, and engages the learner’s perspectives. However, accumulating evidence indicates that recipients of negative feedback are less inclined to accept or use it and may even become de-motivated. This suggests that learners most in need of using feedback constructively, may not use it. Other sources suggest that reflection upon feedback may enhance its assimilation and acceptance, and that facilitated reflection can bridge the gap between the “giving” and “receiving” of feedback. Further, specific approaches to facilitate reflection on feedback can be taught and learned.

What will be demonstrated: This demonstration is comprised of a poster, interactive materials including a quiz to test your own “Feedback and facilitated reflection” knowledge and skills, and handouts. Participants will be able to: (1) Review research findings related to acceptance and use of performance feedback; (2) Identify rationale for reflecting upon feedback; (3) Identify and test strategies for facilitating learners’ reflection upon their feedback and enhancing its ultimate acceptance and use.

Intended audience: Educators, clinical preceptors, and trainers interested in enhancing feedback use by learners at all levels of education.
6R/G4  Providing effective feedback in medical education
Patricia Mullan*, Linnea S Hauge* (University of Michigan, Department of Medical Education, 1500 E. Medical Center Drive, Ann Arbor, MI 48109, USA)

Background: Feedback is an important means of facilitating performance improvement for all levels of learners, and effective feedback is critical to novice physicians’ skill development. Medical students and residents report that they need, but do not receive, timely and effective feedback. Faculty members report that they have not received training in eliciting and providing behavioral-based feedback. The purpose of this workshop is to provide participants with principles and strategies for effectively giving feedback and anticipating feedback responses.

What will be demonstrated: Upon completion of this demonstration, participants will be able to (1) describe and demonstrate principles of effectively providing and receiving feedback; (2) outline characteristics important to constructively receiving and responding to feedback, and (3) identify and apply a structured process for “training the trainer” feedback education.

Intended audience: The demonstration will interest clinician educators and educationalists who have responsibility for giving feedback.

6R/G5  Case-based assessment
Martin Rhodes, Pauline McAvoy, Denis O’Leary (National Clinical Assessment Service, Market Towers, 1 Nine Elms Lane, Vauxhall, London SW8 8NQ, United Kingdom)

Background: The National Clinical Assessment Service (NCAS) helps employing and commissioning organisations in the UK’s National Health Service to manage concerns about particular clinicians’ performance which can include a comprehensive workplace-based performance assessment which incorporates a Case Based Assessment (CBA). Oral examinations in medicine are notorious for lacking validity and reliability, testing at low cognitive levels and being subject to examiner bias. By contrast NCAS has trained professional and lay assessors to plan and conduct the innovative CBA. This assesses clinicians’ clinical reasoning when managing their own patients, thereby ensuring content and construct validity. Pre-planned questions cover all domains of the General Medical Council’s document Good Medical Practice. The clinicians’ responses are judged against pre-formulated answers generated by the assessors.

What will be demonstrated: Guidelines on best practice for assessing clinical reasoning. The stand will have a poster and handouts stating good and poor practice when conducting a CBA and this will be demonstrated to those interested by a DVD with short scenes from a simulated CBA.

Intended audience: The demonstration will interest all with an interest in assessing clinicians’ clinical reasoning.

6R/G6  Critiquing outcome-based assessment plans
Rukhsana W Zuberi (The Aga Khan University, Faculty of Health Sciences, Stadium Road, P O Box 3500, Karachi, 74800, Pakistan)

Background: Students should be assessed for desired outcomes, according to reliable and valid assessment plans.

What will be demonstrated: This will be an interactive demonstration followed by a problem-identification and problem-solving exercise which takes participants through critical thinking to evaluative judgment. Participants will have an opportunity to review and critically analyze Assessment Plans for achievement of desired outcomes. They will identify weaknesses and suggest alternate plans using the concepts of Reliability and Validity. Following the demonstration, participants will be able to (1) Match objectives pertaining to different domains to appropriate methods of assessment; (2) Apply the principles of reliability, validity, objectivity, standardization and feasibility to critique assessment tools and plans; (3) Use the same principles to improve the plans to assess outcomes appropriately. Participants who obtain 8 or more of a total score of 10, on alternate revised plans will receive a token acknowledgement.

Intended audience: Anyone who is involved in designing assessments.

6R/G7  How to….. Successfully supervise a medical education dissertation
Lesley Pugsley, Janet MacDonald (School of Postgraduate Medical & Dental Education, Cardiff University, Heath Park, Cardiff, CF14 4XN, United Kingdom; Medicaleducation@cardiff.ac.uk)

Background: Over the past decade there has been an expansion of postgraduate courses in Medical Education and an increase in the numbers of students undertaking educational research within this setting. A study by a team of medical educators from the School of Postgraduate Medical and Dental Education at Cardiff University (Allery et al.2005), identified wide variance across these programmes, particularly in the quality of the research methods training and the supervisory provision. Both were seen to be major areas of concern. This research propelled us to search the literature on the topic of supervision. Both these sources have enabled us to develop some guidelines for supervisors and supervisees in order to enable them to engage in a mutually acceptable supervisory experience and to allow them an appreciation of some of the challenges inherent in supervising students undertaking medical education research.

What will be demonstrated: The demonstration provides an overview of the elements of good practice required by both the supervisor and the supervisee involved in the dissertation process.

Intended audience: Anyone involved in supervising a medical education dissertation.
Symposium 7A Why and when portfolios (do not) work in medical education

Chairperson: Erik Driessen (University of Maastricht, Netherlands)
Portfolios are widely used in medical education as tools for authentic assessment, to stimulate reflection, and/or to monitor and support professional development. The structure and content of portfolios that are used differ considerably. Because of these differences in purpose, structure and content, it is difficult to interpret the often contradicting research findings reported in literature on the effectiveness of portfolios. The aim of this symposium is to explore the challenges and opportunities offered by portfolios by discussing the question “Why and when portfolios (do not) work in medical education?” The panelists will provide their perspectives on this question and engage the audience in a dialogue on the different challenges and opportunities.

Symposium 7B Globalisation of CME/CPD

Chairpersons: Hervé Maisonneuve, (Global Alliance for Medical Education) and Margarita Barón-Maldonado (University of Alcalá, Madrid, Spain)
Panel: Bernard Maillet (UEMS, Belgium), Alejandro Aparicio (AMA), Helios Pardell (SACCME, Spain) and Honorio Silva (Pfizer, US)
Most of the European countries have set their CME system; doctors want to add credits they received abroad to their local portfolios. Mutual recognition of curriculum, credits and systems between countries has to be set up. Standards for commercial support will also be discussed by the panelists. The European Union of Medical Specialists has made many efforts to help recognition of CME credits for specialists, and to assist Eastern countries to set up their system. Mutual recognition of European credits with other continents (America, Asia, Oceania) will be the next challenge.

Symposium 7C Use of new technology to enhance learning of the foundational sciences in medical education

Chairperson: Cristian Stefan (University of Massachusetts Medical School)
Panel: John Cotter (University of Buffalo), Anca Stefan (University of Massachusetts Medical School), James Fishback and Michael Karr (Kansas University Medical Center) USA
Session organised by: International Association of Medical Science Educators (IAMSE)
Effective teaching/learning relies not only on course content and access to information but also on identifying the best ways to engage the audience. The rapidly expanding availability of computer-based technological tools allow for a variety of methods to be employed in the educational experience for our students. Several of these will be described by the panelists as examples of how these tools can be utilized to promote learning and understanding of the foundational sciences in medical education.

Short Communications 7D e-Learning: implementation 1

7D/SC1 Personal student-mentor websites to support a new Scholarly Project requirement
James B McGee*, Peter Kant (University of Pittsburgh School of Medicine, 205B Mezzanine Level, Scaife Hall 3550 Terrace Street, Pittsburgh, PA, 15261, United States)
Background: In 2005 the School of Medicine introduced a Scholarly Project curriculum requirement to promote critical thinking, analytical thought, and mentored learning. The Laboratory for Educational Technology developed personal student-mentor project websites to enhance communication, document progress, and help program administration.
Work done: The Lab designed and deployed a process and technology for students to 1) create a project website, 2) indicate a project title, 3) invite a mentor, 4) develop a project proposal, 5) review the proposal with the mentor, 6) request and receive project approval by the mentor and program directors, and 7) submit quarterly reports and a final report for comment and approval. The Lab used SharePoint (Microsoft, Redmond WA) collaboration software and custom .NET ‘web parts’ to create 300 custom websites.
Results/Conclusions: Students successfully used these project sites to complete and document the requirements of their scholarly project proposal. Program directors conveniently accessed and tracked student work, reports, and communication with mentors. An initial indicator of collaborative learning, online student-mentor discussion, was lacking, but a redesign of the websites and better coaching of mentors dramatically increased the quantity and quality of online interaction.

7D/SC2 The use of information technology for medical education among medical students
A H Fahal*, M Al Sayed, Y Maher (Faculty of Medicine, University of Khartoum, Khartoum, Sudan 0000, Sudan)
Background: Information technology is developing fast and represents the corner stone of many fields; medical education is one of the most fertile ones. The advent of computer assisted learning has provided students with a collaborative continuous environment of learning activities that would found their self learning capabilities and
simplify the most complicated issues in medical education, not to mention how much the internet and the World Wide Web contribute in updating knowledge. Nowadays many universities have put under their priority intentions to promote embracing e-learning in their educational processes, and many curricula have undergone radical changes to comply with this objective. Continuing Medical Education (CME) is a new concept that lately has been focused on as a major source for adapting with the ever changing, developing wheel of medicine and if students deal with this concept as undergraduates will surely affect their postgraduate educational activities. Still there are many questions unanswered and these include: Are technology tools and equipment available for students? Are the students skilled enough? Do they have the potential to adopt such a trend? How would they evaluate their personal experiences? Do they need guidance? Should the curriculum be modified to adapt to the new educational methods?

Work done: The study, which was done among the medical students of University of Khartoum, highlights the crucial points and answers that will help in setting up projects and implantation of new plans to catch up with the new methods and assure the benefits.

7D/SC3 eLearning in Radiology – developing a program in the real world
Poh-Sun Goh* (Yong Loo Lin School of Medicine, National University of Singapore, Department of Diagnostic Radiology, National University Hospital, 5 Lower Kent Ridge Road, Singapore, 119074, Singapore)

Background: Developing a successful eLearning program requires more than just “putting up” material online. Our team has been developing material for undergraduate and postgraduate radiology teaching over the last 4 years. We reported our initial efforts in AMEE 2004, subsequent successes in AMEE 2005, and our move toward measuring outcomes in AMEE 2006. Since then, we have focused on broadening our portfolio of teaching material, including increasing emphasis on “reusable learning objects” and promoting an open access paradigm. This is meeting with success in fostering collaboration within the specialty and in interdisciplinary projects.

Work done: We report on our four year journey in the development of an eLearning program in our institution. Emphasis on the role of prototypes in the first year, creation and use of successful models in year 2, measuring outcomes in year 3 and our efforts in the past 12 months to significantly widen the range of teaching material specifically focusing on reusable objects and open access.

Conclusions: Developing a successful eLearning program in the real world requires individual and institutional commitment and a planned developmental strategy.

Take-home messages: Sustained commitment, a developmental plan, and meticulous project management skills are required to roll out an institutional eLearning program.

7D/SC4 Using a comprehensive curriculum management system for competency-based curriculum planning and assessment
Mary Y Lee*, Susan Albright, David Kahle (Tufts University, Ballou Hall, Medford, MA, 02155, United States)

Aim: To create a comprehensive e-learning system with flexibility to link objectives, competencies, and assessment to any content, and adaptability to support multiple educational systems including traditional, hybrid and pure problem-based learning curricula - attributes critical to current medical curriculum reform.

Work done: For over a decade, Tufts University School of Medicine and Hirsch Health Sciences Library have been developing this e-learning system called Tufts University Sciences Knowledgebase (TUSK) that combines curriculum, knowledge, and learning object management. TUSK allows storage of learning objects that can be used, reused, and linked in myriad ways and accessed by students, faculty and administrators. Tufts University also created the open-source VUE tool (Visual Understanding Environment) that allows rich content mapping (concept maps with data imbedded in each node, ability to create pathways through the map, etc.) that can provide an additional method to visually track content, objectives, competencies, assessment tools, portfolios, etc.

Conclusion: Both TUSK and VUE can be combined to provide curriculum planners with dynamic tools that can track content, competencies, and assessment as a session, course, year, or across courses or years. Such tools are invaluable both during strategic planning as well as ongoing curriculum improvement and management.

7D/SC5 e-Learning as an intervention to counter shortage of teachers in India
Neera Raj*, Hariprasad Chegu, V Balasubramanyam (Medical Education Research Centre for Educational Technologies, Lalita Towers, 6-3-1089/A/3, Asif Avenue, Rajbhavan Road, Hyderabad, AP, 500004, India)

Background: There is an acute shortage of undergraduate teachers in most medical colleges in India. This project seeks to exploit e-Learning to address this problem creating a WiFi campus at each college and offering a fully bank financed product that includes a laptop with access to 5 years of curricular e-Learning content to students.

Work done: MEDRC EduTech at Hyderabad in collaboration with a consortium of technology and financial partners are developing an ecosystem that can bring about an innovative and meaningful change in medical education. Students get access to a series of digital lectures spanning all curricular subjects integrated from Anatomy to Medicine. These are delivered by Master Teachers identified from across the country which are later enhanced using rich interactive multimedia and delivered through a custom designed LMS.

Conclusions: It is sought that technology take over the repetitive “lecturing” of factual information that takes 70% of a teacher’s time, leaving the teacher free to spend more practical time and play a more meaningful role in the college.

Take-home message: Innovation through technological intervention combined with a financially sound business model could help Indian colleges overcome their faculty shortage problem and do more with the same number of teachers.
Short Communications

7E

Curriculum evaluation 1

7E/SC1 Using alumni research to assess two different educational programs at a veterinary college
Debbie Jaarsma*, Albert Scherbier, Peter van Beukelen (Faculty of Veterinary Medicine, Utrecht University, Yalebaan 1, PO Box 80163, Utrecht, 3508 TD, Netherlands)

Background: Alumni survey research provides relevant information from the unique perspective of the users of the educational product delivered to them as students and helps determine whether educational goals are met. Since the Faculty of Veterinary Medicine, Utrecht University (the Netherlands) changed its curriculum, alumni research is valuable for getting insight in the different opinions of alumni on two educational programs.

Work done: A survey instrument was designed and distributed with the purpose of obtaining information about the opinions of alumni on how well training prepared them for certain competencies (knowledge, academic skills and communication skills), on their satisfaction with certain curriculum aspects, the overall training quality, the transition between school and work and to identify missed topics. The differences in the opinions of graduates of two different educational programs were analysed.

Conclusions: Alumni from the new educational program feel significantly better prepared for all investigated competencies. The overall quality of the training is perceived as good for both programs with no significant differences. Transition between school and work is perceived as moderate to difficult by all alumni.

Take-home message: Alumni research is an important tool for outcome assessment in understanding the quality of educational programs and can be useful for assessing differences in educational programs.

7E/SC2 Graduates' perceptions of quality of educational experiences in clinical clerkships: analysis of the Association of American Medical Colleges' National Graduation Questionnaire (AAMC GQ) database
Alison J Whelan*, Dorothy A Andriole, Heather L Hageman, Donna B Jeff e (Washington University St. Louis, School of Medicine, 660 S. Euclid, St. Louis, Missouri, 63110, United States)

Background: We sought to identify variables associated with students' clinical-clerkship ratings.

Work done: We analyzed students' responses to items on the 2001-2004 AAMC GQ pertaining to students' ratings of the quality of educational experiences in six clinical clerkships in association with their age, gender and race/ethnicity, evaluations of faculty characteristics (overall involvement in teaching, sufficiency of feedback, observation of students' history and physical examination skills), and medical-school characteristics (geographic region and ownership). Students' overall mean rating of six clerkships was regressed onto the predictor variables in a multiple linear regression model (two-sided p-values reported).

Conclusions: De-identified responses from 52,715 U.S. allopathic medical graduates were analyzed. Being younger (p=.002), non-Hispanic white, male, from private medical schools and schools in the South and West, reporting better evaluations of faculty involvement in clerkship teaching and sufficiency of feedback (each p<.001) were associated with higher overall clerkship rating. Faculty characteristics accounted for 40.8% of the total variance (42.7%) of overall clerkship rating.

Take-home messages: In addition to demographic and medical-school characteristics, faculty involvement in clerkship teaching and provision of sufficient feedback, on which we can intervene to improve, were significant predictors of overall rating of the quality of students' clinical-clerkship experiences.

7E/SC3 Ten years on: evaluation of curriculum reforms at HKU Li Ka Shing Faculty of Medicine
N G Patil*, Mary Ip (HKU Li Ka Shing Faculty of Medicine, W.M. Mong Faculty Building, Sassoon Road, Pok Fu Lam, Hong Kong SAR, People's Republic of China)

Background: Faculty of Medicine, The University of Hong Kong - (renamed HKU Li Ka Shing Faculty of Medicine in 2006) introduced curriculum reforms in 1997 with a special emphasis on PBL, early clinical exposure, integrated system blocks, special study modules and reduction in didactic lectures. There was considerable anxiety and scepticism in relation to outcomes and quality of graduates who would undergo these reforms. An opinion was expressed that new graduates will have inadequate basic sciences foundation and will be unable to cope with demands related to PBL.

Work done: A written test consisting of multiple choice questions (MCQs) and short answer questions (SAQs) was given to two cohorts of old (June 2000-2001) and two cohorts of new (June 2002-2003) graduates during their pre-internship block. Evaluation of interns' performance documented every three months by supervisors was reviewed in eleven domains related to interns' on-the-job activities.

Results: There was no statistical difference in knowledge base of both curriculum graduates in basic and clinical sciences. New curriculum graduates did much better in areas of clinical judgment, communication, attendance at educational activities and professional knowledge. A further evaluation of new curriculum graduates' performance during their residency continues.

7E/SC4 Impact of medical students' descriptive evaluations on long-term course development
M Wahlqvist*, A Skott, C Björkelund, G Dahlgren, K Lonka, B Mattsson (Dept of Community Medicine and Public Health/Primary Health Care, Sahlgrenska Academy at Göteborg University, Box 454, SE 405 30, Sweden)

Background: The impact of students' feedback on long-term course development is seldom reported in medical education. In this project we studied the correspondence between medical students' descriptive evaluations and key features of course development over five years.

Work done: Qualitative content analysis was used. The context was consultation skills courses in the middle of the Göteborg undergraduate curriculum during five years. An analysis of 158 students' descriptive evaluations was brought together with an analysis of key features of course development; learning objectives, course records, protocols from
7E/SC5 What do I need to know as a doctor? Alumni students’ views on the medical programme and its ability to prepare them for the medical profession
Ola Lindberg* (Department of Education, Umeå University, 901 87 Umeå, Sweden)

Background: Although medical programmes are often thoroughly evaluated, such evaluations more seldom include workplace points of view. This study focuses on how well a Swedish medical programme prepared the students for work as a doctor.

Work done: Thirty two key competencies in doctors’ work were identified through interviews. A follow-up questionnaire was given to 169 programme alumni who had worked for 1-2 years in different parts of the country. The alumni were asked about the importance of the competencies as well as how these key competencies were dealt with during the medical programme.

Results: The analysis identified areas where the programme, according to the alumni, failed to prepare them satisfactorily. The main problem areas included competencies in clinical and practical skills, handling stressful situations, and generic rather than specialised knowledge about common symptoms and diseases. The evaluation also indicated where the programme had succeeded in preparing the alumni for work as a doctor.

Conclusion: This evaluation raised new questions concerning the relation between education and work in the medical programme and, as a result, revision of the medical curriculum.

Conclusions: Students’ descriptive evaluations and course records can be seen as important instruments in developing both courses and students’ learning.

7E/SC6 Ranking medical schools
Joost Dijkstra* (Maastricht University - Faculty of Health, Medicine and Life Sciences, Department of Educational Development and Research, PO box 616, Maastricht, 6200MD, Netherlands)

Background: University league tables are used to rank comparable courses based on their quality (of education). The mere mention of university league tables has been known to spark heated debates between supporters and opponents of ranking. The question that is raised is why the same university programmes end up in different positions in different rankings.

Work done: Two rankings of Dutch medical schools are compared in order to scrutinize differences in rank positions. We will zoom in from macro-level (purpose, perspective, collection of data) to meso-level (factors used to determine rank positions, data processing and calculation into rank positions) to micro-level (definitions and relevance of indicators for educational quality) and finally to the individual user level.

Conclusions: To explain differences in rank positions, comparing similar rankings on a macro-level is insufficient. Information at the meso-level is necessary to understand how rankings are established and how rank positions are to be interpreted. When comparing systems over-scrutinizing at the individual level becomes irrelevant. However, for the individual user this can be valuable.

Take-home messages: Ranking is not the same as quality assessment. Ranking should be an individual activity, taking into account personal circumstances and needs.

7F e-Learning: blended learning

7F/SC1 Blended learning for educational training: an exploration among clinical staff
W M Molenaar*, F M Bos, T A van Batenburg (Inst. Medical Education, University Medical Center Groningen, Ant. Deusinglaan 1, Groningen, Inst. Education Research, 9713AV, Netherlands)

Background: Increasing awareness of the need for educational training of clinical staff is counteracted by time restraints of physicians. This may be improved by blending face-to-face and e-training.

Work done: To explore the feasibility of blended training the existing training observation, assessment and feedback of clinical skills was transformed to a blended prototype. To give potential participants an example and to test their readiness for blended training an e-mail questionnaire including short videoclips was sent to physicians assessing medical students’ clinical skills. Respondents were asked to assess student’s and teacher’s performance in the clips and to give their view on blended training on a five-point scale. They were also allowed free comments. Finally, age, sex and teaching experience were asked.

Results: Some physicians in non-university hospitals were blocked from entrance to internet and could not participate. 284 questionnaires were returned (response rate >60%). Most respondents appreciated the blended variant (mean score 3.7). They expressed no clear preference to use the time gained by e-training to reduce face-to-face training time or to increase practicing during the training. No relation was found with age, sex or teaching experience.

Conclusions: Communication facilities should be adjusted. Clinical staff is prepared to replace face-to-face by blended training.

Conclusions: Communication facilities should be adjusted. Clinical staff is prepared to replace face-to-face by blended training.
7F/SC2 Peer to peer learning of ophthalmoscopy using an internet-based feedback tool
Peter Åsman* (Lund University, Dept of Clinical Sciences, Malmö, Ophthalmology, Malmö University Hospital, Malmö, S-205 02, Sweden)

Background: Learning ophthalmoscopy is time consuming. Teacher time also needs to be efficiently directed among teaching areas. An internet-based software was developed at the Department of Ophthalmology in Malmö in 2002 for assessment of ophthalmoscopic skill and was used as such until 2003. The student performs ophthalmoscopy on a fellow student through a non-dilated pupil. The software displays 15 optic disc photographs including that of the examined student. The task of the examining student is to identify the optic disc viewed with the ophthalmoscope among the 15. The software is also used for formative assessments among the 15. The software was then used for 60 days during the 6 week ophthalmology/ent rotation without further guidance. The students had access to 4 ophthalmoscope/computer units. Student evaluations included questions on learning and motivation effects.

Work done: An optic disc photograph was obtained from each of 128 students. At that session ophthalmoscopy was briefly trained. Subsequently students were asked to identify the optic disc of 5 fellow students using the software. The students had access to 4 ophthalmoscope/computer units. Student evaluations included questions on learning and motivation effects.

Conclusions: The method is well perceived by students, actively enrolls students in practical skills training, facilitates learning, and releases teacher time for other needs such as clinical management teaching.

Take-home messages: Computer-software can facilitate practical skills training and reduce teacher time.

7F/SC3 The electronic stethoscope - an innovation in medical education?
N Shastry, E M Williams, BV Prathibha* (William Harvey Hospital, Kennington Road, Willesborough, Ashford, Kent, TN26 1HX, United Kingdom)

Background: Medical education and training in the UK is currently undergoing the greatest change in recent years. These changes come at a time when the NHS has to embrace the European Working Time Directive for junior doctors, limiting the working week to 48 hours. The challenge is to organise good training in limited time. This not only poses a major threat but also provides an opportunity to try newer and novel methods. We have piloted setting up a library of respiratory, cardiac and bowel sounds recorded by the electronic stethoscope.

Work done: The electronic stethoscope (The Littmann electronic stethoscope, model 4100) has the ability to record any sound, damp interference and increase the intensity of the recorded sound. Sounds are recorded on six different channels and downloaded on to the computer. These can then be stored on CDs and used for teaching.

Conclusion: The electronic stethoscope provides us with the ability to record a variety of sounds. These can then be used to teach both students and doctors. As the time spent on the wards reduces, the breadth of experience gained will also decrease, necessitating the use of other training methods.

Take-home message: An electronic library of sounds will be a readily available resource for teaching.

7F/SC4 Web-based scenario training for better decision making in cardiopulmonary resuscitation (CPR)
Mikael Nilsson*, Carin Enander, Gunilla Bolinder (Dept of Medicine, R & E dept T4:01, Karolinska University Hospital, S - 171 76 Stockholm, Sweden)

Background: CPR training is a suitable application area for computing technologies including scenario based training. Decision procedures in CPR are as important as the technical skills. This learning method includes the hypothesis that repetitive, interactive scenario based training increases retention of the acquired skills.

Work done: A web-based programme with interactive scenario based training was developed and compared to the learning outcomes with a standard CPR training course. Students with no experience in CPR were randomly assigned to attend either of the programmes. Skills were assessed according to a Modified Cardiff Test of basic life support 30 days after training. A formative evaluation was performed to examine the attitude to, and preparedness for an emergency situation.

Results: In the first intervention and control group both groups were equal in skills using the total score (88% versus 77% p=0.14). In the ranking of preparedness to diagnose a cardiac arrest, the intervention group scored significantly higher (4.8 vs 4.0 p<0.05).

Conclusions: The programme is developed according to the assessment of the formative process. The web-based programme seems to be equally effective as the standard CPR training course, and is easily adaptable to a learning management system (LMS) to increase the accessibility to CPR training.

7F/SC5 A multiplanar learning management system to support competency-based education
Marilyn A Roubidoux, Larry Gruppen*, Rajesh S Mangrulkar, Ted Hanss (University of Michigan Medical School, M4101 MSI Box 0624,1301 Catherine Road, Ann Arbor, MI, 48109, United States)

Background: We are developing a pilot program using an Outcomes approach with self directed learning. Three inter-related components of this program are: (1) Nine Competency Domains (Clinical Skills, Communication Skills, Diagnosis/Risk Assessment, Education/Self Assessment, Professionalism, Scientific Reasoning, Social Context of Health/Disease, Systems of Care Delivery, Therapeutics/Management); (2) 124 Patient Symptoms; (3) Specific Outcomes, with Learning Objectives, Learning Experiences, Assessments and Performance Standards. An effective learning management system (LMS) is necessary for these 3 components. <http://www.med.umich.edu/medschool/curriculum/LMS_Short_07.htm>.

Work done: We have developed the Outcomes among the 9 Competency Domains as applied to 16 of the 124 Patient Symptoms, using accomplished physician teachers in a multidisciplinary collaborative effort. Outcomes, Learning Objectives, Learning Experiences, Assessments, and Performance Standards for all 124 Patient Symptoms are under development. Nformationdesign.com is designing a 3-dimensional graphical user interface for conceptual and technical representation of the LMS, to simplify navigation and understanding.

Conclusions: We are developing a novel, interactive, 3-dimensional graphical user interface to organize and map the LMS to facilitate a competency-based program.

Take-home messages: There are no existing models for a 3D graphical user interface for an LMS. This concept is innovative and may be applicable to other complex, interrelated LMS databases.
7F/SC6  “doc.com”, a set of 40 on-line modules to improve the teaching and learning of medical communication skills

Christof Daetwyler*, Dennis Novack, William Clark, Ronald Saizow (Drexel University College in Medicine, 2900 Queen Lane, Room 221B, Philadelphia, PA 19129, United States)

Background: Studies confirm that many physicians lack communication competence. Communication skills are teachable: since 1979 the American Academy on Communication in Healthcare (AACH) has advanced the teaching of physician-patient communication through courses, research, and publication. AACH courses trained thousands of faculty leaders in medical schools and residencies.

Work done: With Arthur Vining Davis Foundations funding, AACH and Drexel University College of Medicine jointly posted to the web 40 media-rich modules whose scope and contents derive from international publications of best practices. Modules equip educators with on-line interactive texts, movies, assessments and faculty resources to help learners achieve interpersonal and communication competence. Since release in 2006, more than 30 Universities (including Brown, Drexel, Einstein, Hopkins, Stanford, UCLA, Yale) evaluated and subscribed to “doc.com”. “doc.com” embraces tenets of life-long learning through use of interactive videos with author commentary and stimulating questions for reflection and discussion.

Conclusions: “doc.com” augments communication and relationship competence for both ordinary and more complex clinical situations, and benefits healthcare providers from medical student to seasoned clinician.

Take-home messages: “doc.com”’s comprehensiveness and interactive functions enhance both the teaching and the learning of communication competence. See for yourself; subscribe to a free trial at: http://www.AACHonline.org or http://www.webcampus.drexelmed.edu

7G/SC1  What are the perceived consequences for clinical staff in the conversion of a District General into a University Teaching Hospital?

Simon Edgar (Edinburgh University, College Office, College of Medicine & Vet Medicine, Little France Cres, Edinburgh, EH16 4SB, United Kingdom)

Background: It is long established that University teaching hospitals are not the only and certainly not the best place to facilitate students’ engagement with an Undergraduate medical curriculum in its entirety. The proponents of community based resource, namely District Hospitals (DGH) and General Practice facilities, in the UK would assert that the shift toward community-based care should be matched by a similar weighting toward community-based teaching. In parallel with these assumptions, drivers for expansion of medical student places in higher educational establishments are legion. To cope with this need for increased undergraduate training capacity, a Scottish DGH is to forge stronger links with its neighbouring University and become a University Teaching Hospital (UTH). The real difference between these two states i.e. UTH and DGH is inadequately defined and therefore the implications for clinicians, staff and students are poorly understood.

Work done: Through surveys of opinions and attitudes and comparison with the literature on this subject, I hope to gain some understanding of the perceived consequences associated with the change.

Conclusion: It is my assertion that the results of this work will help to fully engage the current body of educators and assist in the provision of a quality educational experience for all students.

7G/SC2  Defining staff perceptions of the Clinical Director role and the implications for organisational development

Nicola Marsden*, Robert Cragg, Robert Palmer, David Wall (Institute of Clinical Leadership, 19 Home Farm Avenue, Macclesfield, Cheshire, SK10 3QW, United Kingdom)

Background: Two decades have elapsed since Clinical Directorates were introduced across Europe, yet evaluations of Clinical Director (CD) roles remain scarce.

Work done: Our study adapted Q-Methodology to identify the perceptions of 30 staff towards the CD role in response to 80 predefined constructs. Exploratory cluster and factor analysis of Q-sort responses respectively revealed the consensus and contentious perceptions staff hold of the CD role.

Results: Contentious analysis identified 3 distinct sub-populations: (1) ‘Senior medics’ conveyed inadequacy in organisational support, citing; insufficient time, inadequate administrative support and poorly defined roles; (2) ‘Frontline staff’ were scathing of the role and remit of CDs, believing postholders remain immune from accountability for poor performance; (3) Contrastingly ‘Corporate managers’ appeared markedly detached from directorate staff opinion, indicating their satisfaction with CD performance in strategically shaping services and advancing clinical governance.

Conclusions: Encouragingly consensus responses endorsed the clinical directorate model, with all participants sharing the believe that CDs need to share their managerial role with peers, as well as undergo formal appraisal and training.

Take-home messages: Our study findings will be discussed highlighting practical organisational development strategies to improve CD role enactment. This study can be replicated by other hospital sites, devising their own Q-Sort statements pertinent to each locality.

7G/SC3  Imparting corporate skills to clinicians - a service-learning model

Jeremy Lim*, Darren Tan (Singapore Health Services, 11 Third Hospital Avenue, #07-00 SNEC Building, 168751, Singapore)

Background: Clinicians are increasingly taking on managerial roles despite the lack of formal training in management. Clinical heads of departments now have wide-ranging duties including budgeting and strategic planning. We describe a model of service-learning where clinicians are supported by corporate managers, health services researchers and
policy analysts in analyzing challenges faced, proposing specific interventions and operationalizing the approved interventions.

Work done: In our programme, clinicians are tasked with analyzing managerial issues related to their departments such as overcoming budget deficits, streamlining clinic workflows and service line prioritization. They are then provided technical and manpower support from the SingHealth Centre for Health Services Research and the Corporate Office. Specific management instruments such as surveys/censuses, scenario planning, modelling etc are triangulated and used in understanding the issues, their root causes and hence potential solutions. The ownership of the challenge forces active participation, engenders buy-in and hands-on problem solving and in the process, corporate skills are imparted in a service-learning framework to clinicians.

Conclusions: The clinico-managerial combination has proven highly effective, imparting valuable corporate skills to clinicians and promoting mutual respect and cross-pollination of ideas. Examples from service line development, allocation of subsidies and shared care programmes will be discussed.

7G/SC4 Leadership education for all doctors: no longer an optional extra

Peter Spurgeon (International Institute of Clinical Leadership, University of Warwick, The Medical School, Gibbet Hill Road, CV4 7AL, United Kingdom)

Background: The authors are currently undertaking a major national project – Enhancing Engagement in Medical Leadership - that includes the development of an integrated leadership competency framework. This will apply to all doctors in undergraduate and postgraduate education as well as post-CCT. Whilst not always recognized, ALL doctors are required to fulfill some leadership functions from an early stage. The Royal College of Physicians (London) report Doctors in Society: Medical professionalism in a changing world (2005) recommends that “the complementary skills of leadership and “followership” need to be incorporated into a doctor’s training to support professionalism….” (para 3.6)

The project is led by the Academy of Medical Royal Colleges and the NHS Institute and has the support of all medical professional, educational and regulatory bodies as well as the Department of Health and the NHS Confederation.

Work done: The presentation will outline how the leadership competency framework has been developed. This has included a national and international review of medical and non-medical leadership competency frameworks, interviews with Deans and Postgraduate Deans and focus groups involving a wide range of stakeholders. Finally, the presentation will provide an overview of the framework, the process of implementation and assessment and potential application to other health systems.

7G/SC5 360 degree appraisal of local leaders of clinical education: Bristol’s academy medical deans

David Mumford, Julie Mansfield, Peter Cavanagh, Jo Kyte (University of Bristol, Centre for Medical Education, 41 St Michael’s Hill, Bristol, BS2 8DZ, United Kingdom)

Background: 360 degree appraisal is a formal process that enables individuals to receive feedback on their performance in a safe, structured and supportive manner. Bristol Medical School’s academy medical deans (AMDs) have played a key role in the successful creation of Bristol’s seven new clinical academies: a distributed campus model that fosters local leadership and delivery of clinical education.

Work done: 360 degree appraisal was used (1) to evaluate the generic role of AMD two years after the inauguration of the clinical academies and (2) to offer individual AMDs confidential feedback on their performance in the role and the opportunity to identify further training needs. The 63-item questionnaire was adapted from previous appraisals within the university. Feedback was sought from local NHS trust managers, deputy AMDs and non-medical academy deans, academy administrators, local curriculum unit leaders, university staff in Bristol, and current medical students.

Conclusions: Responses from all six groups generally showed a very positive appraisal of the way AMDs were fulfilling their role; NHS trust managers gave relatively the most critical feedback. AMDs welcomed their individual feedback sessions and responded constructively to identified areas for personal development.

Take-home message: 360 degree feedback can be a useful tool for the professional development of educational leaders.
7H/SC2 Influence of attitudes and beliefs on prediction of medical students’ intentions to behave professionally
V Jha*, H L Bekker, G Pell, M Conner, T E Roberts (Medical Education Unit, School of Medicine, Level 7 Worsley Building, University of Leeds, LS29JT, United Kingdom)
Background: There is little evidence of interventions in medical education that have an impact on development of professionalism. This may be related to the lack of understanding of what influences intentions to behave professionally or unprofessionally. The theory of planned behaviour (TPB) is an established framework for measuring attitudes and behavioural intentions with regard to health behaviours.
Work done: A questionnaire using the TPB framework was developed to measure prediction of behavioural intentions for 27 examples of professional behaviours by attitudes, beliefs related to social norms and perceived behavioural control and experience of past behaviour.
Results: Multiple regression analysis showed attitudes, normative beliefs and past behaviours to be the most consistently significant predictors of behavioural intentions.
Conclusions: The questionnaire represents a valid tool that may be used to teach about professionalism. It identifies some of the salient beliefs and attitudinal underpinnings that influence professional behaviour.
Take-home message: Interventions to promote professionalism should target attitudes and underlying beliefs in order to be effective. Future research needs to explore these beliefs in greater depth to help create reliable and valid tools for teaching and assessment around professionalism.

7H/SC3 The ‘informed patient’-implications of patient empowerment on teaching about professionalism in medical education
Z Setna*, V Jha, N Quinton, F O’Neill, P Morris (Medical Education Unit, School of Medicine, Level 7 Worsley Building, University of Leeds, LS29JT, United Kingdom)
Background: Current health policies emphasise the importance of informed patient choice to treatments and empowerment of patients to enable them to take more control of their health.
Work done: This paper discusses results of a literature review on the emergence of the informed/empowered patients and its implications for teaching about professionalism in medical education. The review provides evidence for factors influencing patients seeking health information (chronic disease, personal health concerns), resources and policy structures facilitating the empowerment of patients (increased use of information technology, practice of shared decision making) and potential patient and service outcomes of empowered/informed patients (improved disease outcome, changes in doctor-patient relationship in terms of changes in traditional power balance).
Conclusions: This review highlights aspects of professionalism that need to be targeted for training in medical education. Formalised training about the importance of trust, shared decision-making and adequate communication is essential to maintain and improve the doctor-patient relationship.
Take-home message: Models of training about facilitation, measurement of patient information/empowerment and its outcomes need to be developed to train students and doctors to be more patient centred.

7H/SC4 CINEMEDUCATION: Learning professionalism through films at Chulalongkorn Medical School
N Lumlertgul*, N Kijpaisalratana*, A Cheaujak, P Chetchotisak, S Mektaveegul, V Phophiboon, B Saksitthichok, J Sitapong, W Siripawadkul, S Uttamapiyan, D Wangsaturaka, N Pitayarasttian (The Faculty of Medicine, Chulalongkorn University, Rama IV Road, Pathumwan, Bangkok, 10330, Thailand)
Background: Chulalongkorn Medical School has implemented the outcome-based curriculum since 2002. Professionalism is considered as a set of the outcomes accentuated throughout the six-year curriculum. In the second year, a group of medical students conducted the ‘Cinemducation’ project to promote professionalism in the ‘Medical Ethics and Critical Thinking’ course.
Work done: Five movies with professionalism issues were screened with 20-30 students attending each film. After the show, participants then reflected on what they had learned in terms of professionalism. Two students led group discussion emphasizing questioning and argumentation for 60 minutes. A 10-item questionnaire using 6-point rating scale (0-5) was distributed to all participants at the end of the session. Additional learning issues emerging from each session were also explored in more depth and arranged into a report.
Results: The participants considered these activities useful (mean = 4.6); entertaining (mean = 4.3); and applicable to their future roles as doctors (mean = 4.6). They also learned about professionalism (mean = 4.6) and medical knowledge (mean = 3.9). Professionalism issues arising from the films were: informed consent, doctor-patient relationship, brain death and organ transplantation, and management of genetic disorders, for example.
Conclusion: ‘Cinemducation’ is a promising method to facilitate students’ learning on professionalism.

7H/SC5 Truth-telling: observations by medical students at the bedside
Alan Rubinow* (Hadassah-Hebrew University Medical School, Ein Kerem, Jerusalem, Israel, 91120, Israel)
Background: The ethical principle of autonomy and the doctrine of informed consent are grounded on a patient's right to full disclosure of pertinent medical information in order to weigh options and choose among possible courses of action. While truth-telling is emphasized in most courses in medical ethics, students’ observations on its application at the bedside may have a major impact on their individual professional development.
Work done: Following a 30-hour lecture course in medical ethics and professionalism, fourth year medical students began their first 12-week clinical clerkship on a general medical ward. Each student was required to submit a written report describing a patient he/she had encountered where an ethical/professional problem was identified, discuss conflicting principles and suggest possible ways to resolve the dilemma. From 2001-2006, 204 students submitted cases.
Results: Thirty-eight students (19%) focused on a case where the divulging of information was not professional. “Truth dumping”, paternalism, poor communication skills, cultural insensitivity, immaturity, family member overprotection, concealment, deception and basic disrespect for persons were observed.

Conclusions: Case-finding promotes moral reasoning and maturity and there was general agreement among the students that the experience would impact on their future professional careers.

Workshop 7I  Is medical education a medical speciality?

David Blaney, Graham Buckley, Lesley Southgate (ASME, 12 Queen Street, Edinburgh, EH2 1JE, United Kingdom)

Background: Postgraduate medical training in the UK has undergone a significant change with the introduction of competency based specialist training programmes from August 2007. In the UK many involved in medical education have no formal training or qualification in medical education. How can we begin to professionalise the discipline of medical education? The development of a potential Academy of Medical Educators raises the question as to whether medical education is or should be considered a specialty in its own right. If it should, then what is the curricula and what competencies are required of medical educators and how should they be trained and assessed? This workshop will explore these and related issues and seek to develop a consensus view on the way forward.

Intended Outcomes: (1) Discussion of the concept of a specialty of Medical Education; (2) Definition of a medical educator; (3) What would be the career path for future medical educators and how would this be managed and quality assured? (4) Agreement as to whether there needs to be a system of regulation/accreditation for medical educators; (5) What standards should be set and by whom?

Structure: The workshop will involve two short scene setting talks followed by open discussion on the issues outlined above.

Intended audience: Anyone who is involved in medical education or who is committed to a career in medical education.

Level: Advanced.

Workshop 7J  Using learning-outcome frameworks in practice; experience from the "Scottish Doctor Project"

Gary Mires1, Hamish McKenzie2, Phillip Evans3 (1University of Dundee; 2University of Aberdeen; 3University of Edinburgh; representing the Scottish Deans Medical Curriculum Group, Scotland, United Kingdom)

Background: The Scottish Doctor project pioneered the application of an “outcomes framework” at a national level. Since then, other groups have described similar frameworks and there is now sufficient interest to review the experience and to assess their potential for wider use.

Intended outcomes: To assess the potential for applying learning-outcomes frameworks in local, national or international contexts.

Structure: Introduction, task-based break out groups, plenary session.

Intended audience: Practising teachers who are familiar with the Scottish Doctor document, and have experience of applying outcome frameworks (or wish to do so) and wish to assess the potential applications in their own situation.

Level of workshop: Intermediate and advanced.

Workshop 7K  Young medical educators’ workshop: Fostering your career in medical education

Stewart Mennin1, Regina Petroni Mennin2, Monica van de Ridder3, Soren Huwendiek4 (1University of New Mexico School of Medicine, United States; 2Universidade Federal do Sao Paulo, Brazil; 3University Medical Center Utrecht, The Netherlands; 4University Children’s Hospital Heidelberg, Germany)

Background: The number of young medical educators is increasing. In comparison to careers in other areas like biomedical research, strategies in the advancement of careers in medical education are less obvious. The workshop will explore successful strategies for career advancement especially for young educators.

Objectives/intended outcomes: At the end of the workshop participants will (1) become acquainted with principles of career advancement in medical education and (2) will be able to apply these principles to their own needs.

Format and content: After an introduction to general career advancement principles in medical education, participants will have the opportunity to develop their own concepts and discuss them with other participants and the facilitators.

Intended audience: Young medical educators with interest in a career in medical education.
**Workshop**

**7L Using the OSCE to Assess CanMEDS Competencies**

A. Jeffries, E. Simmons, D. Tabak (Dept. of Paediatrics, University of Toronto; Department of Family and Community Medicine/Standardized Patient Program, University of Toronto, Canada)

This workshop addresses the need to assess CanMEDS competencies in a reliable and valid manner.

Learning objectives: Upon completion of this session, participants should be able to:

- Describe how the CanMEDS competencies can be incorporated into OSCE stations
- Understand one assessment tool that may be used to evaluate the CanMEDS competencies in an OSCE
- Provide OSCE candidates with feedback describing their performance related to the CanMEDS competencies
- Conceptualize an OSCE design which incorporates all CanMEDS competencies

Structure/content: The workshop begins with a Think/Pair/Share exercise that will serve as an ‘ice breaker’ and also aid presenters in tailoring the introductory PowerPoint didactic component to the needs and language of the participants. Simulated pre-recorded OSCE scenarios will be presented and workshop participants will be asked to score the ‘candidates’ using checklists and global ratings. Participants will work in guided breakout groups to develop their own OSCE scenarios. Handouts outlining evaluation tools will be provided. Participants will be provided with an introductory framework that includes a brief overview of the CanMEDS competencies and of the OSCE. The framework highlights the value of the OSCE in assessing performance (the “shows how” of Miller’s pyramid). Using pre-recorded simulated OSCE scenarios, we will demonstrate how different CanMEDS competencies are incorporated. We will lead a discussion about tools that can be used to evaluate candidate performance of each of the CanMEDS competencies. Key to the discussion will be the global ratings that we have developed to assess CanMEDS roles. Each small group will present the scenario they developed to the larger group for discussion and comment. During the workshop, we will describe the design of an OSCE that incorporates all 7 CanMEDS competencies and present methods that may be used to provide specific feedback to the candidates on their performance related to each of the competencies.

Intended audience: This session is designed for all health professional teachers and educators with an interest or involvement in evaluation and assessment.

**Posters**

**7M Assessment: Feedback and Self-assessment**

**7M/P1 An evaluation of feedback using formative assessment forms to 3rd and 5th year child health medical students**

E. Chiang*, E. Bradshaw*, A. Hermuzi, B. Bateman (North Tyneside General Hospital, Rake Lane, North Shields, Tyne and Wear, NE29 8NH, United Kingdom)

Background: Formative assessment forms (FAF) are used to structure feedback on clinical encounters for medical students in the Northern Deanery. Evidence suggests that feedback is valued and changes behaviour.

Work done: A questionnaire was sent to medical students (n=38), completing a child health attachment, and to their assessors (n=8). Students’ FAFs were evaluated.

Results: Assessors (8/8) felt FAF highlighted students’ strengths. Only 1/8 felt it truly represented abilities. 7/8 felt the freetext box was the most useful component. 23/37 (62%) students felt the FAF identified deficiencies. 20/36 (56%) felt it highlighted strengths. 16/37 (43%) felt it motivated learning. 7/36 (19%) felt it truly represented abilities. 154 FAFs were collected from 35 students. There was a median of 4 FAFs (range 2-9) per student. 75% had freetext of which the median length was 11 words (range 1-56).

Conclusion: Assessors were more positive than students. Neither group felt that FAF truly represented abilities. The general opinion was that qualitative comments were the most useful part of the form, despite 25% of FAFs having no freetext.

Take-home messages: FAFs were not well used or understood and did not support the feedback process. More understanding is needed of how written records of formative feedback help students and assessors.

**7M/P2 Improving teacher’s feedback to medical students on their work and performance**

Helen J Graham (King’s College London School of Medicine, Sherman Education Centre, 4th Floor Thomas Guy House, Guy’s Hospital, London SE1 9RT, United Kingdom)

Background: Opportunities for students to receive feedback on their work and performance by teachers is essential for progression. Yet the last UK National Student Survey found that final year medical students were less satisfied than other faculty students on receiving assessment and feedback during the whole course. This surprising finding prompted a review of educational feedback to King’s medical students with the aim of recommending improvements.

Work done: Feedback opportunities for students throughout the King’s medical course were mapped and potential improvements discussed with teachers, students, course-organisers and examiners. Feedback to students was considered under two categories: formative and summative assessments and examinations; and skills competencies, personal progress and development in clinical settings. In the early years, individual electronic feedback to students worked well. In the later clinical years, electronic feedback on examinations was limited to failed students yet students reported the need to extend this to all. There were plentiful opportunities for verbal feedback in clinical settings but sometimes feedback was insufficiently detailed to be constructive.

Conclusions/Take-home message: Recommendations included the provision of electronic feedback on examinations for all students; improving assessment criteria on student performance in clinical settings, and improving staff awareness across multiple teaching sites on how to give effective student feedback.
7M/P3  **Putting the student in ‘student feedback’: Self-Assessment Mid-Rotation Evaluation (SAM_E) tool**

Kelli Harding* (Columbia University Medical Center, College of Physicians and Surgeons, 1051 Riverside Dr., Unit 69, New York, 10032, United States)

Background: For trainees, feedback on clinical rotations often occurs too late or is too general (i.e. “Good job!”). SAM_E is a practical educational tool developed by a resident after discussion with fellow trainees about how end-of-rotation evaluations didn’t always reflect the learners’ own experiences. This tool facilitates reflective discussion of trainee performance and planning for improvement by students and supervisors using competency-based goals at the mid-rotation point, so there is still time for improvement by the end of the rotation. It provides a benchmark to compare self-assessment to observed assessment promoting discussion of strategies for ongoing improvement and development of life-long learning skills. In practice only about 5-10 minutes is needed.

Work done: The tool has been in use for all residents in all psychiatry rotations at our institution since January 2005, with very positive feedback from both supervisors and trainees. Both groups report the tool useful. It will be piloted in medical student clinical rotations in a range of disciplines starting Fall 2007.

Conclusions: SAM_E appears a helpful tool to facilitate and improve trainee feedback.

Take-home Message: This educational tool provides a practical format for timely meaningful feedback to trainees, while encouraging directed self-assessment and mentoring.

7M/P4  **Effective simulations for formative assessments**

Iain J Robbé*, Dinusha Arulrajan, Siwan Davies, Ben Hudson (Schools of Medicine, and Postgraduate Medical Education, Cardiff University, Temple of Peace & Health, Cathays Park, Cardiff, CF10 3NN, United Kingdom)

Background: Modern medical curricula emphasise formative assessments and feedback. Clinical simulations involve imitating the real situation of patient, doctor and procedure by analogous situations using non-patients and equipment thus integrating technical, communication and professional skills.

Work done: Objectives: To examine the usefulness of a 12-scenario simulation procedure as perceived by 6 Foundation Programme doctors and 6 final year medical students from Wales. Methods: Assessment of their aggregated results compared to non-Wales participants, post-procedure interviews, structured evaluation forms, free-text comments.

Results: Doctors considered the scenarios were unrealistic particularly more technical scenarios e.g. urinary catheterisation, nebuliser use, with lower scores by assessors and participants. Students thought the simpler scenarios were moderately realistic but had similar low scores for more technical scenarios. Validity appeared low. Both groups noted wide variations in scoring by actors, assessors and participants. Reliability appeared low. Usefulness was further reduced by delays of two months in receiving individual feedback and accessing performance videos.

Conclusions: Students with less practical experiences perceived more usefulness from the simulations than doctors but doubts about validity and reliability affected both groups.

Take-home messages: Effective simulations for formative assessments must take account of participants’ levels of training and provide rapid feedback.

7M/P5  **Use of scoring rubric for formative assessment: report of a validation process in Internal Medicine Program**

Diem-Quyen Nguyen, Jean-Victor Patenaude* (Université de Montréal, CHUM- St Luc, 1058 St Denis, Montreal, H2X 3J4, Canada)

Background: Even if formative assessment of clinical competencies is recognized as an area of great importance, it is unclear what type of assessment scale could be used in such activity. We report steps leading to the creation of a scoring rubric for such use.

Work done: Streiner’s and Van der Maren’s methods in devising and validating a measurement scale have been followed. At first, after a review of the literature, a Mini-CEX-like prototype was created. A focus group of twelve clinical teachers then used this scale to set the acceptable and unacceptable levels of performance. A second prototype with three levels of performance was then devised. To test its content validity, a one-month trial with a group of five teachers and nine Internal Medicine residents took place at the Université de Montréal.

Results: A semi-structured interview was conducted with every participant. Based on their comments, the final scale has all the characteristics of a scoring rubric with nine clinical-task items and four levels of performance. The excellent level represents the proficiency level, and the acceptable level the minimal competent level for an independent practice.

Conclusion: The scoring rubric containing clinical-task items and descriptive standards seems to respect the content aspect of validity for a formative assessment scale.

7M/P6  **Correlation between students’ grades in the final MD exam and their B.Sc. (Health Sciences) GPA in the College of Medicine & Health Sciences, Sultan Qaboos University**

Nadia Al Wardy*, Syed Rizvi, Riad Bayounni (Sultan Qaboos University, College of Medicine & Health Sciences, P.O. Box 35, Al-Khod, 123, Oman)

Background: The MD programme in the College of Medicine & Health Sciences, SQU is divided into a pre-clinical programme of three years. Progression to the clinical programmes is conditional on obtaining a minimum cumulative GPA of 2.0 in the B.Sc. programme. Obtaining the MD degree is conditional on passing a final MD exam.

Work done: To look if there was any correlation between students’ grades on the final MD exam and their grades in B.Sc. (Health Sciences) programme and whether this correlation was stronger for science subjects or other subjects in the B.Sc. programme.

Results: There was a strong correlation between the final MD grades and GPA of B.Sc. (Health Sciences). The correlation was stronger for science subjects than for elective courses.

Conclusion and Implication for change: A restriction was put on the number of elective courses to be counted towards the cumulative GPA in the B.Sc. programme. Also, the minimum GPA required for progression to the clinical programme was changed to 2.3.
7M/P7  Electronic key feature examinations in a large medical faculty - implementation and first experience
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Background: The medical faculty of the Goethe-University in Frankfurt educates approximately 350 clinical students per year.

Work done: In order to facilitate key feature examinations with open questions, we have used a computer-based system with server and 150 notebooks. Student answers are exported into a database. Grading was performed by a single rater using a thesaurus supplied by the faculty. This procedure for 200 students, 90 key feature questions and 90 multiple choice questions took only 2 days. The system has been used to test 670 students (December 2006, February 2007) in all together 29 disciplines. We have adapted the examination tool of WebCT. Student identification and login had to be performed manually, other safety issues have been addressed by using a LAN system. All students had previously the opportunity to become familiar with the electronic type of examination. Student acceptance varied due to the experience with electronic examinations.

Conclusions: Electronic assessments can be implemented on a regular basis; increases in validity (open key feature questions) and objectivity (single rater) as well as major organisational advantages made computer-based examinations the method of choice for our faculty.

7M/P8  The application of Generalizability theory to reliability assessment of writing proficiency
Pairoj Boonluk sirinch* (Hatayi Medical Education Center, 182 Hatayi Hospital, Hatayi, Songkhla 90110, Thailand)
Background: Patient report writing is important for medical students. Besides teaching how to write it, reliability should be concerned because of measurement errors. Generalizability theory (GT) is a tool for estimating the magnitude of errors and reliability. The objective of this study was to examine GT for reliability of writing proficiency.

Work done: Seventy-seven reports were collected to assess interrater reliability in 7 aspects such as patient history, physical examination, data list, critical appraisal, progress note, references, and conciseness. Eighteen students with their 3 reports scored by 2 raters were analyzed by GT.

Results: Interrater reliability among 7 aspects was -0.11 to 0.65. Generalizability coefficient was very low at 0.18. The largest variance component was attributable to student-rater nested within report interaction. Decision studies showed 30 reports with 1 rater and 10 reports with 2 raters were estimated to achieve acceptable reliability.

Conclusions: This reliability of writing proficiency was low. The largest variance component was attributable to student-rater nested within report interaction.

Take-home messages: The more reports are written, the more degrees of reliability are obtained. We suggest assigning students to write at least 30 reports throughout the clinical years to achieve acceptable reliability.

7M/P9  Progress testing in postgraduate education in dermatology
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Background: In 2005, progress testing for dermatology residents was introduced in the Department of Dermatology and Allergology. The purpose is to evaluate the quality and to measure the progress of postgraduate education. The test has been designed for dermatology fellows in training.

Work done: Attendees of the department for dermatology and allergology were asked to submit at least 2 questions from their special field, e.g., allergology, inflammatory dermatoses, benign and malignant neoplasms and infectious dermatoses. All submitted questions were discussed in a review-committee and changed in accordance to mc-item-writing rules and finally approved by the author. 50 questions were chosen for the test and assigned to 14 different areas of dermatology.

Results: All trainees were asked to take the test, which means that 40 participants (1-60 month of residency training) took part in the test every year. In 2006, the achieved test score (correct – incorrect) had a wide range. There was a positive correlation between time of training and achieved test score.

Conclusions/Take-home messages: The results of 3 progress tests provide important information on the progress of knowledge of trainees. Areas which will need further improvement were identified. Critical aspects of progress testing as a means to assess the quality of postgraduate education will be discussed.

7M/P10  Lack of agreement between self and tutor assessment of first year medical students in PBL sessions
José Lúcio Martins Machado*, Waldir Gerc, Joaquim Edison Vieira, Regina Helena Petroni Menin, Valéria Menezes Peixeiro Machado (Unicid - Universidade Cidade de São Paulo, R Cesário Galeno 446/475, Tatuapé, São Paulo, 03071000, Brazil)
Background: In some instances, problem-based learning utilizes frequent self, peer and tutor assessment in the determination of final grades for learning modules. We investigated this strategy over a period of time in a medical course.

Work done: Self and tutor assessments from 58 first year students in 19 of 44 tutorial sessions from six modules were collected and analyzed. Trends in data were observed and interpreted in the context of tutorial assessment strategy.

Results: The grades assigned by tutors were consistently below those assigned by students to themselves. Over the 19 tutorials, students' self-assessment scores were elevated and remained consistently high. In contrast, scores assigned by tutors for the same students decreased over the same period of time. Calculation of overall grades was biased and inflated by student self-assessment.

Conclusions/Take-home messages: Self-assessment is an important formative and summative component of PBL. The use of numerical self assessment as part of the determination of the final grade contrasts sharply with assessments provided by tutors. This study has stimulated a reconsideration of the use of numerical scores for self assessment as part of the overall student grade. Additional attention to the value of formative self assessment is warranted.
7M/P11 Effectiveness of the surgical courses in contrast to the effect of surgical clerkship in medical students’ self-assessment of their surgical knowledge and skills
W A Flaig*, N Menzhega, R Weber, H L Lauer, I Marzi (Johann Wolfgang Goethe-University, Department of Trauma, Hand and Reconstructive Surgery, Theodor-Stern-Kai 7, Frankfurt/Main, 60590, Germany)

Background: Over the past years all medical students were educated in surgery during two obligatory surgical courses organized by the faculty. Additionally they had the opportunity to attend self organized clerkship in surgery. The aim of the study was to analyze whether the surgical courses or the surgical clerkship have more effect on students’ learning.

Work done: We developed a questionnaire with 12 items on a seven point scale for self-assessment of knowledge (item 1), skills (item 2) and self-confidence (item 3) concerning the key feature “suturing a skin lesion”. (Low values; low performance).

Results: 518 students completed the self-assessment questionnaire. 98 students completed only course 1 and 9 students course 1 and 2. There is no relevant difference in the results of these two groups. Students who only attended the clerkship (21) score higher and students who attended the clerkship and course (162) showed the highest scores of all. We found no influence of the second course for students with clerkships.

Conclusions: We created a new curriculum with standardised learning contents for the two surgical courses. We established an OSCE to assess the results of the learning processes and we will repeat our questioning to improve the quality of the surgical education in Frankfurt.

7M/P12 Effects of examination stress on surgical skills of residents
Vicki LeBlanc*, Sarah Woodrow, Ravi Sidhu, Adam Dubrowski (Wilson Centre - University of Toronto, 200 Elizabeth Street, 1ES-565, Toronto, Ontario, MSG 2C4, Canada)

Background: Little is known about the effects of acute stressors on clinical performance. This study was conducted to assess the effects of examination-induced stress on the technical performance of junior surgery residents.

Work done: Twelve 1st year surgery residents completed two surgical tasks (skin excision, tracheostomy) in a low and in a high-stress condition (a mandatory in-training examination: OSATS). The residents rated their subjective stress levels on a 10-point Likert-like scale prior to each performance. Performances were videotaped and assessed by three blinded experts using checklist and global rating scales.

Results: Residents reported moderately higher stress levels in the exam condition than in the low stress condition (3.7 vs. 2.1, p< .05). Their performance was rated higher in the exam condition on the checklist scales (p<.05), but not on the global rating scales (p=.79).

Conclusions: Residency in-training exams induce moderate stress levels in junior surgery residents. These stress levels have a motivational effect on the residents and are accompanied by improvements in technical performance as assessed by checklist–based scales. There were no differences on the global rating scales, suggesting that residents were better at following the itemized sequence of movements when stressed, but their overall global performance was not altered.

7N/P1 Foster a community-responsive attitude through community service-learning program
Kai-Kuen Leung*, Wen-Jing Liu, Wei-Dean Wang, Ching-Yu Chen, Tien-Shang Huang (National Taiwan University College of Medicine, #7, Chung-Shan South Road, Taipei, 10016, Taiwan)

Background: This study examined whether community service-learning is able to foster students’ community responsibility.

Work done: In the fifth year of a seven-year curriculum, students were required to participate in a community service-learning program in small groups. The Social Attitude Scale (SAS) (23items) is designed to evaluate the attitude in serving one’s own community covering the “citizenship”, “locus of community problems”, “social justice”, “personal value” and “ability to work with others” dimensions. The Program Characteristics Scale (PCS) measures the quality of community learning program in small groups. The Ability Scale (AS) measures the learner’s evaluation of skills acquired from the program.

Results: A total of 141 students completed the evaluations. SAS scores were significantly increased in post-course (81.10±6.67 vs. 78.35±7.07; Δ=2.74±5.88, 95% CI=1.77~3.72). The pre- and post-course differences of the SAS came from the “citizenship”, and the “personal value” dimensions (Δ=1.62±3.62, 95%CI=1.01~2.22; Δ=0.81±1.75, 95%CI=0.52~1.10). Post-course SAS was highly correlated to PCS (r=0.49, P< 0.001) and AS (r=0.56, P<0.001).

Conclusions: Community service-learning program is capable of changing students’ attitude in community service. This attitude change was enhanced by the program quality and subjective evaluation of what had been learnt from the program.

Take-home message: A well-designed high quality community service-learning program is effective in changing students’ attitude in community service.

7N/P2 A focus group study exploring early clinical attachments in primary care for graduate entry medical students
Diane Owen*, Sharon Hartwell, David J Lewis, Frances Rapport (School of Medicine University of Wales Swansea, Grove Building, Singleton Park, Swansea, SA2 8PP; United Kingdom)

Background: Literature suggests that early clinical experience helps provide a clinical background to the theoretical course of a medical curriculum and a better understanding of the human condition and clinical reasoning. Swansea graduate entry medical students receive early clinical teaching in the community by attending a general practice monthly for the first two years of their course. We investigated students’ opinions whether this experience contributed to their learning.
Cultural competence: The introduction of indigenous languages into the MBChB Primary Health Care lead Curriculum (PHCLC) at the University of Cape Town (UCT)

Rae Nash (University of Cape Town, Anzio Road, Observatory, Cape Town, 7925, South Africa)

Background: The introduction of the PHCLC MB, ChB programme at UCT has broadened to address the issue of improved patient care. This includes the right of patients to be interviewed in their own language. Historically there have been very few indigenous language speakers trained in the MB, ChB programme at UCT due to the apartheid exclusion of black South Africans. Despite a more diverse student body this has still not ensured that the majority of patients are interviewed by either students or Medical Officers who are able to speak their language. English is the language of instruction at UCT; the other two principal languages spoken in the Western Cape are Xhosa and Afrikaans.

Work done: The Faculty of Humanities was tasked with introducing these languages into the MB, ChB programme; the aim being to achieve conversational competence, with particular reference to history taking and imparting basic health information to the patient. The Clinical Skills strand has contributed greatly to the successful implementation of the Language component into the MBChB curriculum at UCT. In this presentation the difficulties and ultimate success of the process is discussed as well as our plans for developing the programme further with extended integration into the Family Medicine teaching strand.

Conclusions: Students' learning experiences benefited enough to justify extending the change to other modules. Practitioners' reactions were more varied, including antagonism towards change of the status quo and discontinuity of mentorship.

Take-home message: Integration is hard to achieve and any trade-off involves compromise. Students' overall learning experience is an important benchmark against which to evaluate change.

Towards integration of undergraduate medical learning in hospital and community

C Hyde*, P Burns, T Redmond, T Dornan (Salford Royal Foundation & University of Manchester, Hope Hospital, Salford, M6 8HD, United Kingdom)

Aim: Evaluate an alternative curriculum design.

Background: UK curricula are required to be community oriented and integrated. Manchester's 5-year problem-based curriculum provides community experience for one day in five during 12-week hospital clerkships. This provides some continuity of mentorship, but releases hospital placements for insufficient time to solve capacity problems and inhibits immersion in either community or hospital context.

Work done: Increasing student numbers led us to evaluate a new trade-off between integration, continuity, immersion, and firm size within an action research framework. A 4-week block with 2.5 days in community and 2 in hospital alternated with 4-week hospital blocks lacking community exposure. Evaluation was by semi-structured interviews during each of 12 weeks with 3 groups of 6-7 students, in-depth exploratory interviews with 8 of 9 consultants and 9 of 12 general practitioners, and a follow-up survey.

Conclusions: Students' learning experiences benefited enough to justify extending the change to other modules. Practitioners' reactions were more varied, including antagonism towards change of the status quo and discontinuity of mentorship.

Take-home message: Integration is hard to achieve and any trade-off involves compromise. Students' overall learning experience is an important benchmark against which to evaluate change.

Integrating anthropological concepts into family & community medicine curriculum for third year medical students at Department of Social Medicine, Maharat Nakhon Ratchasima Hospital, Thailand

Patcharaporn Suwichacherdchu*, Nuanla-or Wiwatworaphan, Surasit Chitpitaklert (Social Medicine Department, Maharat Nakhon Ratchasima Hospital, Merng, Nakhon NakhonRatchasima, 30000, Thailand)

Background: The objectives of the curriculum are to make the students aware of people's way of life and their contexts regarding health, to realize physicians' roles in facilitating individual and family participation in self-health care as well as appreciating community potential in solving their own problems. Each year since 1999, 33 medical students enter this curriculum.

Work done: Villages in rural areas are selected for 1-week field study. The students will stay together with villagers in their houses. Seven Anthropological tools, community map, genogram, community organization structure, health care resources, community history, community calendar, and demographic history, are used to explore the community through community leaders, health volunteers, seniors, chronic disease patients, and the disabled. Collected data will be analyzed and synthesized to construct new knowledge of community health care.

Results: The students' average score of objective achievement after finishing the rotation are significantly higher (P<0.01) than their pre-rotation score. The score of happiness and satisfaction is as high as 85%.

Conclusion: During the rotation, Anthropological tools can be used by medical students to help them understand their patients, family, as well as community. As a result, medical students are expected to be ideal physicians after graduation since they could apply holistic care in their taking care of patients effectively.

From ward to community – taking the teaching to where older people live

Richard Fuller*, Dawn Stephenson, Nicola Turner (University of Leeds School of Medicine, Worsley Building, LS2 9JT, United Kingdom)

Background: A core skill for all graduates is the ability to undertake holistic assessment of older people within a team that spans both primary and secondary care. Rapid changes in UK geriatric medicine highlight the need to be able to practice these skills in an evolving model of community based care. This work focused on the development and evaluation of a purpose designed community geriatrics teaching programme.
Teaching holistic care in Primary Care Units

D Wanaporn (Medical Education Centre, Khon Kaen Hospital Road, Amphur Muang Khon Kaen, 40000, Thailand)

Background: Holistic care is increasingly recognized as an integral component of medical education. This article aims to identify effects of using case study at the Primary Care Units (PCUs) for teaching holistic approach to improve their understanding of the concept of holistic care.

Work done: Sixty-one 6th year medical students were recruited. They were assigned to interview and take physical examination of 3 patients at different occasions at the PCUs which took approximately 3 hours per case. Immediate feedback and discussion were given by family physician staff regarding five domains including holistic care, primary care unit, family genogram, universal coverage health scheme and biomedical knowledge. Their performance and understanding were assessed by the staff using a 5-level rubric score. The initial and final score of each student were compared to monitor their learning progression. Attitude towards this type of teaching were also examined.

Results: Their performance was significantly improved in all domains (P<0.01) as time elapsed. Teachers and students also expressed their needs to extend their times and frequency at the PCUs as well as doing home visits.

Conclusion: Teaching holistic care using case study at the PCUs provided a broad learning environment that allowed students to practice a holistic approach in a community setting.

Peer visits to undergraduate teaching practices

Cathy Jackson*, Jon Dowell, Neil Merrytes (Tayside Centre for General Practice, Division of Community Health Sciences (CHS), University of Dundee, Mackenzie Building, Kirsty Simple Way, Dundee, DD2 4BF, United Kingdom)

Background: Dundee Medical Students spend one month during fourth year in an urban general practice. They then spend one, two, or three months in fifth year in a rural practice. These attachments receive overwhelmingly positive student feedback. Until now this has been the only method of quality control. There is now an emerging requirement from NHS Education for Scotland (NES) for Quality Assurance of programmes. A consensus process has identified standards for attachments and there is a changing GP culture in which visits are accepted.

Work done: A programme of practice visits was commenced during the academic session 2006-7. Approximately 40 practices were visited by members of the teaching staff based in Dundee. These visits were exploratory, supportive and informal aiming to: (1) Share good practice; (2) Collect information about practices; (3) Discuss student feedback with tutors; (4) Discuss how marks awarded compared to those awarded by other tutors.

Conclusion/Take-home message: A programme of peer visits to tutors in practices is feasible and supportive for tutors. Further work will establish the relative value of feedback as opposed to visits hence striking the right balance between the two. This will lead to the development of a sustainable transferable model for a QA programme.

Learning environment and learning outcome in affiliated hospitals

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Background: The medical students in Buddhachinaraj Hospital, School of Medicine undertake their clinical placement at community hospitals. The participating hospitals have freedom over selection of teaching styles and teaching sites.

Work done: 115 students undertook their clinical placement at one of six hospitals in 2005-2006. Learning environment was scored by the students using a modification of the Dundee Ready Education Environment Measure. Learning outcome was scored by the teachers in the affiliated hospitals for their performance on learning activities.

Results: Students from hospitals with high learning environment score got A, B, and C grade at 31.82, 61.36 and 6.82% respectively compared to 7.5, 60.0 and 32.5% from low learning environment score. The average GPA from both groups was not different but the average GPA of the A grade from both groups was statistical different.

Conclusions: In the good learning environment, good learning outcome can be expected even though the students got lower GPA before. In contrast, the students with high GPA may or may not learn successfully in the bad learning environment.

Differences in learning environments within a medical school

Rachel Isba*, Paul O’Neill, Gerard Byrne (University of Manchester, Undergraduate Office, 1st Floor ERC, Wythenshawe Hospital, Southmoor Road, Wythenshawe, Manchester, M23 9LT, United Kingdom)

Background: The curriculum within a medical school can be thought of as made up of three parts – the formal, informal and hidden. Within the hidden curriculum, the learning environment exerts particular influence upon medical students. The University of Manchester teaches medicine over five years. At the start of year 3, students start clinical studies within one of four sectors. This arrangement provides a natural laboratory in which to study learning environments.

DREEM is a well-validated generic tool for assessment of learning environments within medical schools.

Work done: This study aims to describe the learning environments within the sectors of the University of Manchester’s Medical School, and to identify similarities and differences that may exist.
7O/P1 Enhancing patient safety behaviors: How to promote the change among medical students?
S Anotayanonth*, U Siriboonrit, S Khwanjaipanich (Chonburi Medical Education Center, 96/141 M00.2, Tambon Bansuan, Amphur Muang, Chonburi, 20000, Thailand)

Background: Improving patient safety is an increasing priority for medical students and hospitals since sentinel events can be catastrophic for patients, caregivers and institutions. What strategies could be used to promote behavioural change to enhance patient safety?

Aim: To evaluate the effectiveness of strategies towards patient safety among medical students.

Work done: Pre-test and safety climate survey were conducted to identify gaps, attitude and strategies to improve patient safety. Multifaceted interventions such as half day interactive training, audit and feedback and quality round were implemented into policy. Patient safety indicators have been monitored monthly.

Results: Before the interventions, approximately 1-4 events per month were identified in 72% of students. However, 31 percent of them would not report the incidence. In addition, 40% of students would not report near-miss events from pre-test. Overall post-test was significantly increased (mean difference = 1.7; 95% CI 1.3 to 2.1, p = .005). A total of 54 reports of clinical risks came from medical students and staff, which were 6-fold increased after implementation. Prescribing errors have decreased for both inpatients (from 1.6 to 1.2/1,000 patient-days) and outpatients (from 6.9 to 5.5 per 1,000 prescriptions).

Conclusions: Multifaceted strategies should be implemented into policy to raise medical students’ awareness and promote patient safety behaviors.

Take-home message: Safe today to safe tomorrow.

7N/P11 Comparing the educational climate in an English and a Scottish Dental School
John Wall, David Wall*, John Frame (West Midlands Deanery, St Chads Court, 213 Hagley Road, Birmingham, B16 9RG, United Kingdom)

Work done: The DREEM, a 50 item valid and reliable educational climate measure, was used to evaluate and compare the educational climate in two dental schools, Birmingham in England and Dundee in Scotland, for students in year four of their five year undergraduate dental course.

The overall response rate was 65% (80 out of 123 students responded).

Results: Dundee scored 139 out of 200, and Birmingham 117. Both of these overall scores were in the acceptable range. However Dundee scores were significantly higher that Birmingham overall (p = less than 0.001) and in each of the five DREEM subscales. In both dental schools, the common good features were knowledgeable teachers, good friends, and pleasant accommodation. The common poor features were authoritarian teachers, no student support system and overemphasis on factual learning. There were empathic teachers with good communication skills in Birmingham, and competency based teaching and lack of cheating behaviours in Dundee. Poor features included ridicule of students in Dundee, and cheating behaviours among students in Birmingham.

Conclusions/Take-home messages: Steps need to be taken to improve student support, improve teachers’ teaching and feedback skills, and to find out about and eradicate cheating behaviours among dental students.

7N/P12 Students’ perception of the educational atmosphere during clerkship in a Brazilian School of Medicine: a two year experience
Renata Daud-Gallotti, Milton De Arruda Martins*, Augusto Scalabrin-Neto, Iринeу Tadeu Velasco, Iolanda Calvo Tibério (University of São Paulo School of Medicine, Avenida Dr Arnaldo, 455, 01246903, Brazil)

Background: Students perception of the educational atmosphere influences the learning process. This study aimed to evaluate the students’ perception of the educational climate and to determine its relationship with students’ performance during clerkship in a Brazilian School of Medicine.

Work done: Our 2 year-clerkship is divided in 5 main areas: internal medicine, pediatrics, surgery, gynecology/obstetrics and preventive medicine. In the end of 2005 and 2006, the "Dundee Ready Education Environment Measure - DREEM" was applied to 5th and 6th year-students. Students were asked to complete the questionnaires anonymously and to register their graduation mean grades. Overall DREEM scores and separate DREEM-domain scores were obtained, and compared regarding gender and graduation year. The correlation between DREEM-scores and graduation mean grades was determined.

Results: A total of 523 instruments were analyzed. The answer-rate was 91%. The overall DREEM score was 119.5/200, indicating a predominantly positive perception. Students’ perceptions of learning, teachers, academic self perception, atmosphere and social aspects were also positive, corresponding to: 27.0; 27.2; 20; 29; 16.4 respectively. No differences were detected regarding gender or graduation year. A weak correlation was found between DREEM-scores and graduation mean grades (r=0.2).

Conclusions/Take-home messages: In summary, an optimistic educational climate was perceived by our students during clerkship.
7O/P2  Self assessment of the sixth year medical students toward patient safety goal
Wanna Angkasuvan (Hatyai Medical Center, CPIRD, Ministry of Public Health, Hatyai Hospital, Hatyai, Songkla, 90110, Thailand)

Background: Patient safety education has been inadequately addressed in the medical curriculum although patient safety and quality of care have emerged as major concerns in medical practice. The aim of this study was to examine the self-assessment of sixth year medical students and how they perform medical practice according to JCHAO patient safety goal.

Work done: The sixth year medical students were surveyed, using a quantitative questionnaire, 5 Likert scale based on 5 categories of JCHAO patient safety goal: 1= Improve the accuracy of patient identification, 2= Improve the effectiveness of communication among caregivers, 3= Improve the safety of using high-alert medication, 4= Elimination wrong-site, wrong-patient, wrong-procedure surgery, 5= Reduce the risk of health care-acquired infection.

Results: There were 15 respondents comprising 62.5%. The frequencies of performance during a year were 1=<15%, 2= 16–35%, 3= 36–65%, 4= 66–85%, 5=>85%. The mean score of 4.2 was the highest relating to Reduce the risk of health care-acquired infection, the lowest score of 3.4 indicating The effectiveness of communication among caregivers.

Conclusion: A patient safety goal is the basic goal for physicians to perform, preventing medical errors. The use of a patient safety goal may be the guideline for patient safety education to increase self-awareness of patient safety for the future physicians.

Take-home message: Patient safety is one standard of quality care. Patient safety education must be integrated in the medical curriculum and clinical practice.

7O/P3  Using medical malpractice cases for patient safety education
Hye Rin Roh, Sang Wook Lee, Sung Bae Park*, Ji Yeon Lee, Sook Won Ryu, Jeong Hee Yang (Kangwon National University College of Medicine, 192-1 Hyojja 2-dong Chuncheon Gangwondo, 200-701, Republic of (South Korea))

Background: The purpose of the study was to develop the program for motivating the students for patient safety and to evaluate the effectiveness.

Work done: 3rd-year medical students discussed eight common medical malpractice cases with active learning techniques at College of Medicine, Kangwon National University. We surveyed these 34 students and interviewed three focus groups for the evaluation when the program was finished.

Conclusions: Most of the students answered that the program was satisfactory and helpful to understand what patient safety is. Students agreed that they actively had participated in and enjoyed the discussion. Students were also satisfied with the level and quality of the cases. Students stated that they realized the importance of patient safety, and how to prevent medical errors.

Take-home messages: Medical malpractice case discussion can be taken into account to motivate the students for patient safety.

7O/P4  Patient safety training and junior doctors’ attitudes
Kirsty Forrest*, Nicola Cooper (University of Leeds, Academic Unit of Anaesthesia, The General Infirmary of Leeds, Great George Street, Leeds, LS1 3EX, United Kingdom)

Background: Increasing emphasis on patient safety training has led to the introduction of training for junior doctors at our institution. This is for half a day and covers the nature and scale of adverse events and how to tackle error in working areas. Interestingly one of the major teaching points within the course is that it is harder to change people’s behaviours than to adapt the system to human fallibility. However there is a paradox - error reporting in the UK is still associated with blame and instead of changing the system we are trying to change people’s behaviours with our teaching. We wanted to know whether our teaching did achieve any change in attitudes.

Work done: Junior doctors who attended the teaching (150 during Dec 06 - March 07) were asked to fill in a questionnaire before and immediately after their training. The questions were answered on a 5 point scale from strongly agree to strongly disagree. The stems were a mixture of knowledge, communication, team working, attitudes and behavioural questions around patient safety. Statistical analysis will be of the groups and individual responses before and after training. The results will be presented at the conference.

7O/P5  Emergency medicine in the undergraduate medical education: curriculum and assessment
M Russeller*, M Weinlich, M Stier, C Ziesel, F Walcher, I Marzi (Department of Trauma Surgery, Theodor Stern Kai 7, Frankfurt, 60590, Germany)

Background: In Germany, emergency medicine is an autonomous cross section speciality in undergraduate medical education with the obligation of students’ performance records. This work presents the preliminary results with a new curriculum, moreover the study of practicability of an OSCE as assessment tool in emergency medicine.

Work done: The longitudinal structured education program starts with theoretical and practical sessions of medical first aid, followed by interdisciplinary lectures covering all fields of emergency medicine. After passing a written examination, students obtain a basic life support as well as advanced cardiac life support course. They participate in three shifts on ambulance vehicles supervised by emergency physicians. For the final examination, a 10 station OSCE was tested with 45 voluntary students.

Results: 70% of the students rated the overall program as excellent, expedient and reasonable for their future medical occupation; 30% as good. The OSCE was rated as excellent by 76%, as good by 24%. Students judged the OSCE to test relevant aspects of the medical practice.

Conclusion: The implementation of the new program for the cross section speciality emergency medicine resulted in very positive evaluations. The OSCE offers an adequate option to assess practical skills acquired in the cross section speciality emergency medicine.
7O/P6 Holistic performance of senior medical students in neonatal resuscitation
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Background: Neonatal resuscitation is one of the most important clinical skills for doctors, especially those who take responsibility in newborn deliveries. As the team leader, holistic performance for this team-based systematic clinical practice is required.

Objective: To evaluate performance in neonatal resuscitation of the senior medical students concerning three aspects; knowledge, practical skills and resuscitation team cooperation skills

Work done: Workshops for neonatal resuscitation conforming to the 2006 American Academy of Pediatrics (AAP) Neonatal Resuscitation Training Program (NRP) were performed for 24 sixth year medical students by four certified AAP NRP instructors at the beginning and again, at the end of the same academic year (April 2006-February 2007). In addition, all of them would experience real situation practice during their Pediatric clerkship term. Throughout the last scenario based workshop with manikins, assessments for knowledge, practical skills and team cooperation skills were done in every step. Minimal acceptable level was 85%

Results: For knowledge assessment, mean MCQ score was 87.42%. Practical skills performance was 86.11%. Team cooperation performance was 79.96%.

Conclusion: To achieve holistic performance for neonatal resuscitation of senior medical students, team cooperation skills should be more emphasized and trained, compared with knowledge and individual practical skills.

Take-home messages: All three tasks; knowledge, practical skills and team cooperation skills should be involved in neonatal resuscitation training.

7O/P7 Analysis of a national core curriculum developed by the Pediatrics Curriculum Committee in Egypt, for implementation by the Governmental Faculties of Medicine
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Background: The Egyptian Supreme Council of Universities, has formed national curriculum committees to produce National Core Curricula for all medical disciplines in the Governmental Universities. This is the first attempt of its kind in the country, and it has been met with variable responses.

Work done: In a trial to understand these responses, and in order to predict the possible difficulties in implementation of these curricula, we have carried out a systematized analysis of the National Core Curriculum of Pediatrics.

Results: The psychological perspective underlying the curriculum is behavioral. The curriculum was organized following the bottom up approach. There was no tracking, hidden curriculum, or social inequity. The curriculum emphasized the use of Objective Standardized tests. Instructional materials were produced to standardize clinical teaching and assessment. The curriculum change followed the Research, Development & Diffusion Approach. The main areas of weakness in the curriculum included: lack of student representation in the designing committee, and lack of horizontal integration between the courses taught simultaneously with the curriculum, reflecting the nature of the program of undergraduate education, which is traditional, discipline-based.

Conclusions: The opposing attitude of some of the faculty staff members, the limited physical facilities and the economic constraints are among the threats to the proper implementation. We suggest wider discussions about the curriculum among faculty staff, and the use of different ways of motivation to encourage them to upgrade their teaching and assessment capacities and implement the curriculum.

7O/P8 The rationale for management training for HIV/AIDS managers
J E Wolvaardt*, E M Webb, E Castleman (School of Health Systems and Public Health and Foundation for Professional Development, PO Box 667, Pretoria, 0001, South Africa)

Background: In South Africa substantial debate has ensued since the World Health Report (2000): Health systems: Improving performance that rated our healthcare system 175/191 for the delivery of quality health care. Despite the acknowledgment that adequately trained managers are essential to both the functioning of a health care system and in particular the success of ARV roll-out, there has been no scientific assessment of the management needs of HIV/AIDS managers.

Work done: A total of 205 active HIV/AIDS managers participated in an intensive post-graduate management programme and completed a self-administered questionnaire for this study upon completion.

Results: Overall the 148 respondents managed 28,170 staff members, had management responsibilities (93%), and spent more than half their time on management tasks (70%). Almost half were both responsible and engaged in management activities without any prior management training.

Of the 270 examples of changes already made, 67% were budgets; M&E plans; etc. and the 273 intended changes that management activities without any prior management training.

Conclusion: A successful ARV roll-out is dependent on the management skills of health professionals, who when thrust into these positions can apply management skills after specialised training.

Take-home message: A successful ARV roll-out is dependent on the management skills of health professionals, who when thrust into these positions can apply management skills after specialised training.

7O/P9 Using a medico-legal module to enhance skill development in report writing in students of forensic medicine
Nilukshi Abeyasinghe (Department of Forensic Medicine, Faculty of Medicine, 25 Kynsey Road, Colombo, 8, Sri Lanka)

Background: This study was done to determine how a module could incorporate skill development of students in report writing, a documentary form of expert evidence. The report included a short history, injury description, and relevant opinions required in court. The activities in the module to enhance this skill were slide demonstrations, photographed cases and case reports describing injuries, a clinical lecture demonstration of history taking, examination and report writing, and interactive sessions on formulating opinions to court.
7O/P10 Evaluation of learning in diabetes mellitus
Waraporn Polamaung* (Waraporn Polamaung, MD, Department of Medicine, Prapokklao Hospital, Chanthaburi, 22000, Thailand)
Objective: To evaluate knowledge, attitude, confidence in care of diabetes and how to learn.
Work done: A questionnaire was distributed to 89 fourth-year, fifth-year, sixth-year medical students and interns.
Knowledge about diabetes was assessed using a questionnaire. A five-item scale was used to assess the attitude.
Learning methods were evaluated by rank-score and opened suggestions.
Results: The return rate of the questionnaire was 98%. The knowledge scores showed no significant difference by year of training; the average score was 61% correct, with no increase in score for increased training. Deficiencies in knowledge were detected e.g. the goal of management, the contraindication of new anti-diabetic agents, the way of prevention diabetes. The attitudes that should be improve were about the reach goal of management, dietary control, optimal weight and quit smoking. The mean of confidence in management of diabetes was 49.5% and correlates to the knowledge. Learning experience mainly come from lecture. Case conference and real world situation were requested.
Conclusions: The study identifies several areas of knowledge, attitude that is required in care of diabetes and how to improve.
Take-home message: Developing a new program should be added to improve medical education in diabetes management.

7O/P11 New curriculum in stomatologic education in Kyrgyz State Medical Academy
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Aim: Implementation of new curriculum in stomatologic education program in Kyrgyz State Medical Academy.
Work done: In Kyrgyzstan stomatologic education program is based on 5-years of training in medical school. In the traditional curriculum 65% of hours is for general medicine subjects, which in WHO experts' opinion prevents students from mastering clinical skills. With respect to WHO experts' recommendations, from 2003 a new curriculum was implemented, where parity of hours of stomatologic disciplines and general medicine subjects is equal (50%/50%).
Results: Despite the new curriculum implementation there is still a problem with mastering clinical skills by students. The rational decision of this problem is implementation of European educational standards, where parity of stomatologic disciplines hours and general sciences disciplines is 60% to 40%. This classical parity has existed for many years in international practice, which was justified by qualitative training of professionals at undergraduate level. Another problem is poor equipment of clinical chairs and bases for stomatologic education.
Conclusions: To reach high quality of stomatologic education it is necessary to improve the curriculum according to international standard requirements, to be guided by strengthening of clinical skills of stomatologists and to provide the educational process by a wide set of special phantoms, training models, tools, diagnostic and stomatologic equipment.

7P New interdisciplinary Foundation Phase for Health Sciences at the University of Stellenbosch (South Africa)
A J N Louw, M M Bester, F J Cilliers, M F Gerber, C J Meyer, P S Steyn, J G Strijdom, P L vd Merwe, B B van Heerden (University of Stellenbosch, Faculty of Health Sciences, PO Box 19063, Tygerberg, 7505, South Africa)
Background: Various challenges (mainly external) face the Faculty of Health Sciences of the University of Stellenbosch. It originates mainly from pressure from the Department of Health for a shortened curriculum, a greater emphasis towards community health, and the bigger intake of students with academic deficiencies. It caused the faculty to do an in-depth investigation into its current curriculum, which ipso facto caused an in-depth investigation into the foundation phase as well.
Work done: The process of investigation made it clear that it would be possible to present the first phase interdisciplinary within the faculty. A starting point was to contextualize the natural science content as far as possible within the health science disciplines. Challenges were to take up the relevant components of the current phase into either the foundation phase, or the medical clinical phase, and as well to give more support to beginner students according to professional and generic skills. It was further necessary to ensure that these modules were in line with the Profile of the Stellenbosch Doctor. Various planning workshops brought about four modules, namely (1) Personal and Professional Development for the Health Scientist, (2) Life Forms and Functions of Clinical Importance, (3) Chemistry for Health Sciences, and (4) Health in Context. These modules are aimed to be joined by five different disciplines of the Faculty.
Conclusions: It is therefore possible to bring about one foundation phase curriculum which serves training across the different health professions.
Opinions of physicians and Interns in Semnan University of Medical Sciences about practicability of medical basic sciences in clinical practicability

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Background: Today education of basic sciences is considered as the basis of medical education. One of the existing problems is the absence of perception of the relationship between basic sciences and clinical medicine and there is ambiguity for many physicians as to how much learning of present contents of basic sciences is useful. The opinions of physicians about this matter can be very valuable.

Work done: In this study, a questionnaire was distributed among 232 of the physicians and interns in Semnan University of Medical Sciences.

Results: According to opinions of physicians and interns, physiology, medical terminology and bacteriology with scores of 4.12, 3.84 and 3.65 respectively from 5, have the most practicability and entomology, structural biochemistry and medical physics with scores of 1.73, 1.78 and 1.95 from 5, have the least practicability in the clinical setting. Physicians with longer professional expertise believe more practicability for medical basic sciences.

Conclusions: According to present and future needs of physicians and cultural and geographical conditions of society, it is necessary to review and correct the contents of medical basic sciences and it is better to insist on verification of the contents of the basic sciences.

Integrated curricula – being a doctor takes more than just science

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Background: In the reform curriculum at Witten/Herdecke University (UWH) we believe that medical education has to include additional input to usual science classes and clinical rotations, especially in communication skills, ethical issues, research methods and economic understanding.

Work done: The Integrated Curricula (IC) were initiated by students in 2002 and advanced to a compulsory part of the medical curriculum with a credit system mandatory for the medical degree. Medical students at UWH follow a longitudinal curriculum integrated into their basic curricular schedule which consists of four categories (Communication, Scientific Skills, Ethics and Health Economics). All IC courses are evaluated regularly.

Results: The education in IC is focused on a high interaction by using different teaching methods (workshops, case study, journal clubs) in small groups. The four categories in detail are: I. Communication: Communication theory, Simulation- and Real-Patient-Contact; II. Research: Analysing publications, developing research question, Biostatistics, Publishing, Ebm; III. Ethics: Philosophic aspects of death, self-reflection, palliative medicine, bioethics; IV. Health Economics: Micro-economics, health funding, organisation structure, quality management.

Conclusions/Take-home messages: The IC are a great model to fulfill the spectrum of medical training. The evaluations showed a wide satisfaction and students valued the IC as highly useful.

Acceptability of feedback-systems for formative and summative assessment in veterinary medicine

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Background: Students in lectures stay rather passive which does not better the learning results. To activate the students and their reasoning about the lecture topics an anonymous feedback-system for formative assessment and evaluation has been used since summer 2005. The new German-law-for-the-education-of-veterinary-students (TAppV) prescribes more exams in the course of the study. These time consuming changes cause a shift from the traditional oral exams to written tests. The feedback-system could also be used for summative assessment.

Work done: The acceptability of the feedback system was tested in six lectures with a total of 164 students (F) and one exam with 222 Students (S). The survey was done with a 6-point-Likert-Scale (school grades).

Results: The students enjoyed the use of the feedback system (F1.4-S1.5). It was easily operated by them (F1.2-S1.4), students felt they learned better (F 2.9vs2.2- S3.2vs2.3) and wished a more frequent application of the system (F1.7-S2.2), but not in every lecture (F3.4-S3.9). The use for formative assessment (F1.9-S2.0) and evaluation (F2.4-S1.9) was preferred compared to the summative assessment (F4.8-S2.8). Partly mistrust to the new technique existed (41.1%).

Conclusions: There is a high acceptability of the application of feedback systems by the students. Therefore we will intensify its utilisation for formative and summative assessment.

Developing a module in the University of Çukurova: Multidisciplinary Approach to Elderly

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Background: Modules improve students' cognitive ability, analyzing and implementing skills in medical education. The purpose of the curriculum development activities should accomplish knowledge, skills and attitudes which focus on community oriented health problems and bring in critical thinking and reasoning ability with successful communication and management skills of undergraduates.

Work done: The Curriculum Development Committee’s first action for developing a new module was to choose the topic from a priority index. The priority index was developed by considering prevalence of diseases and conditions, severity of clinical conditions and probability of health care. “Obesity” and “approaches to elderly” have been chosen with these specifications. A survey among faculty was carried out and the second topic was chosen. A specialist panel was held and aims and objectives were determined. An interactive module was placed in the third grade’s curriculum. Five scenarios, trainer and trainee guidelines were developed by 9 faculties who have been assigned as scientific counselors.
Conclusions: Modules have a very important place in undergraduate education for implementing knowledge, skills and attitudes. This module will take place in the 2007 educational year and evaluation of the module with students' and faculty's feedbacks is planned.

Take-home messages: All topics in a curriculum could be integrated with modules.

7P/P6 São Camilo medical course: a new integrated and student centered curriculum
Julio Cesar Massonetto, Margaretha Rose Priel, Nader Wafae, Marcos Frizzarini, Luciane Lúcio Pereira (Centro Universitário São Camilo, Avenida Nazaré, 1501, 04263-200, Brazil)

Background: Brazil has a ratio of 1 medical doctor to 640 people. Despite massive corporative pressure against the opening of new medical schools, the Centro Universitário São Camilo, a traditional health sciences school located in the biggest city of the country, has been awarded a license by the Ministry of Education to start its medical course as from this year of 2007. The aim is to present a curriculum with pedagogical purpose in compliance with the current rules dictated by the Ministry of Education.

Work done: Our curriculum is composed of: a) Interdisciplinary modules integrated; b) Problem-based learning carried out in small groups in tutorial sessions; c) Insertion of students in the public health system from the beginning of the course. We kept partially the format of traditional lectures in the first two-year modules, in order to promote gradual student adaptation to the PBL process. Another important concept is to favor medical doctors' graduation in such a way that they would work in the countryside where there is shortage of such professionals. To make it possible, the course will be offering full scholarships to 10% of students who come from those areas.

Conclusion: Over 70% of the medical courses in Brazil have still been working with no integration and a basic cycle dissociated from the clinical cycle; teacher-centered methodology and cognitive assessment only. We believe that this new course will produce better prepared medical doctors for the country's health system.

7P/P7 Vertically Integrated Learning: beyond peer to peer learning
George T Somers, Tangerine Holt, Natalie Radomski (Monash University, Centre for Medical and Health Sciences Education, Building 15, Clayton Campus, Wellington Road, Monash, VIC 3800, Australia)

Background: The purpose of the presentation is to describe our initial experience with an innovative educational initiative through the establishment of a Vertical Integrated Learning Community at a Rural Clinical School. It is based on the Harvard/Oxford University and Sheffield Medical Society models. It will look at the essential elements of teaching and learning that are part of the medical undergraduate curriculum and how these have been integrated with minimum disruption. It will highlight opportunities and the challenges associated with the implementation of a house model in curricula, as well as the benefits experienced.

Work done: Medical students from each year, interns, registrars and the international medical graduates (IMG) who were undergoing training at the rural site were allocated to one of several houses. Key educational strategies included mentoring, educational support, role modeling and pastoral care using a vertically integrated approach in fostering professionalism in a medical manner.

Conclusion: The process for engagement and implementation, structure and function, activities and experiences of all stakeholders are critical in the development of such a model. An evaluation of the outcomes to vertically integrate medical education teaching and mentoring in medical curricula so as to maximise the benefits of teaching and learning by working towards minimising the impact of potential barriers will be discussed.

Take-home message: Vertical integrated learning promotes the practice of life-long learning and has the potential to generate a culture of cooperative vertically integrated learning throughout the medical academic community.

7P/P8 Integration of social science and clinical teaching: why now, and what for?
M A Martimianakos*, C Dewa, A Yip, B D Hodges (Wilson Centre for Research in Education, University of Toronto, 200 Elizabeth St., Eaton South 1-565, Toronto, Ontario, M5G 2C4, Canada)

Background: Funding agencies for health science research are encouraging interdisciplinary approaches that incorporate social science perspectives. North American medical school demographics are diversifying to include faculty with backgrounds in the social sciences. There is increasing focus on exploring ways to encourage collaboration between social science researchers and clinical teachers to improve both learning and practice. Yet, there is very little in the form of empirical research studying what impedes or facilitates the integration of social science into clinical research and teaching.

Work done: This study explores institutional attitudes, priorities and expectations with regard to integrating social science knowledge into the clinical training programs in the Department of Psychiatry, University of Toronto. Ten semi-structured interviews (1.5 hours each) were completed with medical school decision-makers. The interviews were transcribed and analyzed iteratively using meaning categorization method.

Conclusions: Emergent themes demonstrate pervasive attitudes regarding what constitutes ‘relevant’ knowledge for clinical practice. Decision-makers delimited the type of educator and topics perceived ‘relevant’ and ‘appropriate’ for the clinical setting. They also articulated the need for social scientists to establish the ‘applicability’ and ‘credibility’ of their work, citing the political and emotional nature of some social science research as problematic.

Take-home message: Faculty development interventions can be assessed sociologically by considering how well individual learner needs are reconciled with institutional expectations.

7P/P9 Development and implementation of an integrated veterinary Bachelor Master Curriculum in The Netherlands
Hellen van der Maazen*, Peter van Beukelen, Herman Egberink (Faculty of Veterinary Medicine, Utrecht University, Yalelaan 1, Utrecht, 3584 CL, Netherlands)

Background: After 2 successful major curriculum changes in respectively 1995 and 2001, the bachelor master curriculum is now being developed at the Faculty of Veterinary Medicine, Utrecht University. The Educational Board installed a committee whose task was to develop a blueprint for the veterinary bachelor curriculum, which was presented in December 2005. The 1995 and 2001 curricula were mainly structured on basis of disciplines. The main objectives for
the new curriculum are creation of organ- instead of discipline-oriented subjects; integration of topics of health and disease; further integration of research and education and emphasis on evidence based veterinary medicine (EBVM), professional behaviour and problem-solving skills.

Work done: For each subject within the bachelor curriculum an educational working group (EWG), with a representative of each department, has been appointed. The EWGs are responsible for the development of the education for their subject. A Project Group advises all EWGs as well as the Educational Board and is responsible for the coherence within the bachelor curriculum as a whole, concerning goals, educational concept and assessment. The Project Group gives specific attention to implementation of EBVM, professional behaviour and problem-solving skills in all subjects of the curriculum. The bachelor will start in September 2007.

7P/P10 A change of perspective – humanities and liberal arts in medical education - The Witten model
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Background: Witten/Herdecke University (UWH) developed a distinctive format for education of medical students that introduces the concept of humanities as a cornerstone in medical education. The faculty of humanities and liberal arts has been providing a compulsory core-curriculum for all students of all faculties since 1983. Attending this core curriculum accounts for ten percent of the entire workload of UWH degree programmes (including medicine).

Work done: The conceptual idea of the program is that literature, philosophy, ethics, history, religion, social sciences, arts (theatre, film, and fine arts) provide additional perspectives and are viewed as essential for medical students. The humanities and arts are taught to enhance communication skills, reflection competence and competence in arts of future physicians. Social sciences and history place medical practice in cultural and social contexts and explain the influential role of culture in the understanding of illness.

Conclusion: The core curriculum develops competencies that exceed specialized medical training but are demanded in today's professional life. Experience in liberal arts and the humanities prevents a restricted view of the problem-diversity that graduates will face in their professional future.

7P/P11 Developing curriculum integration for Preventive Medicine
Regina Meninni*, Francisco Roberto Gonzales Santos, Rosemarie Andreazza, Francisco Antonio de Castro Lacaz, Mariangela Caimelli Prado, Eliana Tiemi Hayama, Sandra Aparecida Ribeiro, Stewart Mennin (Universidade Federal do Sao Paulo, Departamento de Medicina Preventiva, Rua Borges Lagoa 1341, University of New Mexico School of Medicine, Albuquerque, New Mexico, USA, 04038-032, Brazil)
Background: Following the publication of national guidelines for change in health professions education, the Department of Preventive Medicine at UNIFESP undertook a revision of its 900 hours across 5 years of the curriculum with the goal to rethink its role in medical education and in the health system.

Work done: Individual interviews provided perspective on change. Faculty development workshops over 7 months focused on priority health needs and development of global competencies leading to generative themes that functioned as axes of collective health across the curriculum. Concept maps were generated and refined. Comprehensive assessment strategies and teaching/learning activities, both in and out of class, were identified. Detailed blueprints were constructed across competencies and years. Dialogue and revision by working groups improved the planning and reunified disparate groups.

Conclusions: Collective curriculum planning succeeded, opened dialogue, and refocused thinking from disciplines to competencies, priority health needs, teaching activities, early clinical involvement in primary care clinics, and knowledge built from practice. Partnerships between the University and Department of Health in Sao Paulo are developing. Interest in collaboration among other departments at UNIFESP is increasing.

Take-home messages: Continuous faculty development changed the focus of curriculum planning from disciplines to collective teaching/learning and health.

7P/P12 Do too many cooks spoil the broth? Conceptual remarks and possible pitfalls during curriculum change towards an organ-centred, interdisciplinary approach
Roger Krofp*, Christian Schirro, Franziska Wirth, Erich W Russi (Office of the Dean of Education, Faculty of Medicine, University of Zurich, Pestalozziistrasse 3/5, Zurich, 8091, Switzerland)
Background: Until recently the curriculum of the clinical years for undergraduate medical students at the University of Zurich was taught in a discipline centred approach. By changing the curriculum to an organ-centred, interdisciplinary approach various medical disciplines are forced to reorganize their learning content across the various organ system blocks taught during the 3rd and 4th year. However in this rearrangement process communication and mutual agreements among faculty are of utmost importance. Additionally the number of teachers from each medical discipline for a given number of lectures seems to shape students’ perception of the coherence of organ blocks.

Work done: Thus we investigated the correlation between number of teachers, their corresponding number of lectures and the overall rating of the organ block by students.

Conclusions: Preliminary evaluation data suggest that a high level of dispersion of learning content to different teachers leads to a loss in context and coherence of the medical field in question. These findings are discussed focussing on faculty development and the impact of interdisciplinary reviews of multiple choice exam questions on the coherence of organ blocks.

7P/P13 From essential skills to developing clinical competence
Marian A Surgenor*, Julia Dickson, Gerard John Byrne (University Hospital of South Manchester NHS Foundation Trust, Undergraduate Medical Education Department, Southmoor Road, Manchester, M23 9LT, United Kingdom)
Background: At the beginning of the Academic Year 2004 The University of Manchester Medical School introduced Early Experience (EE) for Phase 1 students (years 1-2). The aim of learning through EE is to put the learning into context and to orientate it towards the clinical environments where medicine will be ultimately practised. The EE sessions are designed to aid the students to acquire and practise the clinical communication and history taking skills they will need.
in Phase 2/3 (years 3-5). To achieve these outcomes the students work closely with the tutors, other health professionals and interact with the patients, their families and friends. The programme is intended to help the students develop self awareness, professional and ethical behaviour and share with others through discussion and constructive feedback.

Work done: The basic skills course at the beginning of Phase 2 required to be reorganised and redesigned to follow on from EE. Although much thought and planning went into this new course, the outcome was unexpected. Neither the EE nor the Phase 2/3 staff had taken into account the full extent the effect of EE had on preparation of the students for Phase 2/3. We intend to present the positive and negative outcomes of the evaluation of the Introduction to Clinical Learning Course (ICL) and raise issues that require to be addressed for the forthcoming academic year.

Conclusions: At this point we have an appreciation that transfer from EE to full time clinical years is a complex process that requires significant planning.

7P/P14 Biology, ecology and culture: a new model for teaching diversity in the medical curriculum
C-T Fong*, S Brown-Clark, A C Nofziger (University of Rochester School of Medicine & Dentistry, Box 777, University of Rochester Medical Center, 601 Elmwood Avenue, Rochester, NY, 14642, United States)

Background: Since the 1970s, medical research has validated numerous biochemical and genetic explanations defining disease states and predisposition. Modern epidemics such as HIV infection and obesity highlight the roles of global ecology and culture in relation to human illness. These developments inform our understanding of diversity; accordingly, we propose an updated framework that examines health and disease in terms of the interactions between biology, ecology and culture. The biology-ecology-culture model places focus on interactions between these three elements when considering, for example, pharmacogenetics and biological susceptibility (biology and ecology); social ecology (ecology and culture); or subcultures around human disabilities (biology and culture). The interactions of biology, ecology and culture within a population define its ethnicity; these same interactions for individuals define one’s biopsychosocial identity.

Conclusions: We propose this bio-eco-cultural framework as a new heuristic model for a diversity-based global medical curriculum.

Take-home message: 1) Medical educators must define a heuristic model to address new knowledge in genetics, global ecology and epidemics, which challenges older ill-defined models about race, ethnicity and difference. 2) A model focused on interactions among the biological, ecological and cultural dimensions within populations and within individual patients is one such a model.

GIME
7R Good Ideas in Medical Education (GIME): Session 2 – Teaching, Learning and Assessment

For abstracts see 6R.

Short Communications
7S Postgraduate specialist training

7S/SC1 Postgraduate medical education: competing ideologies
Steven J Agius, Sarah E Willis, Patricia J McArdle, Paul A O’Neill* (University of Manchester/North Western Deanery, Medical School, Stopford Building, Oxford Road, Manchester, M13 9PL, United Kingdom)

Background: A qualitative UK study exploring fundamental ideologies – assumptions, beliefs and values - held by different groups involved in postgraduate medical education within one speciality (general medicine) was carried out to give an understanding of the competing ideologies about professional training.

Work done: Representatives from national leaders of education, directors of post-graduate education in one English region, and medical directors, tutors and senior house-officers (residents) from 6 hospital Trusts were interviewed. Interview transcripts were analysed to examine various ideologies of professional training and how the dominant ideology underlying the process of postgraduate training was reconstructed using Gramsci’s theory of hegemony.

Conclusions: The current dominant ideology represented by deliverers of education was being re-negotiated using hegemonic processes, which recognised that a counter ideology cannot be imposed on the rank and file of the clinical educators, which does have the power to reject it. Take-home messages: Dominant ideology emphasises the close relationship between educator and individual trainee (apprenticeship), the centrality of professional examinations, the major impact on education by clinical service and the sense of loss and threats to custom and practice. There is evidence of emergent counter-ideology, primarily from the national and regional leaders, with the hegemonic aims of preserving the professional autonomy and legitimacy.

7S/SC2 The views of specialist registrars (SpRs) and attending-doctors (ADs) on the quality of supervision in university (UTH) and district teaching hospital (DTH) settings
Jamiu O Busari (Dept. of Paediatrics, Atrium Medical Center, Henri Dunantstraat 5, 6401 CX, Netherlands)

Background: Effective clinical supervision promotes the professional development of specialist registrars (SpRs). Our objective was to investigate if the quality of supervision is influenced by university (UTH) or district teaching hospital (DTH) settings. To achieve this, we investigated how SpRs and ADs in both hospital settings perceived quality of supervision (PQS).
Work done: In two different studies, the quality of supervision of ADs in university and district teaching hospitals was rated separately by SPRs and ADs. A questionnaire containing open ended questions and the Cleveland Clinic’s Teaching Effectiveness Instrument (CCTEI) was used for this purpose.

Results: The SPRs rated the quality of supervision of 47 attending doctors. The mean PQS was 3.85 (sd 0.29) and 3.56 (sd 0.44) in the DTH and UTH respectively (p=0.02). Forty-three ADs rated their own perceived quality of supervision. The mean PQS of the ADs was 3.73 (sd 0.31) and 3.67 (sd 0.35) in the DTH and UTH respectively. ANOVA failed to yield a significant difference among the means (F=2.35, P= 0.08).

Conclusions/Take-home messages: Overall, PQS was better in the DTH compared to the UTH. Generating a good learning environment and respecting the autonomy of the learner was rated favourably by SPRs. ADs cited teaching and communication skills, time for teaching and feedback as factors influencing effective supervision.

7S/SC3 What makes a good microscopist?
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Background: Microscopy is central to the practice of Haematology, yet such skills are not assessed prior to a trainee entering Haematology. Critical thinking employing this visual data adds further complexity to the diagnostic process.

Work done: This research used an ethnomethodological qualitative methodology and employed a semi-structured interview. Twenty consultant haematologists were interviewed to examine what skills are required to become a ‘good microscopist’. The results were transcribed and analysed using the N-vivo package.

Results: Experience, methodicity and interest were the most frequent qualities identified plus a recognition that diagnosis should not be rushed. Respondents had difficulty articulating what constituted ‘talent’. They were clearer about how a marrow report should be written - answering a clinical question with a succinct conclusion. However, only 75% still used a template during routine work, 25% ‘eyeballed’ the material relying on pattern recognition to reach the correct conclusion.

Conclusions: This research begins to identify for the first time what skills could be assessed in a trainee prior to entering this specialty. It opens up further research questions about ‘field dependency’ in aspiring haematologists. The fact that a quarter of consultants have abandoned a systematic approach emphasises the need for better quality tools to ensure continued professional competence.

7S/SC4 Implementing the Australian Curriculum Framework for Junior Doctors
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Background: The Australian Curriculum Framework for Junior Doctors balances the major areas of clinical management, communication and professionalism, and highlights the importance of an integrated approach to prevocational learning and teaching. It supports practice-based, opportunistic and continuous learning, and helps to define performance supervision requirements for junior doctors.

Work done: Building on work undertaken in Australia and overseas, the Writing Group critically appraised existing prevocational curricula. Mind-mapping software was then used to represent these curricula in a standardised format. The same software was used to create a blank framework that was readily restructured and progressively populated with Australian content. The Framework has been published in both internet and printable versions.

Conclusions: Key priorities will now include: (1) Mapping the Framework to university, college and other curricula; (2) Reviewing PDs, rosters and teaching methodologies in the context of the Framework; (3) Identifying workplace-based learning resources and assessment tools that will not place undue burdens on junior medical staff or their supervisors.

Take-home messages: A spreadsheet based mapping and graphical representation tool has been developed to support these processes and to highlight areas of duplication and gaps. The Australian approach has been rigorous, timely and practical.

7S/SC5 Remember your first time? Results from the Psychiatry on-call card pilot project
Rory C Sellmer*, Joann McIlwrick (University of Calgary, Department of Psychiatry, Faculty of Medicine, University of Calgary, 1403 - 29 Street NW, Calgary, Alberta, T2N 2T9, Canada)

Background: Trainees are exposed to anxiety-inducing situations while on-call for psychiatry; there is currently no portable educational tool available. We developed a Psychiatry On-Call Card (POCC) to facilitate the assessment and management of on-call problems in psychiatric emergency services. Goals of the POCC were to alleviate trainee anxiety, improve diagnostic and decision-making skills and care for patients.

Work done: A psychiatry resident and practicing ER psychiatrist developed the POCC for clinical clerks and junior-residents by incorporating evidence-based sources as well as expert and consensus guidelines. Feedback from a needs assessment of targeted learners was incorporated into the first draft of the POCC. It was piloted to 25 psychiatry residents and evaluated via an anonymous on-line survey.

Results: The response rate was 84%. The majority believed the POCC improved their ability to evaluate the patient, document the history, prepare a management plan, diagnose and manage common on-call issues, and reduced anxiety. 95.2% indicated they would use the card again.

Conclusions: To our knowledge, this is the first portable education tool for trainees on-call for psychiatry. Respondents perceived an improvement in on-call skills and a reduced sense of on-call anxiety. Trainee perceptions need to be evaluated in further studies.
7T/SC1 Teaching team working on the Delivery Unit using a high fidelity medical simulator
J MacDougall, R Tandon, A Gupta (Addenbrookes’ Hospital, Department of Obstetrics & Gynaecology, Cambridge, CB2 2QO, United Kingdom)

Background: Around 11% of all UK patients suffer an adverse event. 50% are preventable. Human error contributes to 80% of preventable incidents. In obstetrics, poor communication and teamwork are the main reasons for human error on delivery units (DUs). There is limited teaching on teamwork.

The aviation industry and the military have recognised the advantages of simulators in teaching both technical skills and teamwork particularly in crises. Anaesthetic crisis management courses using simulation were established in USA in the 1990s.

Work done: We report on the development of, we believe, the first obstetric crisis resource management (OCRM) course using a high fidelity medical simulator that aims to improve teamwork on the DU. We ran 5 multiprofessional OCRM courses (2005-7). Delegates take it in turns to “lead“ the team in the simulator for different clinical scenarios (eg maternal collapse). Each simulation is videoed and debriefed by faculty focussing on technical skills and teamwork.

Results: Course evaluation used quantitative and qualitative analysis. Key themes identified included leadership, teamwork, delegation and communication.

Conclusions/Take-home messages: Simulators can teach a multidisciplinary obstetric team how to manage obstetric crises. We would anticipate that regular simulator courses will improve patient safety and teamwork on the DU. Further studies are being developed to assess this.

7T/SC2 Integrating medical Simulation with the Foundation Programme
Zoe-Jane Playdon, Rachel Robinson* (KSS Deanery, University of London, 7 Bermondsey Street, London, SE1 2DD, United Kingdom)

Background: We describe our working to integrate both centrally-provided high-tech and locally provided low-tech Medical Simulation with local NHS Trust curricula for Foundation One Doctors.

Work done: Recognising that F1 doctors in other regions had been highly engaged by a one-day high-tech simulation experience, we worked with two providers over an eighteen month period, with the aims of: (1) integrating the one-day simulation with the rest of the F1 doctors’ local curriculum; (2) engaging the F1’s consultant-teachers with the educational process; (3) focussing on the recognition and management of very sick patients; (4) providing each F1 with two opportunities to take part in the simulation; (5) increasing the educational relevance and integration of the day; (6) improving value for money to commissioners.

Results: One provider was able to meet our requirements and in the process, the involvement of the F1 consultant-teachers produced a new concept for a low-tech alternative which could be provided locally, through learning sets of Foundation and Specialty doctors.

Conclusions: New curricular imperatives are likely to influence the future development of medical simulation.

Take-home messages: Educational value is increased by tailoring simulation to new curricula.

7T/SC3 Traditional vs. simulation-based teaching in PAP sampling: a randomized controlled trial
E Durante*, Y Discacciati, K Bakalar, C Dreyer, B Pignolino, N Giraudo (Hospital Italiano de Buenos Aires, Juan D. Perón 4272, 1199, Argentina)

Background: To obtain good quality training in pap smear sampling, traditional teaching requires a lot of resources. Simulation has been largely used in medical education, but evidence about its effectiveness is non conclusive.

Aim: To compare simulation-based teaching with “traditional” hands-on instruction for PAP smear sampling.

Work done: A randomized controlled single-blinded trial was designed. Subjects were selected among participants of a Primary Care course for physicians. All participants received an introductory written material. The intervention group was trained with a plastic pelvic model before a clinical encounter. Both groups were then trained with the “traditional” hands-on method with simulated patients. Performance was measured by trained instructors and the simulated patients blinded to the intervention, using a score checklist defined according to generally accepted criteria. Competence was defined once the trainee completed five consecutive correctly performed practices.

Results: Twenty physicians participated in the study. The mean number of attempts necessary to achieve competence and the total score differed between intervention and control group: 5.5 (95%CI 4.9–6.1) vs. 7 (95%CI 6.3–7.7), p<0.01 and 305 vs. 284, p<0.01 respectively).

Conclusions: Simulation-based teaching appears to be a more effective and efficient method than traditional instruction for PAP smear sampling.

7T/SC4 Using a modified nominal group technique to define a final year medical undergraduate acute adult care program using intermediate fidelity simulation (IFS) at Peninsula Medical School (PMS), UK
Paul Bradley (Peninsula Medical and Dental College, John Bull Building, Tamar Science Park, Research Way, Derriford, Plymouth, PL6 8BU, United Kingdom)

Background: Despite widespread and increasing use of simulation in medical education, there is limited literature on the approach to and implementation of simulation. At PMS final year students attend advanced clinical skills sessions in the Clinical Skills Resource Centres. Seven 2 hour sessions cover acute adult care using IFS. In order to plan and implement the most appropriate curriculum a modified nominal group technique was used to reach consensus on the content.

Work done: Clinicians were invited to a videoconference discussion on the nature and purpose of the intended program. Modernising Medical Careers (MMC) identifies cases where initial management is expected to be within the competence of junior doctors. This list was e-mailed to participants. They deleted and added cases as they felt appropriate and returned by e-mail. Replies were aggregated and ranked and sent out once more. Further additions and deletions were requested and replies were again aggregated and ranked.
Conclusions: The 32 cases from MMC were initially expanded to 57. After further refinement and ranking 20 cases emerged by consensus grouped around 8 case presentations.

Take home messages: A modified nominal group technique has enabled expert input into and consensus on the content of an IFS curriculum for final year medical students.
**Curriculum: Prescribing and Pharmacology**

**7V/SC1 Student confidence does not correlate with increasing knowledge derived from a self-study e-learning program on Pharmacology**

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Background: Due to curricular reform, pharmacology has been integrated throughout the LUMC curriculum using a self-study e-learning program. Previously, learning efficiency was shown with increasing hits, use and grades by using the program in the curriculum (Dubois et al. SMILE 2006). However, we wondered how students felt about their pharmacological abilities.

Work done: 533 students representing 4 cohorts were asked via a Likert scale questionnaire about their confidence with pharmacological knowledge prior to entering clerkships. The cohorts differed as the number of pre-clinical courses that incorporated the self-study program increased from 2 to 17 over the last 4 years.

Results: Over 90% of the students reported to have used the pharmacology e-learning program (which is consistent with our previous data). Greater than 60% of all cohorts felt unable to explain pharmacological mechanisms. The students' confidence did not change in the cohorts with more pharmacology coursework.

Conclusions: Despite 4 years of increasing pharmacology integration, students still lack confidence in pharmacological abilities. We speculate that structural assessment and feedback are necessary to improve this confidence.

Take-home messages: Simply using a program on pharmacology on a self-study basis throughout the medical curriculum is not sufficient to improve students' confidence in their pharmacological knowledge.

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**7V/SC2 An online assessment of prescribing skills of final year medical students and new graduates**

Sabih Huq*, Katharine Boursicot (Barts and the London, Queen Mary's School of Medicine and Dentistry, University of London, Centre for Medical Education, 2nd Floor Robin Brook Centre, St Bartholomew's Hospital, West Smithfield, London, EC1A 7BE, United Kingdom)

Background: There is much public and professional concern over rational and safe prescribing, especially with increased scrutiny of the fitness to practise skills of new graduates.

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**7U/SC4 The establishment of a new PME regulator: lessons from the UK**

Anita Thomas*, Patricia le Rolland, Luke Bruce (Postgraduate Medical Education and Training Board, Hercules House, Hercules Road, London, SE1 7DU, United Kingdom)

Background: Established in October 2005, the independent Postgraduate Medical Education and Training Board (PMEETB) seeks to develop a single, unifying framework for postgraduate education and training across the UK. The organisation took over the responsibilities of the Specialist Training Authority of the medical Royal Colleges and the Joint Committee on Postgraduate Training for General Practice.

Work done: Over the past two years the Board has sought to bring a new consistency to PME through the application of the first ever set of generic standards for training and the development of a new model of quality assurance. This work includes: (1) The approval of curricula for all 57 specialties; plus subspecialties; (2) A National Trainee Survey which provides a national picture of trainees' perception of their training posts; (3) Approval of training posts and programmes.

Conclusions: This information has provided a comprehensive picture of training across the UK and has informed significant developments in our quality assurance mechanisms with a focus on local quality management through the postgraduate deaneries.

Take-home messages: Take home lessons include an understanding of the complexity and challenges of establishing a new regulator; the importance of focused generic standards; and the experience of developing a new quality assurance system.

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**7U/SC5 Measures taken to correct discrepancy between resident evaluations by teachers and overall resident rotation score**

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Background: A review of resident charts showed discrepancies between teachers' written evaluations (quantitative and/or qualitative), which were often poor while the final rotation score was success. Some teachers seem to be unable to fail a resident.

Work done: After a lengthy validation process, changes were made. Evaluation forms were modified to reflect the teacher's role. His responsibility is now to observe residents and evaluate their level of performance for each item on the form. Teachers must provide written comments. The final rotation score (pass/fail) is not his responsibility anymore. Instead, an evaluation committee, given the teacher's report, the overall performance on previous rotations and a set of validated guidelines, make the final pass/fail decision.

Results: Overall satisfaction is high amongst program directors and teachers. Teachers write more comments. Meetings of the evaluation committee provide a better opportunity for an overall picture of the resident's progression, especially in non-cognitive domains. Overall rotation failure rate has risen from approximately 0% to 3%.

Conclusion: Modification of teachers' responsibilities in the evaluation process has led to evaluations that provide a better reflection of resident performance.

Take-home message: Teachers should not, as individuals, carry the burden of deciding whether residents pass or fail their rotations.
Work done: A web-based assessment testing prescribing ability was designed and administered to two cohorts of final year medical students and new graduates (FY1). Questions were constructed using a case-based, key features approach and included single best answer multiple choice, N-of-many multiple choice and calculations.

Results: Final year students performed best in the domain of mechanism of action of drugs and worst on prescription writing, whereas for FY1 it was the other way around. The performance of students in different clinical areas was also analysed. Student evaluation revealed the large majority felt the test was a fair representation of prescribing requirements after graduation and the examination helped them to understand the principles of good prescribing.

Conclusions: The results of the test, indicating areas of weakness of the student cohort, were used to plan a revision course for the students prior to their Final examinations and graduation.

Take-home messages: Students welcomed the opportunity to test their prescribing skills in realistic clinical situations and receive detailed feedback. The examination will be administered regularly in the final year of the course.

7V/SC3 Learning safe prescribing: The benefits of a work place tutor
B Lock, N Prasad, V Bradman (Princess Royal University Hospital Farnborough, Sevenoaks Road, Farnborough, Kent, BR6 8ND, United Kingdom)
The General Medical Council of the UK requires new graduates to demonstrate their competence to safely prescribe medicines before independent prescribing rights are granted at end of Foundation Year 1.

Work Done: A cohort of Foundation doctors undertook a prescribing assessment at the beginning of the programme, after a seminar programme (4 hours), and after four months of clinical experience. During the subsequent five month period of clinical experience half of the group were given workplace clinical support by a pharmacist.

Results: The average initial score of 16% increased by an average of 28% after a lecture program. There was a 50% average improvement in initial scores after experience of and 72% average improvement after experience supported by a clinical tutor who undertook personal discussion about their prescribing practice.

Conclusion: Lectures did not usefully improve quality prescribing practice. Clinical experience alone is insufficient to achieve safe prescribing practices by the end of first postgraduate year. The provision of a clinical tutor to discuss practice significantly improves prescribing capabilities.

Take-home message: Working with a personal practice tutor within a community of practice significantly improves quality of practice.

7V/SC4 CETL4HealthNE early clinical exposure and IPE for pharmacy and medical students: short clinical session
Carol Candlish*, Jan Wardle, Lynn Laidler, Anne Lamb, Dionne Richardson, Jane Metcalf (University of Sunderland, Fleming Building, Sunderland, SR1 3SD, United Kingdom)
Background: Undergraduate UK pharmacy education has been science based with variable clinical/interprofessional teaching. University of Sunderland has 600 undergraduates on the MPharm course but no clinical placements.

Work done: Within the Centre for Excellence in Teaching and Learning for Healthcare Professional Education (CETL4HealthNE) we developed an interprofessional, practice based cardiovascular session for first year medical/pharmacy students with clinical and interprofessional learning outcomes. 71 students attended the University Hospitals of North Tees and Hartlepool in January 2007. Pairs of pharmacy/medical students were facilitated by final year medical students seeing in-patients and taking a focused history including medication (pharmacy) and medical details (medical student). Students measured/recorded pulse/respiratory rate, blood pressure and temperature, followed by a facilitated discussion about cardiovascular medication.

Results: Feedback from the event will be presented but was very positive. Students reported learning about history taking, including structured medication histories and enjoyed facilitation by final year medical students. There were few practical difficulties and minimal teaching input was required by faculty staff.

Conclusions: A short interprofessional clinical session was an effective introduction to the integration of scientific and clinical knowledge.

7V/SC5 Development of a core pharmacology curriculum for postgraduate trainees in Emergency Medicine using clinical document review and a modified Delphi process
Darren Kilroy*, Jane Mooney, Peter Driscoll (College of Emergency Medicine, Churchill House, 35 Red Lion Square, London, WC1R 4SG, United Kingdom)
Background: Applied pharmacology forms an important component of both clinical practice and postgraduate assessment in Emergency Medicine. Specialty trainees undertake their learning within a context of intense service and educational pressure. It is important to rationalise required knowledge in order to facilitate effective learning. We describe the application of a Delphi process, based upon clinical document review, to develop a consensus curriculum in applied pharmacology.

Work done: Review of the pharmacology stock lists and sampled clinical casenotes of 5 large UK Emergency Departments was utilised to generate the informational platform for a national 3-round Delphi study involving 120 Emergency Medicine specialists. As a result of iterated feedback, a consensus curricular document was generated which has now been adopted by the UK College of Emergency Medicine.

Conclusions: The application of a clinically based Delphi process to curriculum planning allows learning requirements in applied pharmacology to be focussed upon aspects of knowledge most relevant to safe autonomous clinical practice.

Take-home messages: Rationalising the wide scope of a given discipline into relevant core knowledge is a difficult yet vital aspect of curriculum planning. Applying a structured methodology facilitates the process and has wide application across medical specialties.
7W/SC1 Using fiction and student role playing to illustrate empathy in patient-physician communication
Liva Jacoby, Ililana Semmler (Albany Medical College, 47 New Scotland Ave, Mail code 153, Albany, New York, 12208, United States)
Background: This presentation describes an exercise for first year students using "A Face of Stone" by William Carlos Williams to illustrate the formation of a therapeutic relationship between a patient and a doctor. The goal for students is to appreciate the therapeutic role of empathy in the patient-physician relationship. Class faculty includes a professor of English literature and the course director of the medical ethics and humanities program of which the class is a component.
Work done: After an introduction about key elements of empathic communication, four students volunteer to enact a play based on the story. After the play, the student "actors" describe their feelings in their roles, followed by reactions from class mates. The following is addressed: (1) characteristics of the physician's initial behavior and attitude; (2) the couple's responses; (3)when and how the physician's behavior changes; (4) factors producing the shift in his behavior; and (5) elements of empathic communication employed.
Conclusions: The class ends with a summary of students' observations and suggestions regarding key characteristics of empathic communication presented in the introduction.
Take-home message: The use of fiction and active student participation are valuable educational vehicles to demonstrate the significance of empathy in the patient-physician relationship.

7W/SC2 Communication skills – what do we teach and what do students learn?
Tor Anvik* (Institute of Community Medicine, University of Tromsø, Fredensborgveien 108 B, 8005, Norway)
Background: Teaching communication skills is more efficient when it takes place in a clinical setting. We wanted to study the effect on students' self assessed skills of a short course in communication skills.
Work done: Fourth year students (n=86) in medical school at the University of Tromsø took part in a mandatory intensive course in communication skills lasting four hours. Each student presented a short video sequence of less than five minutes from a medical interview with a real patient in general practice. The students assessed their own level in 18 skills for communicating with patients using the Oslo Inventory of Self-reported Communication Skills one month before and two months after having participated in the course. The students also evaluated the group sessions by help of a short questionnaire that was handed out by the end of the last group session.
Conclusions: We found that self reported communication skills could be divided into two main components, namely Relational and Medical skills. Students reported a significant raise in self reported levels of Relational skills after the course, but there was no increase in Medical skills. The vast majority of students did not find that making video recordings or showing them in the group were difficult.
Take-home messages: Our way of teaching communication skills is effective in augmenting students' self assessed skills as regards Relational skills. Students do not find it too disturbing or embarrassing to make such video recordings and showing them in a group.

7W/SC3 Evaluation of a communication skills course for undergraduate medical students
Y M Lee*, D S Ahn (Department of Medical Education, Korea University Medical College, 126-1, Anam-dong, Sungbuk-ku, Seoul, 136-705, Korea, Republic of (South Korea)
Background: The purposes of the present study are to describe a viable communication skill program for medical students in Korea and to evaluate its impact on their interview skills.
Work done: In 2006, 133 third-year medical students at Korea University Medical College participated in a communication skills course which used standardized patient (SP) interviews, class role-playing, and lectures. The course evaluation indicated that the students considered communication skills to be significantly more important as a clinical competencies after the completion of the course. The 2007 course, which now includes videotaped SP interviews (a process which includes self-analysis and peer feedback), is currently being administered to 134 third-year medical students. At the end of the course, a SP-based interview skill examination will be used to evaluate the students' communication skills. The student evaluation of the course will be conducted via questionnaire format.
Conclusion: While the 2006 course evaluation confirmed that students perceived communication skills as a core clinical skill, there were no demonstrable behavioral changes noted after the completion of the course.
Take-home message: The students' attitude towards communication skills as a core clinical skill can be enhanced through coursework. Its impact on behavioral changes must be further investigated.

7W/SC4 Reaching common ground: evaluation of a patient-centered communications curriculum
Sonia Crandall*, Gail Marion, Frank Celetino, David Jackson, Stephen Davis, Carol Hildebrandt (Wake Forest University Health Sciences, Department of Family and Community Medicine, Medical Center Blvd, Winston-Salem, North Carolina, 27157, United States)
Background: Kalamazoo Consensus Conference participants reviewed prominent communication models and agreed on essential skill elements. One participant developed a curriculum (Common Ground, CG) and validated an assessment tool to address these elements.
Work done: CG curriculum was incrementally implemented into our first-year medical student communications course: 2007 Class-skills were introduced to students and facilitators; 2008 Class-facilitators were trained; 2009 Class-course assessment tool was redesigned to address CG grading criteria. Students from four classes (2006-2009) were recorded during end of course SP assessments. Class of 2006 received no CG training. Trained lay raters scored interviews using the CG grading criteria, 1-5 Likert scale. Skills rated <3=unsatisfactory, 3=competent, >3=patient-centered. To ascertain if overall skill improved, Global scores were compared using analysis of variance. Scores were then categorized into unsatisfactory, competent, and patient-centered and compared using Chi-square.
Results: Students consented (81%, 346 recordings). CG mean Global scores improved each year: 2006=3.00, 2007=3.15, 2008=3.18, 2009=3.47. Global scores for 2006-2008 were lower than those for 2009 (F=8.17, p<0.000). The 2009 students were more patient-centered (X2=36.17, p<0.000); 64% had scores >3 (2006=23%, 2007=34%, 2008=31%).

Conclusions/Take-home message: Interviewing competence increased over time with greatest improvement seen in 2009 when the CG criteria were fully incorporated into the evaluation.

7W/SC5 Get presenting! Helping medical students manage their fear of speaking in public
Katherine Woolf, Jayne Kavanagh (University College London, ACME, 4th Floor Holborn Union Building, UCL Archway Campus, Highgate Hill, London, N19 5LW, United Kingdom)

Background: Presenting is an important professional skill for medical students and doctors; however it does cause anxiety, and for approximately 5% of the general population, this anxiety is a significant problem. We – a clinical professional development tutor and a research psychologist - describe the design, implementation and outcome of an 8-week student selected component (SSC) which aimed to help a group of 11 2nd year medical students manage their presentation anxiety.

Work done: We based the SSC on best educational practice and a common approach to managing social phobia: social skills training combined with cognitive behaviour therapy (which aims to alter destructive thoughts and behaviour). Key elements included presentation skills training, individual student-controlled presentation practice (altering behaviour), and the giving and receiving of constructive feedback (altering thoughts). We provided individual support and encouraged peer support throughout.

Results: A validated questionnaire showed a statistically significant decrease in post-course presentation anxiety (p=0.001).

Conclusions: This group of students with presentation anxiety showed a significant increase in confidence about presenting after attending this SSC.

Take-home message: Presentation skills training, presentation practice and constructive feedback delivered with structured support can decrease anxious medical students’ fear of presenting.

Short Communications
7X Learning to teach

7X/SC1 Gaming, blaming or shaming: participants’ reactions to educational gaming
Janet MacDonald, Lesley Pugsley (School of Postgraduate Medical & Dental Education, Cardiff University, Heath Park, Cardiff, CF14 4XN, United Kingdom)

Background: The MSc and Postgraduate Diploma in Medical Education programme at Cardiff utilises a wide repertoire of teaching techniques in order to enhance the learning experiences for its students. Educational gaming is one of the strategies to which participants on the courses are exposed. Over a number of years various groups of students have demonstrated a variety of responses in relation to their engagement with this teaching medium; perhaps more so than with other teaching approaches. These responses may either inhibit or increase engagement in the learning activity and subsequently influence the learning taking place. As educational gaming involves active engagement of learners, often in unusual or difficult tasks, it is important that the potential emotional responses are recognised in order to provide a safe and useful learning environment.

Work done: A recent survey of participants’ reactions has revealed how the approach generates emotionally charged reactions and the work has identified a range of potential responses, that can help inform facilitators working with such learning sets. These responses have been categorised along with the perceived learning from these activities. Suggestions for the use and organisation of these activities have been offered. This should help ensure that maximum educational benefit can be gained from the use of educational gaming.

7X/SC2 Context based curriculum design creating an online Doctorate of Education Program (D.H.Ed.) in Health Education
Jon Persavich (A.T. Still University of Health Sciences, School of Health Management, 210A South Osteopathy, Kirksville, Missouri, 63501, United States)

Background: This presentation provides information to individuals interested in creating, implementing and evaluating a comprehensive multiple entry/exit point online doctorate level program in Health Education.

Work done: In this highly integrated D.H.Ed. program students complete an applied dissertation as they move through their coursework, thereby eliminating the All But Dissertation Status (ABD). Course work consists of four program groups each containing a terminal project — Proposal, Curriculum Model, Evaluation Model, and Standard Operating Procedures. Once completed, these four terminal projects constitute the student’s e-portfolio and applied dissertation.

Conclusions: This design allows for in-depth peer review, and multiple faculty feedback opportunities at the chapter level, before review and approval by the student’s formal dissertation committee. These program groupings are designed in such a way as to provide students with maximum flexibility in identifying problems within their work environments and designing solutions to resolve them.

Take-home messages: With five different entry points, students in various stages of academic preparation - from bachelors to terminal degrees - may enter the program. In keeping with the philosophy of life-long learning, students may participate in one of four pre-defined concentrations or build their own from existing courses.
**7X/SC3 Effect of a 5-day Train-the-Trainer program in medical didactics – final results**

Marco Roos*, Martina Kadmon, Veronika Strittmatter, Jobst-Hendrik Schultz, Jelena Zwingmann, Thorsten Steiner (Medical School of University of Heidelberg, Germany, Im Neuenheimer Feld 400, Stabstelle Medienzentrum, 69120 Heidelberg, Germany)

Background: HEICUMED, the new problem based clinical curriculum, was introduced at Heidelberg University Clinic in 2001 and accompanied by a faculty development program, which included a 5-day Train-the-Trainer program. The purpose of the study was to evaluate the effectiveness of this program.

Work done: We performed an open, prospective, interventional study based on the 4-level model by Kirkpatrick on 50 trainees: (1) Quantitative measurement of motivation and coping strategies of our trainees by using validated questionnaires at the beginning of the training. (2) Quantitative measurement of knowledge change using a Multiple Choice-Test in a “pre-post-analysis” test at the beginning, at the end and 4 months after training. (3) Change of performance by using peer review. (4) Post training evaluation by self-assessment and student evaluation.

Results: First intermediate results indicate a significant increase of knowledge (p<0.003) and a long-term change in teaching performance.

Conclusion: The 5-day train-the-trainer program results in a significant increase in predefined key competencies of the participants in quality and quantity. We will discuss the final results of the multi-step analysis of the faculty development program in the light of the implementation of an entirely new medical curriculum at Germany’s oldest Medical Faculty.

**7X/SC4 Any effect of educational intervention?**

Merete Ipsen*, Carsten Ryttner (University of Aarhus, Centre for Postgraduate Medical Education (CEPOME), Victor Albeek Building, Building 267, Universitetsparken - Vennelyst Boulevard, 8000 Aarhus, Denmark)

Background: A favourable educational climate is known to foster skilled physicians. To promote this climate methods to estimate the educational environment have been developed.

Work done: A pre-, post- and post-delayed survey using a questionnaire ( Hering Nielsen and Charles 2005, Project UNI-VID: The Good Educating Department in a University Hospital. Aarhus University Hospital.) performed concomitant to an educational intervention. A department of oncology devoted one day to improve educational supervision skills and to optimize the department’s educational effort (modified three-hour-meeting technique (Nohr, Ipsen, Kjaer-Rasmussen, Three-hour meetings’ - a concept that focuses on postgraduate education from the perspective of junior doctors in training. AMEE Conference 2006).

Conclusions: There was an improved perception of “willingness to test ideas”, “open and lively dialogue concerning department quality” and “resources for education in the department” right after the intervention. The improved perception of “dialogue” and “resources” was sustained after a month, whereas the perception of “willingness to test ideas” dropped back to pre-intervention level.

Take-home messages: (1) A single day of training educational skills and awareness may improve the educational climate. (2) It is possible to measure the effect of educational training.

**7X/SC5 A step-wise approach to faculty development**

David Cook*, Bruce Fisher, Ramona Kearney (University of Alberta, Division of Studies in Medical Education, 2-76 ZLC, Edmonton, Alberta, T6G 2X8, Canada)

Background: The Faculty of Medicine and Dentistry at the University of Alberta recently made it mandatory that all new staff members who have not had such training, attend faculty development workshops to help them to develop their instructional skills. Previously, a 2-day workshop that involved a microteaching exercise has been offered on a voluntary basis. The greatly increased demand for faculty development that this new ruling created, together with a need to increase the number of problem-based learning tutors, meant that we needed to reconsider the approach that had been used previously, and perhaps tailor it more to the specific needs of the staff.

Work done: Currently, we offer an introductory half-day workshop that covers such things as student-centred learning, educational objectives and different approaches to student learning. This is a pre-requisite for four further workshops on lecturing, facilitating problem-based learning, bedside teaching, and evaluation. A variety of more specialized third-level workshops are also offered.

Conclusions: Overall, the response of the Faculty to these developments has been positive, and the process enables us to undertake appropriate faculty development, without excessive demands on the time of those who are giving the workshops and those who are taking them.

**7X/SC6 Evaluation of new implementation strategies, program effectiveness, and dissemination of new pedagogical knowledge: Centre for Faculty Development’s Stepping Stones Teaching Certificate Program**

Densye Richardson*, Ivan Silver, Amy Dionne (University of Toronto, 500 University Ave, Room 1028, Toronto, M5G 2A2, Canada)

Background: The Stepping Stones Certificate program, at the University of Toronto Centre for Faculty Development is unique. This initiative was designed to stimulate inter-professionalism partially through the multi-disciplinary nature of session leaders and faculty participants. Evaluation of the program, including its instructional development (workshops) and theory review (journal club) components, will inform further faculty development.

Work done: Both quantitative and qualitative methods were used. Participants completed 2 questionnaires to identify skill-set knowledge gaps in teaching effectiveness. Pre- and post-program quantitative gaps were generated. Focus groups were used for qualitative exploration. Areas explored pre-program included: a) motives for enrollment, b) program expectations and c) prior teaching preparation. Post-program discussion explored: the impact of the program on a) participant’s perceived gaps, b) teaching behaviour change, and c) its influence on their career in education.

Conclusions: We believed the program’s interprofessional environment would foster development of a learning community, have impact on faculty’s knowledge, skills and attitudes related to teaching, and potentially elicit behavioural change in teaching practices. Results from a 2004-2005 cohort of participants have identified a variety of such benefits for faculty and their teaching practice. Results from a second separate cohort, 2005-2006 participants, validated the initial findings.
7Y/SC1 Is the Journal Club an effective intervention in supporting Evidence-Based Practice in health care professionals? A BEME review

*K Kearly, C Heneghan, K Kearly-Shiers, E Meats, R Perera, J Harris (Department of Primary Health Care, University Of Oxford, Old Road Campus, Headington, Oxford, OX3 7JE, United Kingdom; Bristol Medical School, University of Bristol, UK; Bergen University College, Bergen, Norway)

Objective of the BEME review: To determine the effectiveness of the journal club as an educational intervention in supporting evidence-based practice in terms of learner reaction, changes in knowledge, skills or attitudes and patient outcomes.

Background: Clinician and patient involvement is central to implementing evidence-based medicine. The traditional model of how knowledge affects clinicians' behavior assumes that information synthesized and disseminated by respected national authorities reliably leads to changes in behavior. This model, upon which the success of the guidelines movement initially was anticipated, is now recognized to be too simplistic and rarely accurate. Increasingly more interactive techniques are being utilized. One such technique is the use of a journal club; established as an educational activity in many postgraduate training programmes. Although there have been several systematic reviews investigating the effectiveness of teaching evidence-based health care, which have included journal clubs as a possible intervention, these have been restricted to studies using quantitative methodologies – randomised and non-randomised controlled trials and before and after comparison studies. There is a need to widen the inclusion criteria to include qualitative methodologies which may contribute valuable additional understanding for the journal club as an intervention to support evidence-based practice. This is a BEME 'work in progress'.

7Y/SC2 How does the use of portfolios affect student learning in undergraduate medical education: a BEME systematic review

Sharon Buckley*, Tamasine Ashcroft, Jamie Coleman, James Davis, Ian Davison, Khalid Khan, Sadia Malick, David Morley, David Pollard, Celia Popovic, Jayne Sayers, Radhika Susarla, Javier Zamora (University of Birmingham Medical School, Vincent Drive, Edgbaston, Birmingham, B15 2TT, United Kingdom)

Background: Portfolios are increasingly widely used in undergraduate medical education, often with the aim of developing students' ability to learn independently, use reflection to guide their learning and practice, and to develop 'professionalism'. But what is the evidence that the use of portfolios affects student learning, either in these ways or others? In collaboration with BEME, we are undertaking a systematic review of the literature to establish the evidence for the effects of the use of portfolios on student learning in undergraduate medical education.

Work done: Our review is exploratory and wide ranging, encompassing the literature relating to nursing and other allied health professions as well as that relating directly to medicine; and using a definition of portfolios that includes both those that are collections of evidence of student work or achievement and those that are primarily reflective journals. Our definition of 'undergraduate' encompasses all students undergoing initial, rather than advanced, training in one of the healthcare professions. We are interested in all outcomes relating to effects on student learning and have not restricted our review to particular types of study. This presentation will outline our progress to date with reviewing the significant literature on this subject, including our methodology and preliminary results.

7Y/SC3 Assessing Self-Assessment: a BEME systematic review

Alex Haig*, Helen Allbutt, Gellisse Bagnall, Iain Colthart, Alison Evans, Jan Illing, Brian McKinstry (NHS Education for Scotland, The Lister, 11 Hill Square, Edinburgh, EH8 9DR, United Kingdom)

Background: We reviewed the literature on self-assessment published since Gordon's earlier (1991) review.

Work done: What is the evidence that explicit methods used in self-assessment (1) identify learning needs? (2) promote change in learner activity? (3) promote change in clinical practice? Work done: Self-assessment was defined as "a personal evaluation of one's professional attributes and abilities against perceived norms". We searched literature from 1.1.90 to 30.9.2006 and retrieved 5798 papers. 194 abstracts were identified as potentially relevant with 104 papers finally included for systematic coding in pairs. 67 of these were classified as high-quality.

Results: None of these papers directly answered our research questions. While most focused on self-assessment accuracy, many were under-powered or lacked a validated gold standard for assessment. There is some evidence that competent individuals self-assess reasonably accurately, but the least competent are least able to self-assess accurately. Individuals more accurately assess their peers than themselves and practical skills are more accurately assessed than knowledge. Feedback and explicit criteria appear to enhance the accuracy of self-assessment.

Conclusion: Future studies should explore how to improve self-assessment in the less able group and examine the impact of self-assessment on learning and practice.

7Y/SC4 Final year competency assessment in veterinary medical education: a Best Evidence Veterinary Medical Education (BEVME) review

S Baillie, S Rhind*, F Brown, M Dozier, M Hammick (University of Edinburgh, Veterinary Teaching Organisation, Easter Bush Veterinary Centre, Roslin, Midlothian, EH25 9RG, United Kingdom)

Background: Within veterinary medicine, the specific discipline of education is in its infancy compared to the situation in human medical training. Nevertheless, both are faced with similar challenges and none more so than in the area of final year assessment. There is much anecdote and opinion regarding the 'optimal' final year assessment. Current practice is unsupported by evidence hence the need to standardise such high stakes assessment is paramount. The current project involves a systematic review of the evidence around clinical and professional assessment in veterinary education.
TUESDAY 28 AUGUST 2007

Workshop

Students as educational partners

Catherine Gray*, Matthew Bode, Andrew Walker, Robin van Eck, Hanneke van der Wijngaart, Andrea Miltenburg Solnes, Martina Grinups, Sofi Asmundsson (University of Sheffield Medical School, Beech Hill Road, Sheffield, S10 2RX, United Kingdom)

Background: Students contributing to the education of their peers, and in the process, their own learning experience, is becoming an increasingly popular tool in medical education. Various peer-led initiatives are already in place in medical schools worldwide, as an element of the curriculum, a student-selected course component or an extra-curricular option.

Structure and content: Students from three medical schools across Europe collaborate to present examples from their respective universities of how students can be utilised as an effective learning resource. The workshop will consist of interactive presentations of projects currently taking place at the University of Sheffield Medical School, UK, Karolinska Institutet, Sweden and Vrije Universiteit Amsterdam, Netherlands.

Intended outcomes: By the end of the workshop, participants should have gained a greater understanding of how students can positively contribute to the learning of their peers. It is hoped that participants may find inspiration for similar projects through their involvement in this workshop.

Intended audience: Students, medical educators and other interested parties, who would like to be involved in an interactive presentation of projects involving students as a medical education resource.

Level of workshop: ‘Beginner’ – open to all.

Linking outcomes of care to the core competencies: a Matrix solution

Doris Quinn, John Bingham (Vanderbilt University Medical Center, 1121 22nd Ave South, B131 VUH, Nashville, TN, 37232-7220, United States)

Background: Clinicians (both teachers and learners) need a multifaceted interpretation of patient care that shows when care is not safe, timely effective, efficient, equitable or patient-centered (IOM Aims). The Healthcare Matrix, an innovative education tool, helps clinicians assess a complex episode of care in a way that segments what is learned and what needs to be improved. The ACGME Competencies and the IOM aims frame learning and improvement derived from real-time analysis of care.

Intended outcomes: Participants will learn how this tool provides: 1) a method that fosters a system view of patient care; 2) a mechanism to capture all the issues of care in a blame-free format; 3) a function that links lessons learned and improvements needed to an action plan; 4) a means of aggregating data to identify opportunities for improvement within a specialty, department, or the entire organization; 5) a tool to attach education modules, data, and articles to a diagnosis and analysis of patient care.

Structure: Some didactic followed by hands-on application of the Matrix using a case example.

Intended audience: All faculty involved in education and patient care.

Level of workshop: Beginner to advanced.
Workshop 7BB What can we do to implement the Bologna Process in medical curriculum apart from the 2 cycles?

Jadwiga Mirecka (Department of Medical Education, Jagiellonian University Medical College, st. Kopernika 19 E/1 Krakow, 31-501, Poland)

Background: The process of implementation of the Bologna Declaration is most often identified with re-structuring of the curriculum into the two cycles, whereas there are many other actions, which should be also considered.

Content: The workshop will start by reviewing the goal of the Bologna Declaration and its objectives (action lines). The Bologna related activities will be grouped into current (immediate) and prospective (far going) ones. The former include issuing of the Diploma Supplement, using of ECTS both as a transfer and accumulation system, facilitating students’ mobility, and involving students in relevant decision taking bodies. Problems encountered in real life with implementation of these objectives as well as possible solutions will be discussed in detail. The prospective activities such as quality assurance and curriculum structuring according to the recommendations included in the European Qualification Framework will be briefly outlined.

Intended audience: The workshop is intended for curriculum organizers, medical teachers and students.

Level of workshop: No previous knowledge is required, although some personal experience in this area would make the discussion more vivid. The workshop would be suitable both for beginners as well as individuals with intermediate knowledge of the Bologna related problems.

Workshop 7CC Defining essential clerkships in competence-based, undergraduate medical curricula

Jos Snoek, Janke Cohen-Schotanus (University Medical Center Groningen, UMCG, Sector F, CIOMO, Postbus 196, Groningen, 9700 AD, Netherlands)

Background: In traditional medical curricula the educational objectives are discipline oriented and as a consequence the clerkships of most disciplines are obligatory. This results in a clinical program with several clerkships of different duration (1-10 weeks). In contrast, clerkships in competence-based medical curricula have to offer a learning environment in which students will be able to develop general competencies. To develop general competences and reach the required level students need enough time and, therefore, should stay several weeks at the same department. As a consequence of this vision students will not be able to attend all disciplines. However, most competences can be developed in any medical context.

Intended outcome: This workshop provides participants with an opportunity to explore the difference between discipline oriented learning objectives and competences as learning objectives. This workshop will (1) challenge some of the traditional ways we think about clerkships, and (2) the participants will become familiar with the role of clerkships in a competence based curriculum.

Format and content: Working through guided activities, discussion and defining essential clerkships.

Intended audience: All faculty involved in undergraduate medical education and curriculum development.

Level: Beginners/intermediate.

Workshop 7DD Constructing competency based postgraduate training: how to make it work

C R M G (Lia) Fluit, H Mulder (Radboud University Hospital, Radboud University Hospital, 306 OWI/KOMO Postbus 9101, 6500 HB Nijmegen, Netherlands)

Background: In the Netherlands specialist training is being modernised according to the CanMEDS 2000 model. A national expert group of medical specialists and educationalists helps the curriculum committees of 27 specialities to construct their new programs. By the end of this year all specialities will have formulated a competency based programme and will have started the implementation process. The know-how and products of this expert group are worth to be shared with others.

Intended outcomes: After attending this workshop, participants: (1) are aware of the conceptual, strategic and practical challenges involved in constructing competency based postgraduate programs; (2) have obtained information about successful strategies, concepts and tools to facilitate this process; (3) have practiced some of the developed tools.

Structure: This workshop starts with an inventory of the challenges generally involved in modernising specialist training. Participants are informed about successful interventions and actions of the Dutch expert group. Specific tools proved particularly useful in constructing competency-based programs while at the same time contributing to the feasibility of the programs in clinical practice. Participants are invited to work with these tools and exchange their experiences.

Intended audience: Medical specialists, teachers, program directors, residents and others involved in the modernising of postgraduate curricula.

Level of workshop: Intermediate.
The professionalism of teaching

L R Barker (Johns Hopkins Bayview Medical Center, 5200 Eastern Avenue, MFL Bldg, Center Tower, Suite 3000, Baltimore, MD 21224, United States)

Background: The Professionalism of Teaching (POT) - how clinical tutors practice professionalism in their relationships with trainees - can be seen as a distinct component of Professionalism. Much of the POT is learned and practiced via tutor-trainee communication, communication that occurs in the “hidden” or “informal” curriculum. This is the curriculum where trainees directly experience clinical tutors’ communication. Both intrapersonal reflection and transparency on the part of clinical tutors are important to the POT.

Intended outcomes: Participants will increase their understanding of: (1) A model of the Professionalism of Teaching; (2) How the POT is learned/practiced through tutor-trainee communication in the informal/hidden curriculum; (3) Their own strengths and potentials as learners/practitioners of the POT.

Structure: (1) Overview: (a) Core competencies for the Professionalism of Teaching; (b) Illustrative vignettes; (2) World Café: (a) Orientation: In pairs: Share reflections on personal experiences with the POT; In Groups of 4: Identify core themes from POT reflections; All groups: Share POT themes from personal reflections; (3) Consensus-building: Whole Group: Define ways to enhance the learning/practicing POT; (4) Closure: Each participant: Write down plan for enhancing one’s POT.

Intended audience: Clinical tutors.
Level: Intermediate.
Adapting e-learning to learner prior knowledge improves learning efficiency: a randomized controlled trial

David A Cook*, Thomas J Beckman, Kris G Thomas, Warren G Thompson (Mayo Clinic College of Medicine, 200 First St SW, Rochester, Minnesota, 55905, United States)

Background: Adapting e-learning to learners’ prior knowledge may improve learning efficiency, but evidence is lacking. We hypothesized higher learning efficiency among residents who used an e-learning intervention that adapted to prior knowledge, compared to non-adaptive.

Work done: Four e-learning modules on ambulatory medicine were developed in both adaptive format (learners who correctly answered case-based questions could skip corresponding content) and standard format (identical content, but non-adaptive). 124 internal medicine residents used each format for two modules (randomized assignment).

Results: Results demonstrated similar knowledge scores between the adaptive (76.2 ± 0.9) and standard (77.2 ± 0.9) formats (p=.34). Learners spent less time on adaptive modules (39.9 ± 2.5 minutes) than standard (46.4 ± 2.5, p=.002), resulting in higher learning efficiency for adaptive modules (3.17 ± 0.16 versus 2.60 ± 0.17 points per minute, p=.0033). 75% of residents preferred the adaptive format. Both formats were similarly motivating (no difference in attention, relevance, confidence, satisfaction, or composite motivation scores, p=.30).

Accreditation of Medical Schools’ Programmes in Europe

Symposium organized by The World Federation for Medical Education (WFME) and The Association of Medical Schools in Europe (AMSE) on behalf of the Thematic Network MEDINE.

Chairperson: Jørgen Nystrup, WFME

The aim is to update the participants with recent developments in accreditation of medical schools in Europe. WFME has in the past year joined efforts with AMSE in the thematic network MEDINE, an EU project. This project has produced European specifications to the WFME global standards in medical education. This tool is now a possible backbone for national accreditation of medical schools in Europe. Maria Rosa Fenoll-Brunet, Spain, and Hans Karle, WFME, will present the newly developed European specifications for the WFME global standards in medical education. Jadwiga Menabde, Georgia, will discuss the need for accreditation of basic medical education in Europe.

Finally, the symposium will deal with actual experiences from accreditation based on Swiss and Irish examples, presented by Rolf Heusser, Switzerland, and Anne Keane, Ireland. Before a general discussion of this hot issue, considerations necessary for planning an accreditation system will be delivered by Sabri Kemali, Turkey.

Large Group Session

Accreditation of Medical Schools’ Programmes in Europe

Chairperson: Linn Getz (Department of Public Health and General Practice, Norwegian University of Science and Technology, Trondheim)

Panel: Linn Getz (Norway/Iceland), Iona Heath (UK) and Magne Nylenna (Norway)

Healthcare is among the most expansive activities worldwide. Yet, beyond a certain point, more medicine does not necessarily mean better medicine. It is therefore essential to foster the development of a prudent and self-critical mindset among medical students and junior doctors. Healthcare may otherwise soon become so super-specialized and dominated by technology that its therapeutic potency and cost-effectiveness may start to decline. We also have to learn from the fact that doctors have recently acted as assertive proponents of various medical regimens that have ultimately been proven to do more harm than good, e.g. Hormone Replacement Therapy (HRT) and Cox-2 inhibitors (VIOXX). The medical profession and teaching institutions have a collective responsibility to train students and future doctors to anticipate and systematically prevent ‘down-sides’ and harm from medical expansion and innovation. This symposium will address the many aspects of that fundamental educational challenge.

Symposium

Sustainable and responsible medicine – challenges in medical education

Chairperson: Linn Getz (Department of Public Health and General Practice, Norwegian University of Science and Technology, Trondheim)

Panel: Linn Getz (Norway/Iceland), Iona Heath (UK) and Magne Nylenna (Norway)

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Symposium

Joined up thinking – a continuum of teaching and training for rural settings?

Panel: Gillian Needham (NES North of Scotland Deanery, United Kingdom), John Dent (University of Dundee, United Kingdom), Geoffrey Riley (University of Western Australia, Rural Clinical School)

Does the university medical school provide medical graduates who meet the needs of rural communities? Are postgraduate training programmes growing the generalists and specialists needed for rural practice? Can a continuum of undergraduate and postgraduate clinical teaching and training be effectively delivered for a rural setting and in a rural setting? The symposium will discuss these questions in the light of presentations from an international panel of experts in these fields with the aim of encouraging the development of education and training opportunities in rural settings and for rural settings. A variety of structured undergraduate and postgraduate programmes will be presented, with some emerging policy. The benefits of these approaches and the resources required to run them will be discussed, together with their implications for staff development and student support. There will be ample opportunity for delegates to contribute their own experience and to question the panel.

Symposium

e-Learning implementation 2

8D/SC1 Adapting e-learning to learner prior knowledge improves learning efficiency: a randomized controlled trial

David A Cook*, Thomas J Beckman, Kris G Thomas, Warren G Thompson (Mayo Clinic College of Medicine, 200 First St SW, Rochester, Minnesota, 55905, United States)

Background: Adapting e-learning to learners’ prior knowledge may improve learning efficiency, but evidence is lacking. We hypothesized higher learning efficiency among residents who used an e-learning intervention that adapted to prior knowledge, compared to non-adaptive.

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Conclusions: Adapting e-learning to learners' prior knowledge saved time without adversely affecting knowledge scores or motivation.

Take-home messages: Adapting e-learning to learners' prior knowledge can enhance learning efficiency. As time for education in clinical training is increasingly limited, such efficiencies may be vital.

8D/SC2 Comparison between different learning methodologies used in eLearning courses for veterinary officers

B Alessandrini*, L Valerii, M Graziani, E Tieri, O Pediconi, S Del Papa (Istituto Zootecnico Sperimentale dell'Abbruzzo e del Molise “Giuseppe Caporale”, Campus Boario – Teramo, 64100, Italy)

Background: Learning effectiveness and participant satisfaction are influenced by teaching methods and learning models adopted.

Work done: The purpose of this study is to compare the effectiveness in terms of learning goal achievement, satisfaction and usability of two eLearning courses destined for Italian veterinary officers, planned and implemented using different learning methods.

The first one – on veterinary epidemic emergencies – was developed according to a non supported self-learning model; the second one – on electronic animal identification – was based on collaborative learning and community based activities. The two experiences also differed in length, quality and quantity of teaching materials, evaluation tests, technology.

Both learning results and satisfaction questionnaires were compared to evaluate which of the two eLearning models was more effective; course models, methods, teaching supports, technological opportunities and limits were assessed to verify which are the best solutions for project developer and managers and participants.

Results: The results showed that – even if participant satisfaction is similar and very high in both the experiences - the blended learning model significantly decreased the abandon percentage and increased the learning goal achievement.

Conclusions: This comparison shows that the blended model allows learners to use different learning styles and therefore improve their skills practicing through different approaches, while non supported self-learning reduces the opportunity of involving all personal learning styles and consequently produces less encouraging results.

8D/SC3 Students’ evaluation of different forms of e-learning activities

M Bajecic*, M Bocic, J Kostic, M Boksan, N Zlatic, J Tripkovic (Department for Histology and Embryology “A. Dj. Kostic,” School of Medicine, Belgrade University, Serbia, Visegradska 26, Belgrade, 11000, Serbia)

Background: This study presents students' evaluation of different forms of e-learning activities in a blended course on histology, based on Moodle LMS.

Work done: During the winter semester of 2006/07, 61 first year medical students at the Belgrade School of Medicine took part in blended course on histology. They had possibilities of using different forms of synchronous and asynchronous activities (Lessons, Quizzes, Forums, Glossaries and Chat). At the end of the first semester, the students were asked to evaluate activities and the course using a semi-structured questionnaire.

Results: The evaluation showed that students were most satisfied with Lessons. On a 1 to 5 scale (1 - non-satisfactory; 5 - excellent) the students rated Lessons as very useful for their histology learning with the average rate 4.83. Next highly rated activities were Quizzes (4.75) and Forums (4.12). The lowest rated activity was Chat (3.34). The overall rate for the course was 4.83.

Conclusions: Students were very satisfied with asynchronous activities because they are more time-independent. They were also satisfied with a high level of the interactivity with peers and moderators.

Take-home message: First year medical students preferred asynchronous rather than synchronous e-learning activities.

8D/SC4 An interactive e-learning tool for haemodialysis staff, students, patients and caregivers

Guglielmo M Trovato*, Elio Iannetti (Università di Catania, Facoltà di Medicina e Chirurgia, Dipartimento di Medicina Interna - Ambulatorio di Emodialisi Delta, Via Sant’Orsola 30 Catania, 95131, Italy)

Background: An interactive software was developed using a database derived by monitoring clinical/laboratory data of 40 long-term haemodialysis patients (one year recording throughout each procedure) and clinical records, including quality-of-life information. This component was integrated with a multilevel e-learning course, targeted to a) health professionals (nurses, technicians and physicians), b) medical students and c) patients and caregivers.

Work done: This approach was aimed and arranged a) to assess and improve knowledge and appraisal of the daily work of the haemodialysis staff; b) to teach interactively to medical students the chronic renal failure issues, haemodialysis procedures (including specific procedural skills) and problem solving of clinical situations using real records on files; c) to teach patients’ caregivers, and whenever possible, patients, on the skills and behaviours useful for a safer management of the disease and of the procedure. The software was supplied to staff, students and patients as three different e-learning cd-rom tools.

Conclusions: This teaching/educational model, deriving from a real patients’ database delivering an asynchronous environment of a virtual haemodialysis clinic, resulted in satisfactory assessment scores, contributing to fill the gap between theoretical/clinical experience by more confident staff-students-patients-caregivers encounters.

Take-home messages: This integrated e-learning project has a positive professional-motivational impact on staff/students; improved compliance of patients/caregivers is concurrently observed.
Short Communications

8E/SC1 Final-year medical students’ evaluation of their practical training using two separate methods: analysis in view of curriculum review
Claire de Burbure*, Dominique Vanpee (Université catholique de Louvain UCL, Medical Faculty, Medical Electives Coordination, 1200 Brussels, Belgium)

Background: With Bologna, the seven-year Belgian medical curriculum is currently under review. We therefore asked final-year students at UCL, Belgium, to evaluate their almost completed practical training.

Work done: Invited back for one mid-week afternoon, students filled in modified SWOT (strengths, weaknesses, opportunities, threats) and target-shaped four-point Likert scale questionnaires concerning both practical and educational issues. Strengths, weaknesses and suggestions were discussed in groups then presented. Turnout was high, participation enthusiastic: 116/161 students came (72.05%), 116 questionnaire sets (100%) were retrieved and analyzed.

Results: The Likert scale enabled clear identification of problems: defining clear objectives (44.9% satisfied), student evaluation (44%), feedback on clinical skills (42.3%), number of working hours (41.4%), quality of life (20.7%). Strengths, weaknesses and suggestions were classified into curricular organisation, assessment/monitoring, didactic quality, clinical environment (Sherbrooke study: Langevin and Hivon, March 2007). Students focused more on weaknesses than strengths, confirming Likert scale findings, but had many constructive suggestions: introduction of compulsory accident and emergency clerkships, longer internal medicine training, multidisciplinary programmes.

Conclusions: The swot and Likert questionnaires were complementary. This study yielded several constructive suggestions, currently reviewed for integration into a revised medical training curriculum.

8E/SC2 Survey of the opinion of students and teachers on the undergraduate curriculum reform of the Faculty of Medicine, Cluj-Napoca, Romania
V Muntean, N Miu, V Grui (University of Medicine and Pharmacy “Iuliu Hatieganu” Cluj-Napoca, Romania, 13 Emil Isac Road, Cluj-Napoca, 400023, Romania)

Background: We assessed the opinion of students and faculty on the curriculum reform initiated in our university two years ago.

Work done: 162 teachers (T) and 122 medical students (S) (response rate 81% and 61%, respectively) answered to an anonymous, structured, opinion questionnaire referring to the main factors associated with successful curricular change. The correlation coefficient was calculated for opinions on: importance and direction of change (0.75 T/S), interest in changes and educational innovations (0.45 T/S), cooperative climate (0.55 T/S), participation of organization members (0.54 T/S), students’ implication in the curricular change process (0.22 T/S), communication with leaders and among participants (0.27 T/S), leadership (0.49 T/S), resource allocation (0.78 T/S) and reward of the participation in the innovation (0.71 T/S).

Conclusions: Most of the responders agreed that the general direction of the curriculum change is good and that the funding of the process and rewarding in the participation insufficient. There is a low correlation between teachers’ and students’ opinion on communication and students’ implication in the curricular change process.

Take-home messages: Students’ participation is a main factor for successful curricular change.

8E/SC3 Educational methods and technologies in veterinary education
Vicki H M Dale*, Martin Sullivan, Erica McAteer (University of Glasgow, Faculty of Veterinary Medicine, Glasgow, G61 1QH, United Kingdom)

Background: This PhD study – a 1949-2007 Glasgow case study – was undertaken to provide an illustrative account of learning and teaching practices over time, to inform discussions on curriculum reshaping.

Work done: A questionnaire was distributed to 2360 alumni, 513 students and 50 teachers, to obtain quantitative data on the availability and perceived usefulness of different educational methods and technologies, analysed using SPSS. Qualitative data was sought principally through ten student focus groups and interviews with over thirty current and former staff, analysed using NVivo.

Results: Questionnaire responses (11.5% alumni, 23.8% students and 72% of teachers) revealed that lectures, tutorials, notes, practicals and clinical training were used consistently over time and rated highly by stakeholders, confirming the importance of didactic teaching methods coupled with practical hands-on experience. Educational technologies developed primarily to support the lecture – chalk; lantern slides; 35mm slides; acetates; and Powerpoint – were also highly rated.

Conclusions: The study has underlined the enduring value of the lecture in veterinary education as an efficient and engaging method, with audiovisual technologies primarily used to support didactic teaching within a traditional (‘Flexnerian’) curriculum. The challenge remains to harness e-learning technologies in pedagogically innovative ways to facilitate subject integration and deep learning.

8E/SC4 Evaluation courses at the Medical School of the Pontificia Universidad Católica de Chile
Ana C Wright*, Luz M Collins, Beltrán Mena, Rodrigo Moreno, Ignacio Sánchez (Escuela de Medicina - Pontificia Universidad Católica de Chile, Alameda 340, Schiavetti 954 Depto 21, 8331010, Chile)

Background: The evaluation of teaching has been developed since 1984 with the help of different instruments. Since 1998 a simplified instrument is in use.

Work done: 613 courses were classified according with their common characteristics; the statistical analysis of the information was done applying ANOVA’s test.
Having compared the different types of courses in 7 areas, it was demonstrated that the development of Feedback reaches in the Clinical practical courses is significantly better than in other. In the evolution of the courses in the time, we find significant differences in the Clinical theoretical, Clinical practical and Internee courses. The areas that they improve significantly in the time are: in the Clinical theoretical courses, methods, feedback, organization; in the Clinical practical courses, methods, teachers, feedback. In all of them, in Basic courses and Internee improve significantly infrastructure.

Conclusions and take-home messages: With these results we checks that the students estimate that there is significant improvement in the majority of the evaluated areas, specially in the Clinical Practical and Internee courses, which coincides with the appraisal of the authorities and with the efforts realized in training of the teachers and investments in infrastructure.

8E/SC5 Connecting the dots: understanding medical student experiences
Casey B White* and Eric L Dey (University of Michigan Medical School, 3960 Taubman Medical Library, Ann Arbor, MI, 48109-0726, United States)

Background: Medical schools create educational environments that are intended to shape the experiences and outcomes of their students. While a variety of assessment mechanisms exist for the purpose of ensuring that basic knowledge and skill levels have been acquired during the medical school experience, most medical schools have not organized efforts designed to capture nuanced information on student experiences in a manner that can connect to institutional outcomes. In this paper we document a research program involving a decade of medical school graduates at one institution directed at connecting student experiences with the institutional goals of promoting leadership and service to the underserved.

Work done: A comprehensive, in-depth study was mounted to determine whether medical school graduates from 1993-2004 were meeting specific longer-term institution goals (i.e., serving in leadership positions and advocating for underserved populations), and to identify educational experiences related to these outcomes. Our interest is based on our goal to educate physicians who are prepared to provide medical care to an increasingly diverse society, and physicians who will work to eradicate disparities in health care.

Conclusions: Study results identify formal and informal experiences related to the promotion of these outcomes. Suggestions for schools interested in undertaking similar efforts are provided.

8E/SC6 Obstetric skills training
Jette Led Sorensen* (Obstetric department, Juliane Marie Centre, University Hospital of Rigshospitalet, Copenhagen, Blegdamsvej 9, Copenhagen, DK-2100, Denmark)

Work done: The aim was to design, implement and evaluate an obstetric skills training programme with emphasis on procedural skills in emergency obstetric situations. Research methods were action research and descriptive research. Study 1: The designing of an obstetric skills training programme: Data was obtained through a literature search, questionnaires and data from the Danish National Patient Registry. It was decided that obligatory training in management of postpartum bleeding, shoulder dystocia, basic neonatal resuscitation and preeclampsia should be carried out for all midwives, auxiliary nurses, nurses and all doctors. Study 2 Implementation and evaluation of the obstetric training programme: During a 2½-year study period 220 staff members were eligible for the obstetric training. Evaluation was carried out before, just after and 9-5 months following the training. Evaluation involved attitudes to training, self-assessment, evaluation on how stressful and unpleasant a skill was considered, written knowledge of skills test and data on how work-routines and organisation was influenced and changed.

Conclusions: The overall conclusions were that an obligatory obstetric training programme in the Obstetric department, Rigshospitalet, Denmark had an impact on both the individual and on the organisational level.

The content in the presentation is based on a Master in Medical Education Degree, University of Dundee, Scotland.

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8F Self-assessment

8F/SC1 Self-assessment of resident competence: is it feasible?
Masanaga Yamawaki*, Mikako Masuda, Atsushi Okawa, Yujiro Tanaka (Dept. Professional Development, Tokyo Medical & Dental Univ., 1-5-45, Kohinata, Bunkyo-ku, Tokyo, 113-8519, Japan)

Background: The aim of this study is to compare residents’ ratings of self-assessment on clinical competence with those ratings of trained faculty supervisors.

Work done: One hundred and seven rotations of 54 PGY-1 trainees in 2007 were investigated. Self-assessment and assessment from faculties were collected by the web-based Evaluation System of Postgraduate Clinical Training (EPOC). Twenty-one items concerning clinical competence were evaluated. Paired T test and Wilcoxon rank sum test were used to analyze the data.

Results: Both residents and faculty rated low score in ‘analyzing clinical information and judgment’ (1.87 vs. 2.10, satisfactory > 2), ‘participating academic activity’ (1.85 vs. 1.86), and ‘awareness of systems-based medicine’ (1.82 vs. 1.93). Overall assessments were correlated significantly with the faculty ratings (p<0.001). Ratings of ‘analyzing clinical information and judgment’ and ‘effective presentation’ were significantly decreased in self-assessments (p<0.001). In addition, items on ‘consultation’, ‘practice-based performance’, ‘medical ethics’ (all p<0.01), ‘effective information exchange’, and ‘self-reflection’ (p<0.05) were also significantly decreased in residents’ assessments.

Conclusions: There are significant correlations between residents’ self-assessment and ratings from faculty. Residents tend to score themselves lower than does faculty in clinical decision making, self-reflection, and interpersonal communication.

Take-home messages: It is feasible to evaluate residents’ competence by self-assessment.
8F/SC2  Measuring predictive, summative and concurrent self-assessment: a study of GP trainees
Valérie Dory, Jan Degryse (Université catholique de Louvain, Centre Académique de Médecine Générale, Avenue Mounier 53 b 5360, Brussels, 1200, Belgium)
Background: Self-regulation is essential for safe medical practice. Self-assessment ability has been shown to be poor in the predictive and summative modes but it has rarely been measured in the concurrent mode which may be closer to the all important ability of reflection-in-practice (Eva and Regehr, 2005).
Work done: UCL general practice trainees were required to participate in experiments run in 2005 and 2006. Participants sat a validated MCQ test on four domains. Self-assessment was measured before and after the test using a 7-point Likert scale for each domain (predictive and summative modes). Concurrent self-assessment was evaluated by spectral analysis of degree of certainty scores for each item.
Results: 127 GP trainees (of 180) took part in 2005 and 120 (of 147) took part in 2006. Predictive and summative self-assessments were poorly correlated to MCQ score. Spectral analysis will be discussed further in the presentation.
Conclusions: Our study confirms previous research showing it to be very difficult for trainees to self-assess. Spectral analysis may prove a useful tool for concurrent self-assessment measurement and feedback.

8F/SC3  Assessment of holistic approach in Family Medicine using video recording
Malinee Punyaratabandhu, Sairat Noknoy, Soraya Wongwilai (Chonburi Medical Education Center, Chonburi Medical Education Center Sukhumvit Road, Muang District Chonburi Thailand 20000, Thailand)
Background: A 2 week family medicine course was established for 6th year medical students to increase the ability of a holistic approach. The teaching methods included self assessment and coaching. Videotape recording was used for self assessment. Patient-centered medicine, health promotion in practice and principles of family medicine were lectured followed by a patient-centered approach and home care. The aim was to assess the students' performance.
Work done: A quasi-experimental study was done in students enrolled from February 2005 to March 2006. How the student approached the patient was recorded for pretest videotape. After 2 weeks, a posttest videotape was recorded. Videotapes were masked and sent to two evaluators for assessing three skills: communication, health promotion and treatment. Wilcoxon test was used for analysis.
Result: 14 students: 5 males and 9 females. The median pretest and posttest scores were 33.50 and 87.40, statistical difference (p<0.001). The scores of skills improved significantly (p<0.005).
Conclusion: This elective course could improve students' holistic approach. They considered that self assessment using video recording was an important strategy; however, teachers' coaching was also essential to guide them.
Take-home message: Student skills in Holistic Approach can be improved by using Video Recording.

8F/SC4  “Metacognitive realism”: an undiscovered dimension of medical competence?
Background: In earlier research, the relationship between the ability to self-assess and an external criterion (such as a parallel assessment by tutors, peers or professors) was studied (Falchikov and Boud, 1986; Gordon, 1991; Tousignant and DesMarchais, 2002). In all of these studies a small degree of agreement is found between the external evaluation and the self-assessment. In our research the relationship between the ability to self-assess and an internal criterion is studied: especially own performances on a knowledge test.
Work done: Spectral analysis was used as an new innovative method to capture “metacognitive realism” based on a model proposed by Jans and Leclercq, 1999). The results of three experiments in which GP trainees (n=180) were assessed with different methods are reported.
Results: In this research, no link has been found between the total test score and the results of the spectral analysis. Growth of knowledge was not associated with an improved ability to mark the boundaries of one's own knowledge.
Conclusions: All this supports the hypothesis that what was described as metacognitive realism can be considered as a separate dimension of medical competence.

8F/SC5  Students’ clinical performance on technical and humanistic skills: comparison between faculty and self assessment
R C L Domingues*, A M B Zeferino, S S Morais, E Amaral (Universidades Estadual de Campinas - UNICAMP, Rua Luciano Venere Decourt, 858, 13083-740, Brazil)
Aim: To compare medical students' self and faculty assessment scores for technical and humanistic skills using a Global Itemized Rating form (GIR).
Work done: At the end of a clinical clerkship, faculty and students filled in a GIR form, consisting of 6 items on technical and 7 on humanistic skills (scale 0-10). Statistical analysis used Cronbach coefficient, Wilcoxon paired-test, and Spearman coefficient.
Results: Internal consistency was higher than 0.8. Self and faculty scores were higher for humanistic skills (self difference=1.1, r=0.54, faculty difference=-0.5, r=0.49, p<0.0001). The lowest scores were related to technical skills (6.2 self, 6.8 faculty). For technical skills, faculty rated higher than self (difference=0.5, r=0.25, p=0.004); and for humanistic skills, lower than self (difference= - 0.1, r= 0.17, p= 0.0191). The lowest scores for technical skills were: quality of history, physical examination (self), medical knowledge, clinical judgment (self and faculty), and for humanistic skills: self-reflective skills, compassion and relationship with staff/other health professionals (self and faculty).
Conclusions: Median ratings exhibited a “ceiling effect”. There might have been a “leniency effect”. Raters agreed technical skills need more attention for this group of students.
Take-home messages: Technical skills learning strategies should be revised.
8G/SC1 Adding irrelevant options in a matching test increases reliability and lowers mean scores

Jaap W Groothoff, Joost Frenkel, Lieve A Tytgat, Willem B Vreede, Olle Thi ten Cate* (Emma Children’s Hospital Academic Medical Centre, Meibergdreef 9, 1105AZ, Amsterdam, Netherlands)

Background: Ber’s Comprehensive Integrative Puzzle (CIP) is an attractive test, which aims to test clinical reasoning by matching clinical features with diseases. However, the test shows as many answer options as open slots, which might induce false high scores due to the use of exclusion strategies on top of valid cognitive strategies. We presumed that adding irrelevant answering options would reduce this effect, making the test more reliable and discriminative.

Work done: 32 medical students, 28 paediatric residents and 6 paediatricians from 4 different hospitals completed a CIP test in a forced choice format (FOR-test). 26 equally trained students, 17 paediatric residents and 12 paediatricians of the same hospitals completed the same test in a free choice format, for which 2 irrelevant items per question were added (FREE-test).

Results: Mean scores of the FOR-test of students, residents and paediatricians were, respectively, 81, 92 and 97% (SD1,6, 0.7 & 1.6), of the FREE-test 72, 89 and 92% (SD 2.1, 0.7 & 1.1). Cronbach’s alpha scores of both FOR- and FREE-test were 0.77 and 0.93, respectively.

Conclusions/take-home message: Adding irrelevant items to the CIP increases its reliability, discriminative power and its usefulness in the assessment of clinical testing of medical knowledge.

8G/SC2 Reliability of assessors: influence on marking policy

Susan Annetts*, Monica Busse (Wales College of Medicine, Biology, Life and Health Sciences, Cardiff University, School of Healthcare Studies, Heath Park, Cardiff, CF14 4XN, United Kingdom)

Background: Double marking of undergraduate physiotherapy dissertations has been policy within this Department since course establishment. Concerns of unknown reliability in addition to various external influences prompted a review of the project marking procedure with reference to reliability.

Work done: The inter-assessor reliability of the project marks in one student cohort was investigated using intra class correlation (ICC) values and Bland and Altman plots. A new procedure of marking was developed as a result. The reliability study was repeated in a later cohort to allow review and additional minor adaptations to the policy.

Results:

<table>
<thead>
<tr>
<th>ICC</th>
<th>Mean (SD) difference between marks</th>
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<tbody>
<tr>
<td>Initial Study (n = 76)</td>
<td>0.87 (0.6 (5.3))</td>
</tr>
<tr>
<td>Follow up Study (n = 18)</td>
<td>0.73 (2.6 (6.8))</td>
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Bias was evident in the lower and upper ranges of marks. Differences between markers (within one S.D) were least when marks (%) ranged between 50 and 75.

Conclusions: Although double marking may be justified in terms of maintaining appropriate overall reliability, Bland and Altman plots indicate that it is only when marks are less than 50% or over 80% that double-marking becomes necessary.

Take-home messages: Evaluation of reliability should inform marking procedures.

8G/SC3 Learning by assessing: impact of actively compiling multiple-choice questions on students’ performance in an internal medicine multiple-choice test

Jana Jünger, Daniel Brox, Jochen Schönenmann, Stefan Wagener, Jobst-Hendrik Schultz (University of Heidelberg, Department of Internal Medicine, Im Neuenheimer Feld 410, Heidelberg, D - 69120, Germany)

Background: Mobilizing students to engage in self-directed learning appears to represent a serious problem in implementing learner-centred methods of instruction. Studying for exams is known to play a significant role in the regulation of learning processes. At the Medical Faculty of Heidelberg University, we therefore investigated the extent to which students’ self-directed learning and in turn examination success was increased by having students compile examination questions in addition to studying for the exams.

Work done: Medical students received instruction in 12 POL-groups. The active compilation of multiple-choice (MC) questions was employed as a didactic tool for the promotion of self-study. Students generated MC-questions based on self-selected course learning objectives. These questions were discussed in POL-groups and finally made available online to all students for the purpose of voluntary self-assessment.

Results: A total of 171 students took part in the end-of-semester test developed by course tutors. Students who had compiled MC-questions prior to the test obtained significantly better results than those who had not generated such questions (t=2.58, p< .02).

Conclusions: The process of compiling course-based MC-questions appears to result in a deeper engagement of the medical students with the learning material and in turn to greater test-specific knowledge.

8G/SC4 Setting up a multiple choice question bank

Athol Kent* (University of Cape Town, 15 Greenfields, Pinewood Road, Rondebosch, 7700, South Africa)

Background: Setting up a shared multiple choice question (MCQ) bank between departments is an attractive idea. Clinical disciplines like Obstetrics & Gynaecology frequently use MCQs in their undergraduate assessment of students, but the challenge is to create sufficient questions to maintain the standard of each examination. Apart from questions becoming known to the students, the latest knowledge needs testing and new technology offers alternative means of presenting questions. In particular on-line MCQs can use diagrams, graphs, charts, ultrasound images, pictures and video clips to assess basic sciences and clinical reasoning.
Assessing professionalism: the impact of an instrument on teaching and learning professional skills

Chris Aubry, Nathalie Drauine (KU Leuven, Onderwijs en navorsing 2; Herestraat, postbus 322, Leuven, 3000, Belgium)

Background: Professionalism has always been an important goal of medical education: physicians are committed to the health and well-being of individuals and society through ethical practice, professional-led regulations and high personal standards of behavior.

Our faculty has decided to reinforce this professionalism by improving the instruction, sustaining learning experiences and reflective practice and assessing the professionalism of students and residents. We will focus on assessment in this presentation. Missing or unsatisfactory professional behavior should be identified instead of describing physicians and students as "unprofessional".

Work done: An instrument, based on the framework of the EPRO-GP instrument (Vande Camp, 2006) and the Van Luijk instrument (van Luijk, 2003), was developed to assess the behavioral aspects of professionalism in everyday practice and it was tested during clerkship after the first year. We organized hearings with team members involved in the evaluation of the students during this clerkship in order to assess the use and the content validity.

Conclusions: The team members recognized the instrument as being helpful to objectify the assessment of attitudes. It also helped to clarify professional expectations as it was used to give the students personal feedback on their professional behavior.

Take-home messages: Professionalism can be reinforced by assessing professional behavior and giving feedback during practice.

Assessment of professionalism in undergraduate medical students

Anthony J O'Sullivan*, Susan Toohey (Faculty of Medicine, University of New South Wales, St. George Hospital, Kogarah, New South Wales, 2217, Australia)

Background: Professionalism is comprised of a set of values and behaviours that underpin the social contract between the public and the medical profession. Medical errors are reported to result in significant morbidity and mortality and are in part related to underdeveloped professionalism. The aim of this study was to determine whether specific aspects of professionalism were underdeveloped in medical students.

Work done: A questionnaire with 24 clinical and teaching vignettes designed to represent 8 aspects of professionalism was taken by Year 2, 4, and 6 medical students and their responses were compared to practicing Clinical Medical Academics.

Results: Student responses differed from Academics in two aspects of professionalism, firstly, high ethical and moral standards and secondly, humanistic values such as integrity and honesty. Only Year 2 medical student responses were different from Academics in responsibility and accountability. There were no differences in responses to the other 5 aspects of professionalism.
Conclusions: Certain aspects of professionalism seem underdeveloped in medical students compared with Academics.
Take-home message: Specific aspects of professionalism may need to be targeted for teaching and assessment in order that students develop as professionally responsible practitioners. In turn, students with well-developed professionalism may be less involved in medical error.

8H/SC3 Development of tool for cross-specialty assessment and feedback on residents’ professionalism and communication skills
Ian Cook, Hannah Zackson, Brenda Bursch, Susan Baillie*, Margaret Stuber (David Geffen School of Medicine at UCLA, 760 Westwood Plaza, Los Angeles, CA, 90024-1759, United States)

Background: Professionalism and communication skills are key competency areas to be taught and assessed during post-graduate medical education. Although there is extensive literature on measures and goals, most current measures have been developed for a specific sub-specialty training program, and few have allowed for multiple raters of a specific resident with the same instrument.

Work done: Using adaptations of existing measures as a base, sample questions were piloted with residency training directors from a variety of disciplines and with nurses and social workers and other staff who have frequent interactions with the residents. Questions were designed for both formative and summative feedback.

Conclusions: Training directors were eager to have useful and tested measures for feedback and assessment of professionalism and communication. The needs were quite similar in the various specialty areas, although some additional questions were required for the individual needs of each program. When offered, programs were open to additional training of the faculty in the use of the measures for feedback and remediation.
Take-home message: Assessment tools in professionalism and communication are key for all specialty training programs, and can provide an opportunity for improved feedback about development of these skills.

8H/SC4 The Professional Behaviour Committee – an opportunity for remediation?
Ann Kupa, Lindon Wing, Tina Comely (Flinders University School of Medicine, Dept of Clinical Immunology and Allergy, Flinders Medical Centre, Bedford Park, 5042, Australia)

Background: Modern medical practice requires doctors who always demonstrate professional behaviour. Doctors found wanting in terms of professionalism have been shown to have a history of poor performance or inappropriate behaviour at medical school.

Work done: The Flinders School of Medicine has established a process through which medical students whose professional behaviour does not meet expected standards can receive counselling and the opportunity for further development, under the auspices of the Professional Behaviour Committee (PBC). The PBC sets, monitors and maintains standards for students’ professional behaviour in the BMBBS. Students are referred to the PBC if initial counselling and review has not resulted in improved behaviour. The PBC investigates referrals, provides counselling, monitoring and feedback during a remediation period and can recommend failure in the relevant topic.

Results: 1998-2006: Unsatisfactory attendance: 3 students referred; Inappropriate behaviour: 5 students referred; Unsatisfactory attendance and behaviour: 8 students referred. Of the 16 students referred, (2 female, 14 male). 9 completed the course, 3 withdrew, 1 was precluded, 1 suspended and 2 are still enrolled.

Conclusion/Take-home message: Most students referred to the PBC have been able to modify their behaviour and achieve course completion. Their subsequent progress as health professionals will require evaluation.
try! If only 20% of the participants fails there is no need to change the training programs of residents, otherwise we need to pick up our balls and start to modernise resident training as we speak.

8I/F3  The Newtonian educator
Jamie Newman* (Mayo Clinic College of Medicine, 200 1st St. SW, Rochester, Minnesota, 55905, United States)
The forces of our universe are described and measured by a series of laws and equations known collectively as Physics. Though we seem far removed from the days of college physics, we exist in a universe still ruled by them - in this instance, the world of education. In this presentation I will use the laws of Physics to describe the universe of Education. From Newtons three laws, to the theory of relativity, black holes to the free energy equation, this unusual and whimsical perspective can aide in how we see ourselves as teachers.

8I/F4  The Snow White story retold for first-year medical students as part of an exam in the head and neck section of the anatomy course
Cristian Stefan (University of Massachusetts Medical School, Departments of Radiation Oncology and Cell Biology, 55 Lake Ave. North, Worcester, MA 01655, United States)
The formation of good physicians includes developing the ability to observe, reason deductively, and transfer acquired knowledge among contexts. The process of filtering and evaluating information needs to be continuously sharpened and seamlessly applied to familiar and unfamiliar settings. Making sense of what we encounter resides in the eyes of the beholder. For instance, even a well known fairy tale such as the Snow White story could offer ample opportunities to exercise all of the above attributes in a novel and creative way. A part of the Head and Neck exam in Anatomy was inspired by this story and tested a variety of topics/concepts of clinical relevance. The formal and informal feedback received from students was positive. Many students appreciated the ingenuity of this approach, indicated that they enjoyed the exam, learned from it, and/or would hardly forget concepts tested this way. 78% of the students agreed that the questions based on the Snow White story tested anatomical concepts and 80% agreed that the adaptation of this story for the exam was a positive learning experience. The audience is invited to get immersed in an old fairy tale, seen from a new perspective and filled with problem solving exercises.

Workshop Implementing an emerging standard for Virtual Patients
Susan Albright*, Valerie Smothers, James B McGee, Nabil Zary (Tufts University, 145 Harrison Ave, Boston, MA, 02111, United States)
Background: Virtual patients are interactive computer applications that simulate real life clinical scenarios to provide effective ways for healthcare professionals to explore a wide range of clinical topics and practice in a virtual (and therefore safe) environment. While many educators are developing virtual patients, they are often unable to share these resources with others. The MedBiquitous Virtual Patient Working Group has developed a common XML specification for the exchange of Virtual Patients across systems, enabling educators to exchange, modify, and play virtual patients irrespective of their sources.
Intended outcomes: Workshop participants will be able to assess the benefits and disadvantages as well as effort associated with implementing a technical standard for virtual patients.
Structure: Workshop leaders will provide an overview of the standard, share implementation experience, lessons learned, and recommendations for best practices. Participants will explore how they might utilize the standard within their own educational contexts and they will assess the advantages, disadvantages, and effort required to implement the Virtual Patient standard.
Intended audience: Those involved in the development and use of virtual patients and virtual patient systems.
Level of workshop: Intermediate.

Workshop Can advanced clinical training and greater understanding of a basic science discipline co-exist in a senior medical school elective?
Richard L Drake¹, Wojciech Pawlina² (¹Cleveland Clinic Lerner College of Medicine, Cleveland Clinic /NA24, 9500 Euclid Avenue, Cleveland, Ohio, 44195, OH; ²Mayo Clinic College of Medicine, Rochester, MN, United States)
Background: The senior elective provides the graduating medical student with an opportunity to obtain advanced training. Usually this training is in the clinical area chosen for their residency or it may provide an opportunity for the undecided student to undertake advanced training in several clinical areas to help them make a decision. Alternatively, it could provide an opening for the basic scientist to re-enter the educational pathway. Electives coupling advanced clinical training with a basic science component could provide a unique educational partnership.
Structure: Participants in this workshop will share ideas on developing senior electives that integrate advanced training in a clinical area with a greater understanding of a basic science discipline. Participants from a specific basic science will sit together and be joined by participants from clinical disciplines. After an introduction by workshop leaders giving examples of integrated electives, each group will formulate an elective plan using the following questions: What basic science topics should be revisited? What clinical disciplines would be appropriate to integrate with? What would an integrated elective look like?
The workshop will conclude with participants sharing and critiquing the electives developed.
Intended audience: Anyone interested in developing senior electives combining advanced study in basic sciences with a clinical specialty.
Level of workshop: All.
Workshop

8L  “Placing the Patient at the Core of Teaching”: Developing early patient contact for medical students in their first semester

Penny Lockwood,* Fiona Muir (Community Health Sciences, University of Dundee, Mackenzie Building, Kirsty Semple Way, Dundee, DD2 4BF, United Kingdom)

Background: We presented a poster at the AMEE conference in 2006 called the “Placing the Patient at the Core of Teaching”. It described a method of allowing medical students to have contact with patients on their own during their first semester. It generated a lot of interest and many questions from conference delegates. The main questions asked were: (1) How do first year students who have minimal medical knowledge consult with the patients on their own? (2) What questions do the first years ask as they haven’t been taught history taking yet? (3) How are the patients recruited?

Intended outcomes: After the workshop the participants will: (1) Have some ideas for recruiting patients; (2) Be able to develop learning aims and objectives which enable a first year student to communicate with a patient; (3) Be able to brief first year students on how to communicate with the patient.

Structure: Introduction, review what is currently happening, and what problems are envisaged or experienced with early patient contact. Break-out to develop strategies for early patient contact. Finish up and conclusions.

Intended audience: This is aimed at anyone who wants to develop early patient contact in their curriculum.

Level: Beginner to intermediate.

Posters

8M  Problem based learning

8M/P1  Impact of problem based learning in a nutrition unit as part of a public health course

M E Ponce de Leon, A Ortiz, J R Lozano (National Autonomous University of Mexico, Medical School, México D.F., 04510, Mexico)

Background: The Faculty of Medicine in its academic program establishes the necessity that students develop the habit of self learning, the capacity for active learning, independent learning, critical judgment and decision making. The PBL strategy favors the above; it was considered suitable to introduce it into the Nutrition Unit during the Public Health course, selecting it for its relation with preventive and clinical aspects and its importance throughout the medical training of the student. The objective was to identify if PBL as a educational strategy favors learning at the level of understanding and application, in comparison with those students who received a more conservative and less participative learning.

Work done: Thirty Public Health professors described the education strategies which they used in the mentioned Unit, finding that seven of them used PBL (Group A) and 23 used conservative strategies (Group B). The 50 questions of the final exam were classified in three levels: knowledge (26), understanding (17) and application (7). We used a cohort study where both groups were compared with the results achieved by the students on each of the 3 question levels.

Conclusions: Results didn’t provide any statistical significance, but teachers who used PBL were very satisfied with the results.

8M/P2  The medical student’s sources of learning in a student-centered curriculum

M Nasr, E Nemr, R Moussa, S Abou-Jaoude, A Yazigi (Hotel-Dieu de France Hospital, Department of Surgery, Beirut, Lebanon)

Background: In 1999, a new student-centered curriculum was introduced in our medical school, with the introduction of PBL and small group work in the pre-clinical phase (first 5 years), and the last 2 years spent in clinical rotations. Our study aims to assess the importance of the different sources of learning in pre-clinical and clinical phases, and the contribution of the peers in the learning process.

Work done: 65 interns answered the following questions: Q1: “During the pre-clinical years, what percentage of your medical education came from your own initiative, your peers, residents or attending physicians?” Q2: “During the clinical years (clerkship), what percentage of your medical education came from your own initiative, your peers, residents or attending physicians?”

Results:

<table>
<thead>
<tr>
<th></th>
<th>Personal initiative (%)</th>
<th>Peers (%)</th>
<th>Residents (%)</th>
<th>Attending physicians (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-clinical years</td>
<td>43.26</td>
<td>10.18</td>
<td>1.11</td>
<td>45.45</td>
<td>100</td>
</tr>
<tr>
<td>Clinical years</td>
<td>49.82</td>
<td>6.41</td>
<td>25.62</td>
<td>18.15</td>
<td>100</td>
</tr>
</tbody>
</table>

Conclusions/Take-home messages: Since personal initiative is the most important source of learning, programs should include strategies to develop the student’s self-directed learning. Training the residents as medical educators is crucial because of their major contribution in the clinical years. Curriculum planners should be aware of and develop informal learning from peers.
8M/P6  PBL-group functioning and students' perceptions of case quality

Matti Aarnio*, Juha Nieminen, Heikki Hervonen (Research & Development Unit for Medical Education/University of Helsinki, P.O. Box 63 Haartmaninkatu 8, FI-00014 University of Helsinki, Finland)

Aim: To study the relationships between students' perceptions of PBL-group functioning and case quality.

Work done: First-year medical and dental students (N = 133), forming 16 groups, completed an 18-item questionnaire on various aspects (group functioning, case quality, tutor performance) of a PBL-session in three different PBL-sessions. Scores from the course test were also collected.

Results: In line with earlier studies, group functioning in PBL-sessions correlated strongly with case quality. Interestingly, group functioning in different sessions correlated with case quality even when the case remained the same. Preliminary results also seem to support the findings from earlier studies that group functioning and case quality are associated with academic achievement.

Take-home messages: A PBL curriculum may not foster SDL skills.

Conclusion: Success in PBL implementation should increase the correct knowledge, good understanding of PBL concepts, and skill in case construction among the instructors. In addition, appropriate learning resources must be prepared before PBL implementation.

8M/P5  Negative factors affecting self-directed learning in a problem-based curriculum

Chaou-Shune Lin*, Kuo-Inn Tsou, Shu-Ling Cho (School of Medicine, Fu-Jen Catholic University, 510 Chung Cheng Rd., Hsinchuang, Taipei Hsien, 24205, Taiwan)

Background: In a problem-based learning (PBL) curriculum, students are supposed to take greater responsibilities for deciding what they learn in the tutorial process of studying each health care problem (HCP). However, recent studies failed to uphold the claims of PBL. The aim of this study was to investigate which aspects of the PBL curriculum may subvert the development of students' self-directed learning (SDL) skills.

Work done: From 2005 to 2006, we conducted in-depth, semi-structured interviews with 14 medical students to collect information on changes in their SDL skills before and after their entry into our PBL curriculum. We used qualitative methods to analyze the data.

Results: Four mutually exclusive themes that emerged from the analysis were: (1) The overload of learning objectives suggested by HCP subverted the students' freedom to learn; (2) The written test drove students' learning activities; (3) Personal stress adversely influenced the management of self-study time; (4) Poor interaction in tutorial groups would dampen their enthusiasm in learning.

Conclusions: The findings are relevant to medical educators in demonstrating the factors which subvert the development of students' self-directed learning (SDL) skills.

Take-home messages: PBL promotes a deep approach to learning.

8M/P4  Learning approaches of undergraduate medical students to physiology in a Non-PBL (NPBL) and a Partially PBL (PPBL) oriented curriculum

Reem Rachel Abraham*, Vinod Pallath, Ganesh Kamath, Asha Kamath, K Ramnarayan (Melaka Manipal Medical College (Manipal campus), Manipal, Karnataka, 576104, India)

Background: The Faculty of Medicine, Thammasat University, has used problem-based learning (PBL) for 17 years. However, it was not as effective as we wanted. We think the knowledge and attitude of the instructors are also the key factors.

Objective: To establish the knowledge and attitude of Thammasat medical instructors toward PBL.

Work done: Questionnaires using a five-point Likert scale, true-false answers and open-ended questions were administered to instructors. Data were presented as percentages, correlation coefficient between factors. Differences were tested for statistic significance using the χ2-test (p<0.05).

Results: The response rate was 68.8%, of which 76.4% of the respondents had experience in PBL teaching. 58.2% had a good attitude, 76.4% had good knowledge of PBL concepts. Knowledge was correlated with attitude but had no statistic significance. Experience in PBL was significantly correlated with knowledge, and had a little association with attitude. However, 68.3% of the respondents wanted to use PBL as a method of teaching. The important motivations were that PBL provided several benefits to students, and challenged instructors for effective method of teaching.

Conclusions: Success in PBL implementation should increase the correct knowledge, good understanding of PBL concepts, and skill in case construction among the instructors. In addition, appropriate learning resources must be prepared before PBL implementation.

Take-home messages: PBL promotes a deep approach to learning.

8M/P3  Thammasat medical instructors' knowledge and attitudes toward problem-based learning

W Satayasai*, W Wongwan, T Wilam (Faculty of Medicine, Thammasat University, Prathumthanee, 12120, Thailand)

Background: The Faculty of Medicine, Thammasat University, has used problem-based learning (PBL) for 17 years. However, it was not as effective as we wanted. We think the knowledge and attitude of the instructors are also the key factors.

Objective: To study the relationships between students' perceptions of PBL-group functioning and case quality.

Work done: First-year medical and dental students (N = 133), forming 16 groups, completed an 18-item questionnaire on various aspects (group functioning, case quality, tutor performance) of a PBL-session in three different PBL-sessions. Scores from the course test were also collected.

Results: In line with earlier studies, group functioning in PBL-sessions correlated strongly with case quality. Interestingly, group functioning in different sessions correlated with case quality even when the case remained the same. Preliminary results also seem to support the findings from earlier studies that group functioning and case quality are associated with academic achievement.

Take-home messages: PBL promotes a deep approach to learning.

Conclusion: Results of the present study supports the earlier observation that PBL promotes a deep approach to learning.

8M/P2  Negative factors affecting self-directed learning in a problem-based curriculum

W Satayasai*, W Wongwan, T Wilam (Faculty of Medicine, Thammasat University, Prathumthanee, 12120, Thailand)

Background: The Faculty of Medicine, Thammasat University, has used problem-based learning (PBL) for 17 years. However, it was not as effective as we wanted. We think the knowledge and attitude of the instructors are also the key factors.

Objective: To establish the knowledge and attitude of Thammasat medical instructors toward PBL.

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Conclusions: Success in PBL implementation should increase the correct knowledge, good understanding of PBL concepts, and skill in case construction among the instructors. In addition, appropriate learning resources must be prepared before PBL implementation.

Take-home messages: PBL promotes a deep approach to learning.
Conclusions/Take-home messages: Well-functioning groups seem to perceive the cases to be of higher quality than poorly functioning groups. The quality of group discussion may thus have a significant effect on how well students are able to make use of cases. In order to enhance the quality of PBL-cases, attention should be paid to supporting the quality of group functioning and discussion. Students’ skills to contribute to group functioning should also be trained within the curriculum.

8M/P7 Physiology PBL small group assessment
D Muraga*, L Vergara, D Lancelloti, R Sagredo (Universidad Católica del Norte, Larrando 1281 Guayacan, Coquimbo, 178-1421, Chile)
Background: The implementation of the second year Medical Physiology course using Hybrid-PBL has been useful to orient the Basic Sciences toward the Clinic in our school.
Work done: The PBL tutorial work was done using six small groups (7-9 students) and a medical facilitator non-physiology expert for each group. The assessment of PBL student work during the tutorial small group work was done using three attitudinal rubrics: 1) self-assessment; 2) group mate-assessment and 3) tutor-assessment. We transformed the results of each rubric in a 1-7 scale and compared the results of these attitudinal assessments in the six groups with the weekly summative test used to evaluate the cognitive advances of the students.
Results: The result does not show a statistical correlation between the outcome of attitudinal rubrics and the physiological knowledge measured in the summative test.
Conclusions: Transforming the assessment of the student in qualifications, a simple number, hides a lot of information about the real level of the students and this is common practice in education. We explored the use of nMDS (non-metric multidimensional scaling) as a tool for handling the assessment results of the students in a more objective way.

8M/P8 Analysis of PBL tutor’s reasoning process for employing specific intervention skills
Gin-Hong Lee, Yu-Hua Lin, Chao-Shune Lin, Yu-Chu Huang (Department of Clinical Psychology College of Medicine FU JEN Catholic University, 510 Chung Cheng Rd, Hsinchuang, Taip ei County 24205 Taiwan)
Background: Although there is plenty of research on tutorial styles, there is a lack of study in examining the tutor’s cognitive reasoning process for employing a particular intervention skill. This study aims at investigating this process.
Work done: Seven tutors from the Departments of Clinical Psychology, Medicine and Nursing, participated in the research. Among 10 tutorial groups, 39 valid tutorial group sessions were video taped and tutor intervention episodes were marked. 688 meaningful episodes were identified and transcribed. Interpersonal Process Recall was utilized to collect research data. All interview contents were transcribed and analyzed according to the (ior gi’s phenomenological method.
Results: The result shows that reasoning processes that affected the tutor’s decision for employing certain intervention skills include: (1) tutor’s education rationale; (2) tutor’s expectation of the student; and (3) past experience of the tutor.
Conclusions: All tutoring behaviors seem to have been disposed by personal reasoning factors, which affected tutors’ personal intervention skills. It is found that tutors’ personal intervention behaviors tend to bear out the powerful influence of the traditional education paradigm.
Take-home messages: Future research will explore the appropriateness of these cognitive reasoning processes, and how they interact with effective or non-effective tutorial skills.

8M/P9 Implementing problem-based learning: experiences from Africa
S Hassan (St. George’s University of London, Centre for Medical and Healthcare Education, Tooting, London, SW17 0RE, United Kingdom)
Background: Problem-based learning (PBL) has been implemented for many years but mostly in the developed world. Ironically, in Africa where healthcare problems are so vast and where problem-solving skills are so highly needed, there are few examples of PBL implementation. In Africa, PBL is still regarded as an innovative curriculum despite its inception more than 30 years ago.
Work done: This paper focuses on the implementation and promotion of PBL in two African countries, viz. South Africa and Botswana. In this regard, student evaluation of a newly implemented PBL curriculum will be described and experiences of training academics in the implementation of PBL will be discussed.
Conclusions: The challenges of implementing PBL in Africa include (inter alia), lack of resources, lack of knowledge of PBL among academics, large classes and resistance by management. When PBL was successfully initiated at a South African University, students’ perceptions were very positive.
Take-home message: It is not always appreciated that there is such a wide gap in the knowledge and implementation of PBL between developed and developing countries. Africa lags behind in the implementation of PBL due to the many educational challenges it faces.

8M/P10 Verbal and nonverbal indices of learning during problem-based learning (PBL) among first year medical students and the threshold for tutor intervention
Isaac D Gukas*, Samuel J Leinster (School of Medicine, Health Policy and Practice, University of East Anglia, Norwich, NR4 7TJ, United Kingdom)
Background: Problem–based learning (PBL) is said to stimulate the cognitive process and enhance learning. During PBL, certain verbal and non-verbal expressions are used by students in response to specific learning issues. This study examines the use of these expressions by tutors as indices of the learning taking place and the degree this may influence their threshold to intervene.
Work done: Common expressions used by students during PBL were identified and scored on a Likert scale to indicate the learning taking place. The tutor’s threshold for intervention was also scored. Results: When the learning interactions involve exploratory questioning or cumulative reasoning, students tend to score high on learning and tutors have high threshold for intervention. When the learning interaction involves handling conflicts relating to knowledge, students still score high on learning, but teachers tend to have a low threshold for intervention.
Conclusion: Verbal and non-verbal expressions from students during PBL are useful indices of learning and can be used to help tutors decide when and when not to intervene.

Take-home messages: (1) Verbal and non-verbal expressions by students during PBL can indicate the learning taking place; (2) These may serve as useful cues for tutor intervention.

8M/P11 Examining the role of Problem Based Learning (PBL) tutors on learning objectives set by PBL groups

Amelia Hendry, Peter Yeates (University of Manchester Medical School, ATR4, Education and Research Centre, Wythenshawe Hospital, Southmoor Road, Wythenshawe, Manchester, M23 9LT, United Kingdom)

Background: Problem based learning (PBL) is underpinned by the principle that discussion of a problem within a group develops epistemic curiosity in the learner. For this reason learners may not be supplied with core curricula learning objectives. Previous investigation has examined the proportion of objectives set by case authors that PBL groups identify. The effect of contributions by the tutor on this process is unclear, especially the role of prompting by the tutor.

Work done: Prior to PBL sessions, researchers analyse case outcomes and deconstruct these into discrete concepts. Researchers attend PBL sessions and observe group interaction. Researchers note tutor contributions. Subsequent analysis of audio transcripts allows categorisation of the tutors contributions into emergent categories. A list of the group-generated outcomes is collected, and deconstructed into discreet concepts. The “closeness” of group-generated concepts to author-generated concepts is rated by researchers. Relationship between degree and category of tutor interaction and both proportion and closeness of author-generated concepts identified by groups is examined.

Conclusions/Take-home messages: Tutor contributions may relate to the group’s ability to set outcomes related to a case. Thus, this aspect of tutoring may impact on the effectiveness of PBL cases in producing coverage of core curriculum content.

8M/P12 Assessment of the interpretation competence in the professional training program for intensive and anaesthesia care

Angela Boonen (University Hospital of Hamburg-Eppendorf, Nursing School and Educational Center, Martinistraße 52, Hamburg, 20246, Germany)

Background: The University of Hamburg-Eppendorf has attempted for several years to advance the interpretation competence of participants in the professional training program for intensive and anaesthesia care by problem based learning (PBL).

Work done: With the aim of assessing the performance of the interpretation competence, a written case-based test including nine items was developed. The test was performed by 37 participants of two university hospitals (Hamburg and Munster). Due to the difficulty of assessing based on open questions, the assessment was conducted by five raters and the inter-rater-reliability was determined.

Results: Both the item quality and the test validity were adequate. The calculation of the reliability by means of the split-half method revealed a surprisingly high reliability coefficient of 0.59. Moreover it could be demonstrated that based on a detailed answering key a sufficient interrater reliability of 0.72 is achievable.

Conclusions: The high reliability coefficients motivate further development of such assessments. In addition different measures have been identified to even enhance the validity and reliability in the future.

Take-home message: Based on the test results it can be stated that the performance of the interpretation competence is assessable.

8N Multiprofessional Education; Outcome-based Education

8N/P1 Teaching pharmacy students using a multiprofessional team: a practical example

Louise Mallet (Faculty of Pharmacy, University of Montréal, C.P. 6128, Succursale Centre-Ville, Montréal, Québec, H3c 3J7, Canada)

Background: With the aging of the population and the presence of chronic diseases, health care practitioners need to approach patient care in a manner that addresses complex interconnected processes and values and beliefs of the patient.

Work done: This presentation will describe how an interdisciplinary team was introduced to undergraduate pharmacy students. A case presentation was prepared and each student had to take the role of a member of the interdisciplinary team. A simulated presentation to a case. Thus, this aspect of tutoring may impact on the effectiveness of PBL cases in producing coverage of core curriculum content.

8N/P2 Health care professionals’ perceptions of team interactions during acute medical crises in an ICU setting: a qualitative study

Dominique Piquette*, Scott Reeves, Vicki LeBlanc (The Wilson Centre, 200 Elizabeth Street, Eaton South 1-565, Toronto, Ontario, M5G 2C4, Canada)

Background: Intensive care units (ICUs) are recognized as complex environments where interprofessional collaboration is essential for optimal patient outcome. This study investigated ICU health care professionals’ perceptions of the effects of acute medical crises on team members’ interactions in the ICU setting.

Take-home message: Re-thinking the approach to teach students in terms of interdisciplinary approach.
Work done: We conducted 24 semi-structured interviews with ICU nurses, ICU staff physicians, and respiratory therapists. The interviews were audi-taped and transcribed, and the analysis was performed using an inductive thematic approach.

Results: The nature of interprofessional interactions changed as teams passed through three key temporal periods around medical crises: a 'routine period' preceding the crisis, a 'crisis period' and a 'post-crisis period': All professionals reported a similar range of expectations during the transition from the routine to the crisis period. However, nurses reported three specific needs in relation to the transition from crisis to post-crisis periods: emotional support, clinical feedback about crisis management, and rebuilding of interpersonal/interprofessional relationships. These needs are not always recognized by other professionals and are not formally addressed by the current ICU organization.

Conclusions: Take-home message: The post-crisis period could represent a suitable time to implement strategies to improve the management of ICU medical crises and the long-term well-being of ICU staff.

8N/P3 Challenges and opportunities in multi-professional education
Oana Chirita, Paul de Roos, Sohbia naz Khan, Souad Derraz (European Medical Students' Association, Vumc, Amsterdam, BT 1081, Netherlands)

Objective: To emphasize our interest in implementation of multi-professional education in our curricula. Multiple students' initiatives from across Europe are outlined in this poster to share how we try to put this subject on the agenda of curriculum planners.

Work done: in the academic year 2006-2007 students with backgrounds in nursing, pharmacy and medicine got together to organize different events in the field of multi-disciplinary education as part of a student campaign to promote better collaboration between their future professional colleagues.

The organized events range from a small workshop with 30 participants, to a high stakes international conference on multi-professional learning with 400 participants.

Conclusion: Take-home message: students are genuinely interested in exploring the work of their peers in other healthcare professions and to learn how they can work together in a team to achieve the best possible healthcare. The fact that students put in much effort to organize local and international events on this topic and that students tend to attend these events on a voluntary basis indicates evidence for this interest.

8N/P4 Interprofessional learning in geriatrics
K Simpson, H Cameron* (University of Edinburgh Medical School, Medical Teaching Organisation, Chancellors Building, 49 Little France Crescent, EH16, United Kingdom)

Background: There has been national and international demand for the education of students in health and social care to ensure they are able to work effectively as role-specific members of interprofessional teams.

Work done: (1) Joint initiative (University of Edinburgh and Queen Margaret University College) to run 3 pilot studies to introduce interprofessional sessions into both curriculum; (2) Readiness for Interprofessional Learning (RIPLS) survey conducted before and after sessions; (3) Quantitative and qualitative evaluation data gathered from students.

Participants were 4th & 5th year medical, nursing, and AHP students.

Conclusion: Take-home message: there is a need to identify ways to recruit appropriate healthcare students who are not in same region; (2) There is a need for a broad range of AHPs to ensure realistic MDT tasks; (3) There are problems conducting classroom MDT tasks in year 5 of undergraduate medical training; (4) There are significant difficulties in organising multidisciplinary sessions across 2 institutions; (5) A positive RIPLS before doesn't guarantee positive outcomes.

8N/P5 Asking difficult questions: an evidence based approach for effective IPE
Sue Kilminster*, Shelley Fielden (University of Leeds, Medical Education Unit, School of Medicine, Leeds, LS2 9NL, United Kingdom)

Background: This presentation addresses key educational, practice, policy and research issues by reporting on the development, implementation and evaluation of a series of work-based inter professional education (IPE) workshops about domestic violence. The UK government has emphasised the importance of multi-agency work between health and other agencies, including the voluntary sector. Effective IPE can improve inter professional collaboration and team work and is a policy imperative in the UK as is service and user involvement.

Work done: This project adopted an evidence based approach (including work on IPE, user involvement and domestic violence). In conjunction with an inter agency violence project, including police representatives, we developed a half day workshop, involving simulated patients, for final year health care students in community settings. The workshop was ‘asking difficult questions’ – the content of domestic violence emerged during the role-play and is for the learners to discover, manage and resolve.

Conclusions: We will present a brief description of the workshops and an evaluation of the project, including working with service users and patients on such issues and identify the lessons learnt.

Take-home messages: Outcomes of the project have relevance for partnerships and user involvement, pedagogy, practice and policy and we summarise these.

8N/P6 Embedding interprofessional education in medical curricula
Richard Hays* (Keele University, Staffordshire, STS SBG, United Kingdom)

Background: Medical schools are under pressure to include IPE in their curricula, because of realisation that the quality of health care depends in part on the ability of individuals from different health professions to work together, understand each others' roles, and work in effective teams to produce agreed health care outcomes. Ideally, students of different professions should learn and achieve together agreed IPE learning objectives in workplace settings. There is however no agreed definition of IPE and many so-called IPE activities may be ineffective.
Work done: This paper reports a development of an assessment-based categorisation of IPE and presents a range of IPE activities that require medical and selected other health professional students to learn and achieve together. Most are in community settings and avoid large scale, logistically complex activities.

Conclusions: The inclusion of IPE within a medical curriculum can include a series of small group, community-based activities that require students to learn and achieve together in a way that reflects genuine postgraduate health care teamwork. All IPE activities should be evaluated, as the literature on effective strategies needs development.

Take-home messages: IPE activities require appropriate educational design but are feasible and potentially effective.

8N/P7 Dip into Diabetes: developing multi-professional meetings for clinicians working with diabetes: success or failure?

Sue Holmes*, John Benson, Jackie Reynolds, Mary Hall (Medical Education Research Group, School of Clinical Medicine, University of Cambridge, Addenbrookes Hospital, Box 111, Hills Road, Cambridge, CB2 2SR, United Kingdom)

Background: Diabetes care involves different health care professionals (HCPs) in the community and in hospital. Although HCPs work together to look after patients, they often do not attend joint educational meetings. Although there is little evidence that such meetings lead to improved patient care, the concept of multi-professional education holds strong appeal.

Work done: We aimed to organise regular multi-professional meetings spanning primary and secondary care, ‘Dip into Diabetes meetings’, before evaluating their effect on patient care. Despite experimenting with different times, venues and learning styles and with excellent feedback from attenders, we found it difficult to consistently attract GPs, hospital doctors, nurses, dietitians and podiatrists to meetings. We suspended meetings, developed a questionnaire from attendants’ feedback and sent it to all diabetes HCPs working in the Cambridge locality. After piloting, the questionnaire explored preferences for meeting style, location, timing and content. We will report the findings and consequent plans for future meetings.

Conclusions/Take-home messages: Attracting participants to multi-professional meetings is a prerequisite to determining their effectiveness in improving patient care. Such meetings are difficult to establish. We will report HCPs’ expressed preferences regarding their nature.

8N/P8 National faculty development program for competency based education: a curriculum description of a CanMEDS workshop series

Jonathan Sherbino*, Denyse Richardson, Jason R Frank (Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, Ontario, K1S 5N8, Canada)

Background: The RCPSC CanMEDS framework is a foundation for competency based education across 7 Roles – Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional. Implementation in Canadian medical education requires effective faculty development for teachers at each medical school.

Work done: We describe the design and implementation of a national faculty development program that develops local faculty experts in each of the CanMEDS domains. A series of Train-the-Trainer (TTT) workshops introduces: (1) needs assessment; (2) objective writing; (3) curriculum design; (4) teaching methods; (5) learner assessment; and (6) program evaluation.

Results: Our curriculum description addresses: (1) recruitment of workshop content experts; (2) recruitment of conference attendees; (3) implementation strategies between a national educational body and medical schools; (4) published program resource manuals; (5) program evaluation; and (6) scholarship related to this project.

Conclusions: The national implementation of competency based education requires coordination. The implementation of the CanMEDS Roles into the medical educational system requires the fostering of local experts that can provide institutional solutions to specific needs. We provide an example of a successful longitudinal program.

Take-home messages: A national Train-the-trainer program is a viable method to support faculty development for competency-based education.

8N/P9 CanMEDS for South African pathology training

J Bezuidenhout, V Burch, S Nayler, W Grayson, E Wasserman, E van Rensburg, J Mahlangu, M Altini, Meyer, Moodley, M Senekal, I Loftus (Stellenbosch University, PO Box 19063, Tygerberg, Cape Town, 7530, South Africa)

Background: In South Africa universities are tasked with training all enrolled candidates, while examinations are conducted by both universities and a national College of Pathologists (COP). Successful completion of either permits registration as a pathologist with the Health Professions Council South Africa. This results in real and perceived inconsistencies between training programmes, while assessment alignment has never been standardised. The need to establish a national training and assessment framework is apparent.

Work done: The Canadian Royal College of Physicians and Surgeons’ competency framework (CanMEDS), was used to conduct an electronic, 6-point Likert scale needs-assessment survey of all pathologists and pathologists-in-training.

Conclusions: All CanMEDS roles were regarded as at least somewhat important by the majority of respondents. At the annual national Federation of South African Societies of Pathology conference the development of a national framework based on the CANMeds model was unanimously accepted by the Federation and the COP.

Take-home messages: The needs assessment survey paves the way to develop a standardised uniformly accepted model of training and assessment of pathologists. The CanMEDS roles are all important and should be included in any framework that is developed in South Africa. It can also be used for standardising other postgraduate training programmes in South Africa.
From EuroPEP to StudPEP: Using a GP quality improvement tool for educational purposes

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Background: The University of Oslo has developed a patient evaluation project for 5th year medical students. In this project, 25 real patients provide feedback on the student’s performance on independent general practice consultations. Here we present the recent improvements.

Work done: The questionnaire adjustments: EUROPEP is a quality improvement questionnaire for general practice acknowledged for validation and reliability. The StudPEP version matches the “student-as-doctor” setting. A global score question was added, and patients were asked about the student’s positive qualities and to give the student a piece of advice for the future. Self-administering the StudPEP project: In 2007 all students in GP preceptorship will distribute StudPEP forms to 20 of their patients after independent consultations. In addition, the tutoring doctors will observe 5 student-led consultations. These 5 consultations will be evaluated by patient, student and tutor. The tutoring doctors have been informed and trained in using the system. The students are expected to verbalize their self-evaluation, and can compare their thoughts to other’s feedback. Preliminary results will follow.

Take-home message: An improved tool for patient evaluation of the medical student consultation is described.

Expected and observed abilities (knowledge, skills and personal characteristics) in first-year medical students in Italy

G Familiari*, A Citadini, G Caruso, C Panella, A Salerni, F Di Donato, M Relucenti, R Heyn, V Ziparo, P Gallo, L Frati, A Lenzi (University of Rome La Sapienza, Laboratory of Electron Microscopy “Pietro M. Motta”, Department of Human Anatomy, Via Alfonso Borelli, 50, 00161, Italy)

Background: In order to better define abilities of school-leaving students applying to Italian medical schools (MS) a structured questionnaire was made up.

Work done: A cohort (n=471) of Italian university teachers from 26 MS (63% of all MS) were asked to indicate and hierarchize, in first-year medical students, expected and observed knowledge (K), skills and personal characteristics (SPC) relevant for admission to the MS.

Results: Among mostly expected K, teachers ranked Italian, English, logics, biology, informatics, chemistry, classical literature and physics. The same K was checked as of “good” level in 69.5%, 26.2%, 27.0%, 45.9%, 68.6%, 33.9%, 10.7%, 22.8% of first-year medical students, respectively. Among mostly expected SPC, teachers ranked study ability, critical thinking, initiative and curiosity, high motivation, problem solving, personal integrity and ethos, communication skills. The same SPC were checked as of “good” level in 53.9%, 24.0%, 27.0%, 65.4%, 37.9%, 67.0%, 62.7% of first-year medical students, respectively.

Conclusions/Take-home message: The ascertainment that expected K and SPC were quite variable in admitted students imposes on us: 1) a better collaborative relationship between school and University; 2) a serious commitment to improve admittance tests in order to render them more suitable to the aim of selecting the most competent students.

Generic competences in undergraduate medical education

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Aims: To assess the opinions of undergraduate medical students and their teachers on the importance of generic competences in medical practice and on their anticipated frequency in undergraduate medical education.

Work done: In medical practice physicians need both vocational and generic competences. During medical education generic competences are typically embedded in theoretical and clinical courses without describing them separately in the curriculum. Students and their teachers may therefore be poorly aware of the presence of generic competences within the curriculum. We therefore reviewed the estimated importance of generic competences in postgraduate working life and their anticipated appearance in the curriculum among students and their teachers by a questionnaire in the Medical Faculty of Turku University, Finland.

Results: Both groups thought that problem solving skills, ability to work autonomously and ability to recognize own limits are important in medical practice and are also often handled in medical education. The respondents further found that empathy, tolerance of uncertainty, organization skills and time management are very important in the medical profession, but are still insufficiently considered in education. Congruence between the students’ and teachers’ opinions was high.

Conclusions: The findings suggest that in undergraduate medical education more attention should be paid on teaching of generic competences like empathy, tolerance of uncertainty and organization skills. Generic competences should be made visible in the curriculum.

Systematic approach to medical curricula – a new approach

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Background: A systematic approach is defined as a move from apprenticeship-based curriculum toward a curriculum that assures essential competencies for all medical graduates through planned learning experiences and facilitates achievements of predefined outcomes. It is practically reflected in educational programs as a range of electronic or paper records (such as logbooks or portfolios) which tracks students’ learning.

Work done: A systematic approach is defined in a broader perspective in this article based on a conical model of the medical education program where all components of the educational program are aligned with program outcomes. This approach is based on four principles: (1) Essential competencies should be clearly predefined; (2) Learning experiences must be meticulously planned; (3) Evaluation of all program components must be conducted and carefully recorded; (4) Corrections of all program components must be conducted based on evaluation feedback which results in alignment with educational outcomes.

Conclusion: All quantitative and qualitative characteristics of the program’s components including the program’s components (goals, contents, methods and evaluation) students, faculties, resources, and even educational program
management should be defined according to program outcomes, and systematically revised based on evaluation feedback and program outcomes.

Take-home message: A systematic approach to an educational program means that all program components are approached systematically.

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**Posters**

**80 Important topics in the curriculum 2**

### 80/P1 Educational video films and computer CD effects on teaching anatomy to medical students

S Imasi-Tork, A Roozbehi, M Faroorae (Shahid Beheshti UMSHS (University of Medical Science and Health Services), School of Medicine, Anatomy Department, Shahid Chamran Highway, Evin, near Taleghani Hospital, Tehran, 19395, Iran)

**Background:** Easier learning of anatomical courses and recalling them more easily have been investigated by teachers.

**Work done:** An attempt was made to investigate the effect of educational video films and computer CDs on teaching anatomy as well as lectures, dissection and models. The sample was medical students of Yasuj University entering in 2002, who were divided into three groups of control, film and CD, and the course was trunk anatomy. Theoretical classes, dissection and models were presented to each group. Meanwhile, the video film was shown to the film group and computer CDs to the CD group. The practical and theoretical scores of the students were analyzed.

**Results:** The results showed that the practical mean scores of the CD group were higher than film and control groups in all subjects (thorax, abdomen and pelvis) and theoretical and practical mean scores for the CD group in thorax were higher than the other two groups. The theoretical mean scores for video film group in pelvis and abdomen were higher than those two groups.

**Conclusions/Take-home message:** As learning styles are different, diversity in using devices for education is essential.

### 80/P2 An investigation of group discussion through poster presentation on teaching anatomy to medical students

A Roozbehi*, A Zarifi , R Mahmoudi, H Delaviz (Yasouj University of Medical Sciences, Faculty of Medicine, Anatomy Department, Motahari Boulevard, Yasouj, 75914, Iran)

**Background:** Teaching and learning anatomy using appropriate techniques have attracted the attention of the instructors. Active learning suggests that students must do more than just listen. Researchers decided to test the investigation of group discussion through poster presentation on teaching anatomy to medical students in Yasuj University.

**Work done:** Illustrations from different educational atlases were copied on the 100x70 cm posters. Each group of students was in charge of some posters and actively read and discussed them within groups and then taught them to other groups. A questionnaire was provided asking the students’ opinions.

**Results:** The average score of the subjects was higher than that of the control group. Our average of the anatomy score at the comprehensive basic sciences examination in 2006 was significant in comparison with the average of 24 universities. We obtained the second position of anatomy in 2006. Students didn’t feel overloaded with the materials and felt relaxed at exam.

**Conclusions/Take-home messages:** We propose that strategies like reading and discussing posters within and among small groups can promote active learning and should be defined as instructional activities involving students in doing things and thinking about what they are doing.

### 80/P3 Enhancement of the teaching of Molecular Medicine (MM) in the Internal Medicine Clerkship: curricular change and faculty development

Daniel Panisko*, Anne McLeod, Donald Branch, Lawrence Aoun, Shiphra Ginsburg (Department of Medicine, University of Toronto, Suite 805, 3rd Floor, R. Fraser Elliot Bldg., Toronto General Hospital, 190 Elizabeth Street, Toronto, Ontario, M5G 2C4, Canada)

**Background:** Internal Medicine Clinical Clerkships (IMCCs) are an ideal venue within which to pursue the enhancement of teaching and learning in molecular medicine (MM), because of the great breadth of their learning content domains, and the already frequent application of basic molecular precepts in clinical IM. Perennial challenges in the implementation of MM teaching include 1) how to decide which content areas should constitute the curriculum and 2) how to enhance the comfort of scientists to teach students immersed in a very practical component of their training.

**Work done:** Curricular and instructional development needs for the teaching of MM will be obtained through needs assessments of faculty, students, and wider society. A series of faculty development workshops will be created, conducted, and evaluated (at Kirkpatrick Program Evaluation levels 1 to 3) to enhance the teaching of MM by scientists to clinically-involved students.

**Conclusions/Take-home messages:** Careful choice of curriculum, for the relevant teaching and learning of MM in an IMCC, is required because of the vast potential array of subject material. Instructional development of scientists and clinician scientists through a workshop series may improve their teaching to medical students at this specific stage in their educational development.
8O/P4  Simulation of the life cycle of a research project from the hypothesis to the diffusion of results

H Snellgrove*, S Basili, A Catania, M Cecconi, F Consonti, F Di Maio, E Ferranti, G Fliati, S Lucarrini, I Nofroni, F Romanelli, M Romeo, M Sacchetti, P Santini, A Scano, A Vestri (1st Faculty of Medicine University "Sapienza" of Rome, vialle del Policlinico, 00161, Italy)

Background: Complexity in research is among the topics of the course of Clinical Methodology, third year at the 1st Faculty of Medicine of Rome. We simulated the life cycle of a research from the hypothesis to the diffusion of results, putting a group of 146 students in the role of researchers in a given problematic framework.

Work done: We used as a context the long and sharp debate (1) about the usefulness of mammography as a screening tool for breast cancer. Students, who already achieved a set of basic objectives about clinical epidemiology and how to look for Evidence, were given some essential knowledge about breast cancer and were asked (a) to formulate an hypothesis and plan an experimental setting to compare breast self examination and mammography as screening tools; (b) to reconstruct the thread of reactions followed to (1) and to critically assess them; (c) to prepare a poster about their work and conclusions. Students worked in small groups in a blended modality, both in presence and by the communication tools of an e-learning platform. All the posters were presented in a simulated congress poster session and evaluated by a mixed commission (students and teachers) according to a predefined grid.

Conclusion: Simulating a research project can be a valuable learning activity.

8O/P5  A lesson from an elective course “Women in Medicine”, in a male-dominated Korean medical school culture

Wootaek Jeon*, Miran Kim (Yonsei Medical School, Department of Medical Education, Yonsei Medical School, 134 Shinchon-Dong, Sedaemoon-Gu, Seoul, 120-749, Republic of (South Korea))

Background: Even though 35% of Korean medical students are female, medical schools and hospitals maintain a strongly male-dominated culture which discourages female students from active career development. In 2006, Yonsei Medical School instigated an elective course entitled “Women in Medicine” to encourage 51 female students who enrolled in the course.

Work done: Researchers conducted participant observations at all 6 lectures, as well as 2 surveys and 4 student focus group discussions comprising a total of 18 students.

Results: The total satisfaction rate of the course was high at 4.6 points out of a 5-point score. Nevertheless, the study results confirmed three conflict points between lecturers and students. Firstly, the lecturers emphasized the excellence and carrier-goal oriented life style, whereas most students are more interested in an ordinary women doctor’s life. Secondly, the lecturers emphasized the importance of husband and family’s support for success in their career but most female students have little confidence in their ability to achieve a balance between work and family. Thirdly, the lecturers emphasized the women doctor who is able to lead a team effectively, but women students have few opportunities to play a leadership role in their school life.

Conclusions: These study findings imply that there is a generation gap in the concept of “successful women doctor’s life” between lecturers and students, and that interactive dialogue between lecturer and students is more important than lecture style presentations from extremely successful female doctors. In addition to such lectures, a leadership program based on active student participation should be developed.

8O/P6  Implementing prevention into the medical curriculum: a case-based approach for teaching primary health promotion

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Background: Effective prevention and health promotion are increasingly important for our health systems and should be considered in the medical curriculum. Parallel to a lecture-course a case-based teaching and testing concept was developed meant to enable students to perceive individual health risks, reveal health-favourable influences and salutogenic factors to gain authority in risk communication. The aims of our study are to evaluate the learning processes, achievement of training goals and educational satisfaction of our interdisciplinary teaching model.

Work done: The 14-hour tutorial within their final year at Halle medical school gives students (n= 230) an introduction to risk assessment and risk communication. Then each student is assigned a patient out of five risk-stratified groups. Their performance records (raised data, risk factors, health-promoting resources, individual risk communication) are presented and critically discussed in the seminars. Additional questionnaires using quantitative and qualitative methods then analyze the students’ self-perception.

Results: After taking part in this case-based learning scheme students stated an increase in self-perceived knowledge and performance and judged this highly relevant for their future work.

Conclusion/Take-home message: A case-based curriculum is sucessful in fostering attitudes, abilities and skills meaningful for prevention and health promotion.

8O/P7  Complex educational programme for graduate and postgraduate students (tumor prevention)

Katalin Barabás, Andrea Radnai (University of Szeged General Medical Faculty Dept. of Psychiatry Division of Behavioural Sciences, Szeged, Szentháromság u. 5., H-6722, Hungary)

Background: The Hungarian epidemiology data on cancer morbidity and mortality is one of the worst in Europe. That health challenge should be responded to in medical training as well.

Work done: A complex graduate and postgraduate programme development was initiated at the Department of Behavioural Sciences at the Szeged Medical Faculty aiming at developing and improving competencies in prevention of cancer. Before starting a training the trainers for how to teach, a survey was conducted on medical students’ and graduated doctors’ knowledge and attitudes on tumorous diseases. On the basis of the results of the survey an integrated and problem-oriented curriculum was set up.
Results: The results of the survey before the intervention showed that the medical students’ and doctors’ knowledge on cancer was satisfactory but they lacked most skills in preventive work, moreover their attitudes towards cancer were defensive. The cancer training model comprises training that provides knowledge and skills that could be used effectively in community medicine. By the end of the training not only the participants’ knowledge but their attitudes also improved.

Conclusions: A public health problem oriented curriculum development can only be effective if the graduate and postgraduate training is harmonised and both trainings aimed at improving the professionals’ skills and attitudes.

80/P8 The potential dual function of health promotion teaching in the core curriculum: findings from a student survey
Ann Wylie*, Libby Medina (King’s College London, Dept of General Practice & Primary Care, 5 Lambeth Walk, London, SE1 6SP, United Kingdom)
Background: Health promotion teaching is part of our core curriculum. This paper reports on survey findings from Year 4 students at King’s School of Medicine regarding their health needs, behaviours and attitudes. This cross-sectional study is part of a longitudinal study in collaboration with Monash Medical School exploring the impact of health promotion teaching.

Work done: A 22-item questionnaire was developed for students at the start of their academic year with 84% response rate (n=337). Students received health promotion teaching at the end of Year 3, 12 weeks previously, about supporting patient behaviour change, which was assessed. The questionnaire data were analysed using SPSS.

Results: Respondents identified health related needs including unhealthy lifestyles (21%), medical conditions (14%) and mental health issues (7%). Respondents reported behaviours harmful to health, including alcohol consumption (31%), poor diet (20%) however, 76% reported they had tried to change their lifestyle to improve their health for example increasing physical activity (61%). Further analysis of the data is on going.

Conclusions/Take-home message: This survey identified potential benefits for students’ own health as an additional outcome of the core health promotion content which continues throughout Year 4 focusing, in part, on their own health and well being.

80/P9 Teaching the concept of Humanized Health Care for medical students
Satang Supapo*, Somkid Lendsin-udom, Sirijitt Wassanawatana (Khon Kaen Medical Education Center (KKMEC), Khon Kaen Regional Hospital, Srichan Road, Nai Mueang, Muang, Khon Kaen, 40000, Thailand)
Background: Humanized Health Care (HHC) was introduced recently in the medical teaching which encourages students to provide empathic service using an holistic and patient-centered approach. This study aims to identify effects of the teaching concept of HHC using good role model and reflective group discussion.

Work done: Views of HHC was introduced to 36 sixth-year medical students in 3 sessions via lecture regarding good role models and experience given by their seniors who did voluntary work. Reflective group discussions were conducted to allow them to express their attitudes of patient caring. Outcomes as to how they cared for patients were examined through questionnaire and case reports.

Results: Most of the students can conceptualize the meaning of HHC; however benefits of HHC were rarely mentioned. Most of the students (85%) wished to pay more attention to their patients, 60% of them completed their case reports that showed good will to humanize their practice. Four voluntary projects were created by the students, and 87.5% of them reported that the concept convinced them to work more dedicatedly.

Conclusion: The concept of HHC can be taught effectively using recognition of good role models and reflective group discussion, and the students showed their appreciation, understanding and applicability of HHC.

80/P10 Creating a national network to improve genetics education
Jonathan Berg*, Mary Porteous, on behalf of ScotGen (Ninewells Hospital and Medical School, Department of Clinical Genetics, Dundee, DD1 9SY, United Kingdom)
Background: Recent advances in genetic medicine have greatly increased the requirement for education in genetics for all health care practitioners. Resources for teaching clinical genetics are limited, as the majority of clinical experience is concentrated in a small number of specialist centres.

Work done: In order to improve access for all health care professionals to relevant genetic education, we have developed a network of professionals involved in the teaching of genetics within the NHS, The Scottish Genetics Education Network (ScotGEN). ScotGEN has developed learning objectives for healthcare professionals, with case studies and learning objects designed to assist in meeting these objectives. The network is open to all healthcare professionals involved in the teaching of genetics.

Conclusions: Creating an education network in Scotland has allowed teachers from a range of backgrounds, including nursing, midwifery, genetic counselling and clinical genetics to work together and develop learning objectives, with supporting materials, that are appropriate to a range of healthcare practitioners in both undergraduate and post-graduate settings.

Take-home messages: Multidisciplinary networking can be effective in supporting education in a specific domain of healthcare, particularly where there is an increasing demand in a subject matched by limited resources.

80/P11 From clinical practice to education: developing national genetics competences to inform health professional training
Catherine Bennett*, Sukvinder Kaur, Emma Tonkin, Jo Haydon, Angela Daly, Lynne Gough, Ann Eaton, Peter Farrndon (NHS National Genetics Education and Development Centre, Morris House, c/o Birmingham Women’s Hospital, Edgbaston, Birmingham, B15 2TG, United Kingdom)
Background: Genetics is often regarded as a science but at its heart are patients with or at risk of genetic conditions. Genetics now impacts on the practice of many healthcare professionals. This has implications for education and training. Knowledge of desired outcomes – those genetic activities relevant to clinical practice - allows targeted educational initiatives to be developed.
Work done: The UK's NHS National Genetics Education and Development Centre worked with Skills for Health to develop competences for genetics in clinical practice for non-genetics healthcare staff. Over fifty health professionals representing more than 20 healthcare groups identified genetic activities in their patient pathways and the underpinning knowledge and understanding, resulting in a framework of nine competences. A consultation involving 120 health professionals and organisations tested the validity and application of the competences.

Results: Forty nine detailed responses were received (41%), indicating that the competence framework was complete and relevant to practice.

Take-home messages: The Centre is supporting the implementation of the competences nationally in clinical practice and education, in partnership with health professionals, educators and statutory bodies. This work illustrates how competences developed by health professionals can form the basis of an outcome-based education strategy (www.geneticseducation.nhs.uk)

80/P12 Good Work in Medicine conceived through the life of Oliver R Avison M.D. of Korea

Sook-hee Ryue (Department of Medical Education, Yonsei University College of Medicine, Seoul, Korea, 134 Sinchon-Dong Seodaemun-Gu, Seoul, 120-752, Republic of (South Korea))

Background: What is the meaning of Good Work in medicine for the individual medical doctor, society, and medical area? I explored the real meaning of the good work in medicine by analyzing Oliver R Avison's life. Oliver R Avison M.D. founded Severance Hospital and the college; the first modern hospital and medical school in Korea.

Work done: First, Avison's achievements were analyzed. Second, to explain the causes of M.D. Oliver R Avison's professional growth, the MI-IDF (Multiple Intelligence – Individuality – Domain – Field) Model was used. Avison's professional development in medicine was divided into 4 stages: Medicine motivating stage, Medical Training stage, Good doctor, and Great doctor stage. The final stage is the 'Great doctor stage,' in which Avison tried to create and form the Domain and Field for modern medicine in Korea.

Conclusions/Take-home message: To do good work in medicine, a medical student is encouraged to understand his unique potential as a medical worker, and try to understand problems in established domains and fields of medicine, and create and reform a new symbol system, and field climate.
8P/P3  User opinions of multi-source feedback in the UK Foundation Programme
Bryan Burford*, Jan Illing, Tim van Zwanenberg, Moira Livingston, Charlotte Kergon, Gill Morrow (Newcastle University, Postgraduate Institute for Medicine and Dentistry, 10-12 Framlington Place, Newcastle upon Tyne, NE2 4AB, United Kingdom)

Background: The use and importance of multi-source feedback (MSF) in UK medical education has grown in recent years, but little work has looked at the views of people using MSF (trainees, the raters providing feedback, and supervisors).

Work done: Trainees, raters, and educational supervisors in the north of England were sent questionnaires in 2005 and 2006 asking their views on the usability and usefulness of MSF tools being used as part of the Foundation Programme (the first two years of postgraduate training). Questionnaires referred to different tools – a locally developed pilot tool in 2005, and TAB and mini-PAT, used on a national level, in 2006.

Results: Results indicated positive attitudes to MSF in principle, but less positive views of the effectiveness of the specific tools. Likelihood for formative feedback (to develop learning), was seen as greater than for summative purposes (with a pass or fail outcome), and free text feedback seen as more useful that rating scales. Many raters reported using evidence other than direct observation of a trainee’s practice to give feedback, for example discussion with colleagues.

Conclusions/Take-home messages: Issues of perceived effectiveness, and the variability of the basis of feedback, must be addressed if the reported reliability of MSF tools is to be maintained.

8P/P4  Challenges in delivery of Foundation programme teaching curriculum in a district general hospital – reflections of a Foundation Programme Training Director (FPTD)
Kirita Mukherjee* (Medway Maritime Hospital, Level 3 Green Zone, Windmill Road, Gillingham, ME7 5NY, United Kingdom)

Background: The operational framework of the Foundation programme enshrines delivery of the curriculum for Foundation trainees. The Foundation School encourages setting up a Faculty for delivery of this programme. The author is an FPTD and has used reflective practice to identify the challenges in delivery of the curriculum.

Work done: Trainees’/Trainers’ feedback from the teaching programme and Faculty meeting discussions were used for reflection, evaluation of practice and identification of challenges.

Results: Challenges identified are: (A) Trainee issues – teaching inappropriate for learning needs, imbalance between clinical and generic teaching, lack of interaction, repetition of topics, lack of teaching experience of Faculty, didactic lectures, work pressure, rota inflexibility; (B) Trainer issues - time constraints, lack of understanding of the curriculum, inability to use new educational methods of teaching; (C) Infrastructure issues - resources, materials for handouts, departmental support.

Conclusions/Take-home messages: Foundation programme teaching is delivered through multiprofessional faculty. To make this more effective and successful, the local faculty needs to engage more with trainees via their representatives who need to be adequately trained for feedback. Deanery support for rolling educational training for consultants is vital for its success and local champions need to be identified. Service pressure and its implications need to be fed back to local management.

8P/P5  The Learner Pathway: curriculum development for the Foundation Programme
Zoe-Jane Playdon*, Pam Shaw (KSS Deanery, University of London, 7 Bermondsey Street, London, SE1 2DD, United Kingdom)

Background: The Foundation Programme, a new competence-based national curriculum framework for the first two years of PGME, takes learners through six four-month jobs in different clinical areas.

Work done: Questions have arisen about how the F2 experience is different from the F1 experience, and how the expectations of F2 doctors should be different from those of F1 doctors. KSS Education Department set up a small scale project to examine the Learner Pathway, with a view to identifying ‘ages and stages’ in the Foundation Programme.

Results: (1) Three stages of development were identified for F1 doctors, leading to them being signed off at the end of F1; (2) Following this, a set of expectations for F2 have been identified, which contextualise the competence-base in research, management and career choice.

Conclusions: While a competence-base is essential to identifying required skills and knowledge, it can easily lose context. An holistic view of ‘what kind of a doctor’ is also required.

Take-home messages: After the necessary fragmentation of creating a competence base, it is essential to ‘think back to the whole’ to complete the process of curriculum development.

8P/P6  Creating Local Faculty Groups in NHS Trusts to implement Modernising Medical Careers
Zoe-Jane Playdon*, Pam Shaw (KSS Deanery, University of London, 7 Bermondsey Street, London, SE1 2DD, United Kingdom)

Background: In November 2004 UK Deaneries were required to establish new Foundation Programmes in NHS Trusts, by July 2005. KSS set up an innovative Local Foundation Programme Faculty Groups in its NHS Trusts, to combine staff development with curriculum implementation.

Work done: In 2006, KSS Education Department commissioned an external evaluation of its implementation of the Foundation Programme, as part of its quality assurances processes. The evaluators: (1) described the context against which implementation took place; (2) identified the main strengths of the implementation strategy; (3) recommended future action.

Results: The evaluation highlighted the creation of a Local Faculty Group in each NHS Trust as highly successful practice. This short communication describes: (1) the process of negotiating and setting up Faculty Groups; (2) their organisation and remit, including their contribution to multiprofessional working and learning; (3) their development into an Education Governance structure for MMC in KSS; (4) the creation of a Best Practice Guide for their operation.

Conclusions: An appropriate structure for academic governance is required to support local curriculum implementation for MMC

Take-home messages: Mainstream HE practices, translated into a postgraduate medical context, can provide innovative means of supporting and managing medical education.
8P/P7 Are newly qualified medical graduates prepared for practice? A study in the Trent Deanery area of England
David Matheson*, Catherine Matheson (University of Nottingham, Medical Education Unit, Queens Medical Centre, Nottingham, NG7 2UH, United Kingdom)

Work done: This work surveyed newly qualified (F1) doctors, registrars, consultants, ward managers and other healthcare professionals across the Trent Deanery area of England on the preparedness for practice of new medical graduates. Samples of each survey group were interviewed as were various employer representatives. In addition, focus groups were run with samples of F1s.

Results: Depending on the specialism they were in, F1s felt themselves either to be key players or largely superfluous. Their colleagues' view of F1s seemed largely dependent on what they knew about the Foundation Programme itself or on the opinion held of it by senior members of their department. Almost universal was a concern that F1s came with insufficient skill in mundane medical tasks and procedures such as venepuncture, cannulation and catheterisation but especially lack of skill in aseptic techniques.

Conclusions: Knowledge of the Foundation Programme lies at the heart of the debates over the new doctors. There are concerns over their preparedness for practice but these are not as universal as suggested by the UK GMC's (2006) 'perception that medical graduates are unprepared for the first few years of practice relates to poor performance or lack of knowledge.'

8P/P8 Modernising Medical Careers (MMC) – are we happy?
Adrian Blundell* (Sherwood Forest Hospitals Foundation NHS Trust, King's Mill Hospital, Mansfield Road, Sutton in Ashfield, NG17 4JL, United Kingdom)

Background: There is currently low morale within the NHS and much uncertainty with regard to job security and training. Introducing further assessments is putting increasing pressure on busy clinicians. The aim was to survey a group of Specialist Registrars (SpRs) in geriatrics to determine their view of the current situation.

Work done: A questionnaire was completed by mid-Trent SpRs after a pilot knowledge based assessment in 2006. The survey canvassed opinions on topics such as the effect of shift working, consideration of alternative careers and opinions on aspects of the future changes. 16 SpRs completed the survey (14 male).

Results: The general feeling was that the proposed changes in medical training had not been adequately communicated. The majority felt that shift work had a negative effect on training and both continuity and quality of patient care. A quarter of respondents had considered leaving medicine and half had considered becoming a GP.

Conclusions/Take-home messages: SpRs are concerned with the uncertainty of many of the proposed changes that are due to be implemented with the introduction of MMC. This uncertainty along with further proposed assessments could lead to increased difficulty in recruitment for hospital specialities.

8P/P9 Implementation of modernised postgraduate programs: the need to meet ????
Hanneke Mulder*, J A M van Diemen-Steenwoorde, Cor de Kroon (UMC Utrecht School of Medical Sciences, HB 4.05, P.O. Box 85000, Utrecht, 3508 GA, Netherlands)

Background: The Dutch curricula for resident training in paediatrics and obstetrics/gynaecology have been modernised according to the CanMEDS 2000 model. On January 1st 2007 the In VIVO project has been launched for the implementation of these curricula in all training hospitals by local implementation teams. The first priority of the national project team was to examine the needs of the local teams.

Work done: All implementation teams stressed the need to meet the other teams in order to exchange experiences. Therefore an 'open space' meeting will be organized in April 2007 for all members of the implementation teams: paediatricians, obstetricians, residents and educational experts. About 15 different sessions will be scheduled, based on questions and experiences the local teams want to share.

Conclusions: Exchanging experiences between implementation teams is essential in successful nationwide implementation of modernised resident training programs. 'Open space' meetings, in which participants create and manage their own agenda of parallel sessions, seem a powerful instrument to realize this.

Take-home messages: We will offer tips about how to organize an 'open space' meeting and present our results: the most urgent questions and problems the local implementation teams are confronted with and their most creative answers and solutions.

8P/P10 Reliability of an academic ranking procedure for qualifying medical students
J A Patterson*, C M Roberts, B Hewitt (Barts and the London, Queen Mary's School of Medicine and Dentistry, The Old Medical College (Garrod) Building, Turner Street, Whitechapel, London E1 2AD, United Kingdom)

Background: The Medical Training Application Scheme (MTAS) is the UK's national application scheme for placing newly qualified doctors in their first post-graduate post. From 2006, the selection process required that UK medical schools rank students entering the final year of study into quartiles on the basis of academic performance. The choice of measures used in ranking was left to each medical school and practice has varied. At Barts and the London, we chose to use the unweighted, average score obtained in the twelve, end-of-year examinations covering the first four years of study.

This paper will give details of the assessment profile and show how individual assessments for the 2007 graduating cohort correlate with the students' final scores for ranking. Extended Matching Question papers correlate best with overall performance, and those early in the course seem to have quite good predictive validity. OSCEs, while important in determining competence for practice, correlate less well with overall academic performance. The question arises: have we used a reliable and fair method for ranking academic performance? A Cronbach’s-alpha analysis, treating the twelve examinations as a 12-item test, gives an alpha of 0.92 indicating that the assessment profile is reliable in terms of internal consistency and is a fair basis for ranking a cohort into quartiles.
Can junior doctors make an informed career choice?
Helen Goodyear*, Clare Kennedy, David Wall (West Midlands Deanery, 97 Vincent Drive, Edgbaston, Birmingham, B15 2SQ, United Kingdom)
Background: Modernising Medical Careers (MMC) has brought about changes in junior doctor training. We felt it important to seek junior doctor views on advice given to date.
Work done: A questionnaire was sent to all trainees in foundation years 1 and 2 (841) in the West Midlands Deanery. Trainees scored the quality of careers advice on a Likert scale ranging from 1 (not at all useful) to 5 (very useful). Other questions looked at sources of advice, knowledge of MMC and demographic data.
Results: Questionnaire response rate was 60% (508/841). There was no significant difference in careers advice from any source by gender (p>0.05) although some notable differences in specialty choice. 93% of foundation trainees had received informal careers advice, 67% advice from hospital educational supervisors and 55% from Postgraduate Clinical tutors. The usefulness of this advice was given a mean score of 3.74, 3.66 and 3.48 respectively. Only 50% of the trainees had received careers advice at medical school. 74% said they had little knowledge of MMC.
Conclusions: Take-home messages: It is important that junior doctors have targeted careers advice beginning at medical school but especially in the foundation years as they face decisions regarding specialty training.

Can less be more? Reducing doctors’ working hours while enhancing education and training
Richard Higgins*, Simon Mallinson (East Midlands Healthcare Workforce Deanery, 4 Smith Way, Grove Park, Leicester, LE19 1SS, United Kingdom)
Background: The European Working Time Directive (EWT) requires a maximum 48-hour working week for doctors in training by 2009, presenting a tremendous challenge for UK hospitals. Not only must working patterns be reconfigured to meet this target, but service demands must continue to be met and high quality training preserved.
Work done: The East Midlands Healthcare Workforce Deanery, in conjunction with Northampton General Hospital, has undertaken a pilot project (funded by National Workforce Projects) to find solutions to EWT 2009. The pilot focuses on weekend working, drawing on new practitioner roles to allow duties previously undertaken by junior doctors to be undertaken by other healthcare workers. While this will help achieve EWT compliance by reducing doctors’ weekend commitments, it will also mean less time for training. However, it is anticipated that training will be maximised by concentrating doctors’ hours into the weekday daytime period, when education opportunities are greater (e.g. for greater consultant supervision). This session presents project results (using quantitative and qualitative pre/post measures) on the impact of changes to working patterns on education and training. Ways in which the quality of postgraduate medical education can be improved in the face of legal requirements to reduce working hours are identified and discussed.

The process of introducing a reform in postgraduate education: promoting and impeding conditions
Gunver Lillevang, Charlotte Ringsted, Lasse Bugge, Henning Beck (Center for Klinisk Uddannelse, Rigshospitalet Afsnit 5404 (Teilumbygningen), Blegdamsvej 9, København Ø, 2100, Denmark)
Background: In Denmark a reform in postgraduate education was introduced by the National Board of Health to develop new postgraduate curricula including the principles of 1) outcome-based education, 2) the CanMEDS competency framework and 3) in-training assessment.
Work done: The aim of the study was to describe how faculty developing postgraduate curricula experience the task and to identify which conditions promote or impede the process of developing curricula. A questionnaire survey and an elaborating telephone interview were conducted. Seventy-six persons representing 38 medical specialities were asked about their perceptions about the process.
Results: Promoting factors identified included: motivation, ownership of the required change, written guidelines, seminars and advisors in the process. Factors perceived to impede the process included weak educational support, changing and inconsistent information, poor introduction to the task, inexpedient replacement of advisors and stressing deadlines.
Conclusions: The identified impeding factors were not unexpected. Chaos and confusion at the beginning of a process is a well-known common condition and narrow time limits are stressful.
Take-home message: It was found in this mandated process, that the top needs to be clear in their communication and needs to be aware of supporting understanding and motivation throughout the system.

Assessing resident physicians’ identification of and reflection on improvement opportunities in clinical practice
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Background: Internal medicine residents must demonstrate competency in Practice-based Learning and Systems-Based Practice, which require skills in personal and systems improvement. Reflecting on practice and identifying improvement opportunities are fundamental to quality improvement. We are unaware of methods for assessing residents’ reflections on clinical practice and descriptions of improvement opportunities.
Work done: Internal medicine residents at Mayo complete a structured Practice-Based Improvement Log (PBIL) biannually. The PBIL solicits reflections on adverse events encountered during training. We developed a PBIL Assessment Tool (PBIL-AT) designed to evaluate the quality of resident reflections on adverse events. This instrument, developed through an iterative process, is comprised of 19 items rated on 4-point scales that assess four domains: problem merit, definition of the improvement opportunity, reflection on personal practice, and reflection on care systems.
Conclusions: The PBIL-AT has been valuable for assessing residents’ identification of significant practice or systems problems and their critical reflections on these issues. Initial validity evidence includes content derived from national guidelines and revision by a panel of Mayo experts. Ongoing research includes determination of PBIL-AT score reliability.
Take-home message: The PBIL-AT is a new instrument that with further study may be useful for assessing resident improvement logs at other institutions.
8P/P15 The Balanced Score Card: a tool for commissioning and benchmarking postgraduate medical education
Sally J Davies*, Mandy Martin, Howard L Young, Melanie J T Jones (School of PGMDE Wales College of Medicine, Cardiff University, Heath Park, Cardiff, CF14 4XN, United Kingdom)

Background: The Balanced Score Card (BSC) is a tool for performance management and comparative benchmarking against targets. The Wales Assembly Government uses this tool in the management of the National Health Service in Wales and so postgraduate training providers (NHS Trusts) are familiar with the concept.

Work done: The Wales Postgraduate Deanery developed a series of questions circulated to all Postgraduate Training providers in 2006. 5 general performance targets were set, with a total of 12 subareas, and 17 areas of supporting evidence. All targets were deemed essential for delivery of high quality medical training e.g. “a written and recorded appraisal system is in place”. Targets were consistent with the standards for Postgraduate Medical Education set by PMETB (The Postgraduate Medical Education and Training Board). Each target was graded green (achieved), amber (partially achieved) or red (not achieved). Providers of postgraduate training also provided feedback on the usefulness of the BSC in identifying areas of good practice or where attention was required.

Conclusions: The BSC is a useful tool in commissioning and quality assurance of postgraduate training.

Take-home messages: The commissioner of PG education can use the BSC to continuously improve the performance of postgraduate training providers.

8P/P16 Quality Assuring Foundation Training in the North Western Deanery
Jon Miles, Dan Powley*, Phil Boulton (North Western Deanery, 4th Floor Barlow House, Minshull Street, Manchester, M1 3DZ, United Kingdom)

Background: We have previously described the development of an IT tool, Horus-FP to quality assure foundation training. Whilst awaiting the publication of the GMC/PMETB QA document we have attempted to standardise data collection from our host institutions.

Work Done: From August 2006 this package went live within the North Western Deanery as the primary means of quality assuring foundation training. In addition Horus-FP supports e-portfolio properties for foundation trainees. Over 400 trainees with their supervisors and 19 foundation administrators have been using the system. foundation teaching has been evaluated using Horus-FP in all bar 4 health economies in our Deanery.

Conclusions: Within 6 months of going live 96% of all foundation trainees had entered at least one assessment and appraisal onto the system. Standardised data exists throughout the NW Deanery regarding assessments, appraisals and teaching.

Take-Home messages: Focusing a software package on meeting QA requirements for foundation training does not detract from its ability to run as an e-portfolio. We have a system that will be easily adaptable to the QA requirements laid out by the GMC/PMETB paper.

GIME

8R Good Ideas in Medical Education (GIME):
Session 2 – Teaching, Learning and Assessment

For abstracts see 6R.

Short Communications

8S Continuing Medical Education / Continuing Professional Development

8S/SC1 RCPCH audit predicts deficient internal CPD evidence for recertification
A P J Thomson, A Emerson and Royal College of Paediatrics and Child Health (RCPCH) CPD Department (c/o Royal College of Paediatrics and Child Health, 50 Hallam Street, London, W1W 6OE, United Kingdom)

Background/Aims: Recertification will require doctors to prove they are maintaining good practice (Good Medical Practice, GMC 2006). We aimed to find out whether paediatricians retain evidence of internal CPD activity (i.e. CPD occurring locally).

Work done: In 2005, at annual audit, 187 paediatricians (6.4% of scheme participants) were asked about available evidence of internal CPD.

Results: 145 records were submitted; only 118 respondents (78% and 63.1% of requested respectively) answered questions on internal CPD. Hard evidence available included (more than one response allowed); hospital attendance lists (63% of responses), personal notes (26%), handouts (22%), certificates (16%), and minutes (11%). Softer evidence included: a record of activities (23%), personal diaries (19%), copies of teaching programmes, and correspondence (8%). Only 37 (31%) claimed to have records of the minimum 25 internal CPD points.

Conclusion: Evidence of internal CPD is required for appraisal and audit – and in future for recertification. Career paediatricians retain low levels of evidence for internal CPD. Recertification reliance on CPD evidence may pose difficulties for early respondents.
Continuing Professional Development (CPD) for senior hospital doctors: reality of rhetoric?

Maria Tsouroufi*, Heather Payne (Cardiff Institute of Society, Health and Ethics, Cardiff University, 53 Park Place, Cardiff, Wales, UK, CF24 3PX, United Kingdom)

Background: Senior hospital doctors’ perceptions of CPD have only recently started to receive attention in medical education literature. This paper reports on senior hospital doctors’ drivers, strategies and types of CPD.

Work done: Life story interviews with 20 senior hospital doctors conducted in Wales in 2005.

Conclusions: Senior hospital doctors presented themselves as committed life-long learners with a strong interest in maintaining high professional standards and ensuring quality of patient care. The study findings indicate that career development and change of professional practice resulting from CPD were rarely on the agenda of senior hospital doctors. In line with traditional medical educational discourse, senior hospital doctors’ prioritised updates of medical knowledge and clinical skills over a plethora of CPD requirements and needs, resulting from doctors’ multi-faceted role. Senior hospital doctors showed preference for traditional learning methods of contested value, including reading, meetings and conferences. They also described CPD as an autonomous and unsystematic enterprise performed within rigid professional boundaries.

Take-home messages: Post-graduate Deaneries, NHS Trusts and Medical Colleges should identify a strategy that will actively promote senior hospital doctors’ learning about CPD. Evidence-based assessment methods and systematic evaluations of the effectiveness of CPD are also urgently required.

CME activities of medical journals: quality of MC-questions as evaluation tool

Lisa Kühne-Eversmann*, Claudia Nussbaum, Martin Reinke, Martin Fischer (University of Munich, Klinikum der Universität München, Medizinische Klinik Innenstadt, Ziemssenstr. 1, 80336 Munich, Germany)

Background: The participation of doctors in Continuing Medical Education (CME) activities provided by medical journals increases. Therefore their quality and efficacy needs to be evaluated.

Work done: This study evaluated the quality of Multiple-Choice Questions (MCQs) as an evaluation tool of CME activities in three German medical journals (Der Internist, Deutsches Ärzteblatt, Deutsche Medizinische Wochenschrift). In total 390 MCQs were reviewed using evidence-based principles of effective item writing.

Results: 164 (67.7%) of 390 MCQs contained flaws with 449 flaws in total. The proportion of flawed items was 60.8% in Deutsches Ärzteblatt, 63.3% in Der Internist and 77.9% in Deutsche Medizinische Wochenschrift. The most frequent flaws were clues (33.8%, Deutsches Ärzteblatt), negatively worded stems (29.8%, Der Internist) and unfocused stems (24.7%, Deutsche Medizinische Wochenschrift).

Conclusions: The problem of formal flaws in MCQs has an extensive relevance, as seen by the large number of studies related to this topic. The frequency of flaws (67.7%) was similar to recent studies. The distribution of the flaws suggests that with minor editing the quality of the MCQs could be substantially improved.

Take-home messages: The use of high quality MCQs is essential to invalidate the accusation of the trivialization of CME activities, irrespective of their social context.

AGIRPREV: A multi-facetted educational program supporting primary care teams in the implementation of cardiovascular prevention guidelines


Background: CME interventions developed to bridge the gap in prevention guidelines’ implementation tend to disregard problems associated with knowledge integration in the busy clinical environment.

Work done: To help primary care teams integrate cardiovascular prevention guidelines in their working environment, we have developed an innovative, multi-faceted program that provides, in addition to knowledge, practical tools and continuing support to the practice. GPs must first attend an interactive workshop for an update on guidelines. Then, their clinic is granted access to enablers and reinforcers that facilitate implementation in the workplace: nurses are trained to detect high-risk patients, sketch a relevant chart summary, prompt charts and insert a patient management reflexion on practice, and be alerted to changes by e-mail.

Conclusion: The project’s approach, which impact is being demonstrated in a random-control trial, illustrates how educators may increase the likelihood of sustained practice change.

Take-home message: CME can have a greater impact on healthcare outcomes if, in addition to knowledge dissemination, it facilitates and supports implementation in the workplace.

Best practices of public/private sector relationships in online CME

Fran Kirby*, Sharon Peters, Leslie Rouke* (Professional Development and Conferencing Services, Faculty of Medicine, Memorial University of Newfoundland, St. John’s, Newfoundland, A1B 3V6, Canada)

Background: Memorial University of Newfoundland leads a pan-Canadian consortium of 14 university CME offices in the design, development, delivery and evaluation of online CME programs via the MDcme.ca Web portal.

Work done: To provide programming via the MDcme Web portal, it has been necessary to partner with both the public and private sectors. The presenters have extensive experience in this area and will examine best practices in fostering partnerships among medical schools and leveraging each other’s expertise. Additionally, presenters will examine best practices in balancing partnerships with the public/private sectors. This will be examined through successes and challenges experienced with academic, government and industry partnerships.

Results: Following this session participants will have a greater understanding of: 1) best practices in partnering with the public/private sectors; 2) the potential pearls and pitfalls in partnering; and 3) how to build and sustain successful partnerships.
Conclusions: Through our public/private sector partnerships we have developed standards of practice for successful partnerships, while growing a revenue base and leveraging expertise.

Take-home messages: Forming partnerships is fundamental to the delivery of CME. Through the development of best practices in partnering, potential challenges that may arise in any stage of a partnership can be overcome.

**68SC6** The circle of influence of adults’ learning preferences

E M Castleman*, M M Nel (Foundation for Professional Development, PO BOX 74789, Lynnwood Ridge, 0040 South Africa)

Work done: (1) From a literature study it was concluded that adult learning preferences can be condensed to three dimensions: (a) adults are self-directed, take responsibility for their own learning and prefer autonomy in learning; (b) the need of adults to acknowledge their experiences; (c) the timing and content of adults need to learn. They want to learn when they need information and then the information should be relevant and they should be able to apply newly gained information in their life worlds. The question was how does it impact on providers of CPD? (2) The impact of adult learning preferences on the management of CPD by providers can be best illustrated if the circle of influence is considered as developed by the researcher. (3) In order to manage CPD for alumni, providers first need to know who the learners are, what they do, what they want to learn when and what experiences do they have as the core of the circle of influence. Therefore the management process starts with gathering information and managing the information. There should be a variety of CPD products to select from to satisfy the needs of all alumni. All CPD programs should be evaluated by alumni and have an assessment component to assure quality and sustain the purpose of CPD. (4) Adult learning preferences as the core of the circle influence need to be recognised by providers in every aspect of the management of CPD.

**8T/SC1** What is happening in European Standardised Patient programs – a pilot survey

Peter Cantillon*, Brian Stewart, Jean Ker, Karolien Haeck, Jim Bills, Jan-Joost Rethans (Department of General Practice, NUI, Galway, Clinical Science Institute, Costello Road, Ireland)

Background: Most medical schools in Europe have simulated patient (SP) programmes, but little is known about how European SP programmes have been developed, managed and quality assured. There are no dedicated European organisations that allow SP educators to meet, share ideas and resources.

Work done: A comprehensive, 49-item pilot survey instrument was developed and delivered electronically to SP educators in four European countries, (Belgium, Ireland, The Netherlands and Scotland).

Results: The survey achieved a 69% institutional completion rate. We found that most programs use SPs to teach and assess communication skills. Significantly fewer use SPs to teach physical examination skills. Most programs develop their own cases and do not share cases with other institutions. SPs are evaluated by staff and students but there is large variation in the quality assurance methods used. There was widespread agreement that a new European SP educator organisation should be launched to facilitate the exchange of new ideas and best practice.

Conclusions/Take-home messages: We found important differences in training methods and quality assurance approaches between SP programmes in a small sample of European medical schools. The establishment of a European SP educator organisation is likely to be both popular and important for the development of better SP programmes across Europe.

**8T/SC2** Perceptions of Simulated Patients and Simulated Patient trainers about Simulated Patients’ participation in physical examination in medical students’ training: findings from a national survey in Japan

Keiko Abe,* Kazuhiro Fujiyaki, Nobe Ban (Gifu University School of Medicine, Medical Education Development Center, 1-1 Yanagido, S01-1194, Japan)

Background: In Japan, most simulated-patients (SPs) participate in teaching communication skills but not in physical examination. The purpose of the survey was to explore perceptions of SPs and SP-trainers about their participation in physical examination.

Work done: Questionnaire survey to all SPs (n=532) and SP-trainers (n=59) in Japan.

Results: Response rates were 62% for SPs and 61% for SP-trainers (54 SPs who had experienced physical examination). Rates of non-experienced SPs, experienced SPs and SP-trainers who either “strongly agreed” or “agreed” that teaching physical examination involving SPs was more effective than without, were 76%, 98% and 73% respectively. SPs’ perceptions about physical examination varied depending on areas of the body examined. About 80% of SPs accepted examination of arms, head & neck and legs, but acceptance rate for chest, back and abdomen dropped to 25%. Acceptance rates varied significantly by gender (p<0.001) and age (p<0.001).

Conclusion: SPs recognized the value of participating in physical examination and experienced SPs were more so. Thus, a well-informed and phased programme, beginning with head, arms and legs, then progressing to abdomen and chest is recommended.

Take-home messages: Experience brings acceptance, therefore information is important in encouraging SPs to participate in physical examination.

**8T/SC3** Simulating the longitudinal physician-patient relationship

Tim Linsen, Jan-Joost Rethans* (Skillslab, University of Maastricht, PO Box 616, Maastricht, 6200 MD, Netherlands)

Background: The use of simulated patients (SPs) in teaching at medical schools is almost always limited to ‘single-case use’: a student has a consultation with a SP and receives feedback afterwards. The aims of this study were to explore the experiences of SPs acting as the same patient during four consecutive consultations with the same student (“GP”) and to assess possible differences with the regular programme.
8U/SC1 The learning experiences of doctors training for GP in Scotland

David Blaney* (NHS Education for Scotland, 11 Hill Place, Edinburgh, EH87DN, United Kingdom)

Background: Concern has been expressed in the literature about both the duration and adequacy of training for general practice. Literature review identified that there was limited knowledge of the learning experiences of general practice registrars (GPRs).

Work done: The aim of the study was to describe and interpret the learning experiences of GPRs. An interpretive methodology was adopted which involved three in depth interviews over time with two cohorts 24 GPRs, six GPR focus groups and six GP trainer focus groups.

Conclusions: The results were interpreted within the educational concept of the curriculum. Four main curricula were identified: formal, assessment, individual and hidden. Each independently contributed to the GPRs learning and also interacted synergistically at various times during the year. The individual curriculum (clinical experiences and in particular epiphanies) was the main driver of GPR learning. Epiphanies were identified by GPRs as having the most significant impact on their learning.

Take-home message: GPR learning during the year was an iterative process which involved a reflective and supported interaction between the GPR, their clinical experiences, epiphanies and their trainer. Through this process the GPRs became self directed and reflective learners and developed individual learning networks which led to changes in the way they practiced medicine. This process also led to the socialisation of their learning and promoted their integration into the culture of general practice, through which they were exposed to the working realities of life as a general practitioner and these experiences had a critical effect on their future career choice.

8U Postgraduate education: Training for General Practice

8U/SC1 The learning experiences of doctors training for GP in Scotland

8T/SC5 The effects of simulation-based and traditional training methods on midwifery students’ skill in delivering IUD services

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Background: Most BS midwifery students are not competent in delivering IUD services at graduation. Common training techniques assess knowledge rather than changes in learners' behavior and improvement of skills. To compare the effects of simulation-based and traditional training on midwifery students’ skill in delivering IUD services this study was conducted.

Work done: In this randomized controlled trial 56 eligible midwifery students were randomly allocated into simulation-based and traditional training and participated in a 12 hours workshop. The content was about delivering IUD services. In simulation-based training, students practice on models and interact with standardised patients additional to those used for the control group. All participants participated in an OSCE before and after the workshop. Total score was 204.

Results: In pretest, mean score in the control group was 74/46±9/0287 and in the study group 73/67±11/21 and there was no significant difference between groups (p=.77). In posttest mean score in the control group was 130/7±13/58 and in the study group 155/7±11/03 which had significantly better performance (p=.001). Each group had significantly better performance in posttest compared to pretest (p=.001).

Conclusions: Simulation-based training is an effective method in training delivering IUD services.

Take-home message: The use of this method in enhancement of other clinical skills must be considered and assessed.

8T/SC4 Criteria and standards for SP involvement in assessment: validity and the patient voice

A Armitage*, E Dalton*, N Jackson, A Khan, R Lane, D Muir, F O'Neill, J Symons (University of Leeds, School of Medicine MEU Level 7 Worsey Building, Leeds, LS2 9N, United Kingdom)

Background: Given the key role that simulated patients (SPs) play in undergraduate and postgraduate assessments and learning, attempts are being made to set standards for quality delivery of SP-based scenarios. This is often without reference to the patient voice within the SP or patient voices in the wider community, leading to questionable validity.

Work done: At Leeds Medical School a group has been working with the public to elicit patient and community voices, to inform a long-established, person-centred SP training and delivery model and to establish standards for this. At London Postgraduate GP Deanery, a partnership model of SP input into learning, assessment and recruitment has evolved. Observations, interviews, focus groups and reflective discussion are informing a critique of this work from a ‘patient voice’ perspective, allowing for mutual learning. Shared and differing values and practices are examined, in the context of personal, professional history and policy changes. Criteria and standards for ethical and effective work with SPs are being generated, to inform future recruitment, training and quality assurance.

Conclusions/Take-home messages: Patients’ input into assessment is required; it is possible to have valid, fair and robust input from a patient voice; working in partnership with patient voices is necessary to avoid unfair tokenism.

8T/SC4 Criteria and standards for SP involvement in assessment: validity and the patient voice

T Khadivzadeh*, F Erfanian, N Khadem, M Khaje Dalooyi (Mashad University of Medical Sciences, School of Nursing & Midwifery, Mashad, 3588, Iran)

Background: Most BS midwifery students are not competent in delivering IUD services at graduation. Common training techniques assess knowledge rather than changes in learners' behavior and improvement of skills. To compare the effects of simulation-based and traditional training on midwifery students’ skill in delivering IUD services this study was conducted.

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Conclusions: Simulation-based training is an effective method in training delivering IUD services.

Take-home message: The use of this method in enhancement of other clinical skills must be considered and assessed.
**8U/SC2** Assessment of adherence to guidelines in postgraduate training for general practice
A Kramer*, L Plas, A Smits, B Bottema and J Braspenninc (Voha, Postgraduate Training in General Practice, Postbox 9101 Nijmegen, Kapittelweg 54 Nijmegen, 6500HB, Netherlands)

Background: Investigation of the acceptability, the feasibility and the effect on learning behaviour of an assessment procedure focusing on adherence to guidelines in daily practice.

Work done: The trainees registered themselves clinical decisions they made in a consultation. We tested performance using an automated database. The trainees received feedback 4 weeks after registration. They reflected on knowledge and adherence by completing a self-reflection questionnaire and by discussion with peers and GP-trainers. We evaluated the effect on learning and the feasibility and acceptability with a questionnaire and by discussion with trainees and teachers.

Conclusions: Self-registration and self-reflection was accepted and feasible. The trainees found that it gave insight in knowledge and performance, that it stimulated studying guidelines and that it improved adherence. They did not use the feedback. It came too late and was not precise enough.

Take-home messages: Trainees like to register and assess their performance themselves. The next step, external evaluation does not occur. Apparently, the instrument does not lend itself to that because it is too complex to fit into daily practice and too detailed to discuss later on. Therefore, we recommend for work-based assessment to focus on a more integrated and simple evaluation of performance, for instance by expert judgement.

**8U/SC3** The effects of an educational intervention based on the modified Prochaska model on GPs' knowledge and attitude
M Shirazi*, S Parikh, M Sadeghi, A A Zeinaloo, A Sabouri Kashani , M Arabi, F Alaeddini , K Lonka, R Wahlstrom (Karolinska Institutet, Karolinska Institutet, 12345, Sweden; Tehran University of Medical Sciences; Toronto University)

Background: The purpose is to assess GPs’ level of knowledge and attitudes regarding depression disorders before and after the educational intervention. Their level of knowledge and attitude will be compared in the interventional and control group.

Work done: 192 doctors agreed to participate and completed the Modified Prochaska Questionnaire (MPQ) in pre-assessment. Only results related to doctors’ knowledge and attitudes regarding depressive disorders are reported. The validity and reliability of the knowledge and attitude questionnaires were assessed in the first study. The content validity was asserted by the experts’ opinions. The questions’ difficulty index and discrimination index were calculated. With respect of those results the experts modified the questionnaires and omitted and modified some of them. The final knowledge and attitude versions consisted of 7 MCQ, 11 Likert and 4 essay questions. The attitude questionnaire had 11 Likert items. The post-assessment was done one month after the intervention by sending trained messengers to the GP’s office.

Results: The results show that the doctors’ knowledge in the intervention group was significantly higher than in the control group but there was no significant difference between the two groups in relation to attitudes.

Conclusions/Take-home messages: Doctors’ knowledge changes by holding a two day course but their attitude is much harder to change than knowledge. It needs more time.

**8U/SC4** CME effectiveness in clinical practice guidelines implementation by primary care physicians: a randomized-control trial
R L Thivierge, R Laprise, G Gosselin, M Bujas-Bofanovic, S Vandal, D Paquette, M Luneau, P Julien, J Desaulniers, P Maltais (Université de Montréal, POB 6128 Downtown Station, Montréal, H3C 3J7, Canada)

Background: Numerous studies have revealed that only 20% to 61% of high-risk cardiovascular patients are treated according to clinical practice guidelines (CPGs).

Work done: 122 GPs were recruited in Quebec (Canada). After attending a 2h interactive workshop (dissemination), half were randomly assigned to the intervention group. This group was provided with a nurse who: 1) reviewed charts of patients ≥ 55 y with an upcoming visit from Feb. to Aug. 2005, 2) labeled charts of potentially undertreated patients (enabling), and 3) enclosed a chart summary and treatment algorithm (reinforcement). Control GPs practiced as usual during this period. Changes in performance during the intervention period were assessed retrospectively in both groups using chart audit for consenting patients.

Results: Screening of 16,050 charts revealed that 35% of patients ≥ 55 y were at high risk and that 69% of these were potentially undertreated according to CPGs. The retrospective chart audit of patients that were potentially undertreated at baseline demonstrated that the intervention significantly improved CPGs implementation and that the size of the impact varied according to specific guidelines studied.

Conclusions/Take-home messages: CME providers can improve CPGs implementation if they go beyond dissemination and include in their interventions strategies that facilitate knowledge integration in the practice.

**8U/SC5** Effects of different forms of continuing education on factual knowledge of General Practitioners about heart failure – evaluation of a randomized controlled trial (RCT)
F Peters-Klimm*, T Mueller-Tasch, J-H Schultz, C Nikendel, A Moeltner, A Barth, N Holzapfel, A Remppis, J Szczeny, J Juenger (Department of General Practice and Health Services Research, University of Heidelberg hospital, Vossstrasse 2, 69115, Germany)

Background: To evaluate the effectiveness of an innovative concept for training General Practitioners (GPs) to improve the management of patients with congestive heart failure, the difference in factual knowledge of GPs was assessed in a RCT by multiple choice questions (MCQ) 6 months after training.

Work done: 17 GPs (intervention group I) participated in a multidisciplinary, interactive and didactic training course including standardized patient encounters. 15 GPs (intervention group II) received a didactic lecture by a cardiologist. A group of 13 GPs served as control.

A blueprint covering guideline content was used to generate 60 MCQs with cardiologic and psychosomatic content, which resulted in 40 MCQs after panel review. Applying objective criteria for item difficulty and discrimination, 26 questions remained for assessment (MCQ-test). Internal consistency of the MCQ-test was >0.7.
Results: GPs from intervention group I had significantly more correct answers in psychosomatic questions than GPs from the lecture or control group. Both intervention groups did not differ in cardiological questions but showed significantly better results than controls.

Conclusion/Take-home message: Factual knowledge (MCQ) of psychosomatic aspects concerning heart failure seems to be better comprehended if trained rather than taught while cardiological content was taught efficiently by lecture alone.

Short Communications

8V International medical education: Bologna Process

8V/SC1 The students’ perspective on the Bachelor and Master structure – results from the Bologna Process Meeting 2007

Maja Sidelmann Basnov*, Salmaan Sana* (VU Medical Centre, BK-46, 7-9 van der Boecherstraat, Amsterdam, 1081 BT, Netherlands)

Background: Each year the International Federation of Medical Students Association (IFMSA) and European Medical Students Association (EMSA) organise a workshop together to gain new knowledge about the Bologna process and develop policy papers on the Bologna Process. The implementation of the Bachelor and Master structure in medicine is a much-discussed topic and was the focus for the 2007 workshop.

Work done: We did a SWOT analysis of the Bachelor and Master structure of medicine and found the students’ perspective on this, focusing on possible problem areas and possible improvements for medicine. Guest speakers from other medical professions were invited to explain what competences a Bachelor of Medicine will need to continue on in these fields.

Results: The results include the students’ perspective on the Bachelor and Master structure in medicine and new knowledge about the choices and barriers a Medical Bachelor of Medicine will face after graduating.

Conclusion: We think it is time to focus on how to implement the Bachelor and Master structure in the best possible way. The workshop has provided new knowledge about the students’ perspective and the requirements a Bachelor of Medicine should meet.

8V/SC2 Weighing the chances and risks of Bologna

R Peter Nippert* (Medizinische Fakultät Westfälische Wilhelms-Universität Münster, von-Esmarch-Str. 54, D-48149 Münster, Germany)

Background: The Bologna Process has gained an extraordinary momentum. It will make it difficult not to comply to the basic requirements.

Work done: On the basis of a recent empirical study and subsequent presentations, the position of the Association of German Medical Schools (MFT) will be described and the consequences for medical schools in Germany will be outlined.

Conclusions: German Medical Schools are reluctant to introduce a two or three cycled structure for medical studies and support an exemption from the Bologna Process for medical education.

Take-home message: Together with other European medical schools, e.g. U.K., German medical schools ask for a postponement of the implementation deadline of 2010 in order to further discuss and scrutinise the consequences for medical education.

8V/SC3 Implementing the Bologna Process when creating syllabi for the Physiotherapy programme at Karolinska Institutet

Birgitta Nordgren*, Cecilia Fridén (Department of Neurobiology, Care sciences and Society, Division of Physiotherapy, 23 100, 141 83 Huddinge, Sweden)

Background: The physiotherapy programme at Karolinska Institutet has recently adopted a new curriculum to implement the Bologna process and its pedagogic intentions. The pedagogic profile is based on a humanistic view focused on student learning. Hence, the goal for teachers is to create a favourable learning environment where content, teaching methods and examination are aligned. The pedagogic view should go from teacher centred to student and goal centred.

Work done: To identify learning outcomes, the preparatory work focused on defining what we would like the students to know after finishing the course. Representatives from all semesters were contacted to obtain a natural learning progression. The Bigg’s SOLO taxonomy helped us describe the level of knowledge not only focused on facts but also where the student constructs his or her own understanding. The goals are trying to express what the student is expected to know, understand and relate to. The choice of verbs, nouns and adjectives describe the knowledge level. The biggest changes in the new curriculum are in course design, working methods and examination. The students will be scheduled less than before, which will encourage reflection.

Conclusion: We have created a new syllabus supporting a constructive view, which enhances student learning and reflective thinking.

8V/SC4 Erasmus exchange – measured success

Clive Roberts*, Matthew Ball (Bristol University Medical School, Centre for Medical Education, 39-41 St Michael’s Hill, Bristol, BS2 8DZ, United Kingdom)

Background: Bristol Medical School currently has 48 students participating in Erasmus exchanges.

Work done: Bristol students who are academically sound and in good health study two 9 week units abroad covering rheumatology, orthopaedics, emergency work, ophthalmology, cardiovascular and respiratory medicine and ENT from November to March in third year. Incoming students study third or fourth year units or a combination.
Results: 15 of 19 outgoing and 10 of 18 incoming participants in 2005-6 provided formal feedback. 12 outgoing students were completely positive, citing academic and social experience, clinical responsibility, improved maturity and motivation. Administrative and accommodation problems, lack of clinical teaching and support and failure to cover subjects were acknowledged. Participants scored somewhat higher than colleagues in assessments for units studied in Bristol but lower in those studied abroad. 8 incoming students were enthusiastically positive citing style and intensity of clinical teaching and clinical experience. All felt well supported but some complained about placement outside Bristol. One student was returned home because of inadequate English and 3 failed clinical assessments.

Conclusions/Take-home messages: Successful exchange depends upon close liaison between schools to ensure academic and pastoral needs. Academically sound, motivated students with language skills thrive and cope with inevitable compromise. The educational opportunity justifies the resource investment.

8V/SC5 Standardized assessment in an EU country of doctors from outside the EU
Theo M v van Berkestijn*, Ted Splinter, Olle Th Jetten Cate, Remco M Bezemer, Joost Dijkstra, Cornelius Postma (Committee Foreign Degree Holders Health Care of The Netherlands, P.O. Box 16114, The Hague, th.vberkestijn@minwzs.nl, 2500 BC, Netherlands)

Background: International mobility of doctors is a growing phenomenon. The EU-countries have no common procedures and standardized criteria for the recognition of foreign medical diplomas and the assessment of international medical graduates, in contrast with North-America. This may lead to large differences in recognition standards and consequently potential conflicts between EU countries, as recognition of a non-EU doctor in one country implies recognition in all EU countries.

Work done: The Netherlands have recently introduced an elaborate assessment procedure for doctors from outside the EU, consisting of tests of Dutch and English language, the Dutch health care system, communication-in-health care skills, knowledge of the relevant basic sciences, knowledge of clinical management and proficiency in clinical skills. Candidates who pass this assessment spend a 12 week term under supervision, in which professional behaviour is observed and recognition as MD is possible. Those who do not pass are referred to one of the medical schools for additional training to obtain a Dutch licence.

Conclusions/Take-home message: The Dutch procedure could inspire other countries to use a similar assessment procedure. Collaboration and standardization between the EU countries could help to solve discrepancies and make the EU a better controlled labour market in medicine.

8W Teaching and learning communication skills 2

8W/SC1 Knowledge is power – but who knows most?
Anne de la Croix (Interactive Studies Unit, Department of Primary Care and General Practice, University of Birmingham, Edgbaston, B152TT, United Kingdom)

Background: Linguistic research into doctor patient communication has proven to be very insightful. In this study, discourse analysis is used to look at the language used by third year medical students and role-players in an assessment of communication skills. Consultations of GPs and their patients were used to compare the role-play setting to a GP setting.

Work done: Assessments of communication skills have been videotaped and transcribed. Using discourse analysis, attention was given to linguistic manifestations of power such as asking questions, initiating topics, holding the floor, ending the conversation and so on. Results were compared to transcribed GP consultations.

Conclusions: The role-players acted as patients but frequently used powerful ‘GP-like’ language, whereas the medical students acted as clinicians and used less powerful, ‘patient-like’ language. Possible reasons for this apparent reversal of roles but could be categorised into: knowledge & experience, location & positioning and the element of assessing.

Take-home messages: Language can reveal power relations and the social context of speech. By studying linguistic manifestations of power, some conclusions about the nature of role-play can be drawn. Teaching and assessing by means of role-play might be improved upon.

8W/SC2 Communication (CS) skills in medicine: perceptions of future doctors
N D W Widanapathirana*, D D Samarasekara (Faculty of Medicine, Colombo, 078, Sri Lanka)

Background: Teaching of CS has become an essential part of medical curricula. Our aim was to review this training in Sri Lankan medical schools and obtain student insights on training, assessment and the practice of CS with a view of using this as a resource in planning future course improvement.

Work done: A descriptive cross-sectional study was done using a pre-tested self-administered questionnaire. This was given to the final year students of three leading medical faculties in Sri Lanka. An observational study was carried out on a randomly selected sample of ten final-year students from each faculty.

Results: The results indicated that at the start of a consult 17% greeted the patients, 7.2% introduced themselves and 31.2% obtained permission “always”. Introducing themselves, taking permission, explaining the purpose of the interview was “never” done by 13%, 7% and 11% respectively. Nearly 90% encouraged patients to ask questions and majority are “fairly confident” in handling challenging clinical situations. Ninety-two percent consider it important to learn communication skills, 50% prefer simulated and standardized patient interviews; 80% prefer clinically based assessment.

Conclusions: The students perceived the need to improve the current CS training.

Take-home messages: CS training must be part of the core content in the curriculum. Student feedback is important for fine tuning and improvement of the curriculum.
8W/SC3 Putting it all together: Constructing an evaluation grid for communication skills and cultural competence using a multi-modal framework
T J Jirasevijinda (Bronx-Lebanon Hospital Center & Albert Einstein College of Medicine, New York, NY10011, United States)

Background: Few tools currently exist for assessing communication skills/cultural competence (CS&CC). The Interactive Workshops On Communication & Cultural Sensitivity (IWOCCS) Program at the Bronx-Lebanon Hospital provides CS&CC training to Residents using interactive and peer-education models. The Program has used various tools to assess trainees’ competence in CS&CC.

Work done: (1) Construct a Multi-Modal Grid to measure CS&CC using Miller’s pyramid of competence; (2) Incorporate the learner into the evaluation process; (3) Introduce 360º assessment for CS&CC. The proposed Grid divides assessment into 3 areas: Knowledge, Attitudes and Skills/Behavior (table). Miller’s Pyramid’s levels of competence are shown on the left side. The Grid’s cells specify assessment tools/activities that integrate the 3 areas with Miller’s levels of competence.

<table>
<thead>
<tr>
<th>Does</th>
<th>Knowledge</th>
<th>Attitudes</th>
<th>Skills/Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shows How</td>
<td>1. Self, Peer &amp; Faculty Global Assessment</td>
<td>2. Assessment of teaching in the IWOCCS Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Assessment of resident-lead CS&amp;CC journal clubs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knows How</td>
<td>1. Assessment of responses to videotaped OSCE cases</td>
<td>1. OSCE as reflection tool</td>
<td>1. Group Feedback using videotaped OSCE of peers</td>
</tr>
<tr>
<td>Knows</td>
<td>1. Pre- &amp; Post-Tests</td>
<td>1. Pre- and Post-Tests</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions: (1) Multi-Modal evaluation process provides a more comprehensive assessment of CS&CC by addressing all levels of Miller’s Pyramid; (2) Learner can be incorporated into existing evaluation processes; (3) The process empowers different members of the health care team.

8W/SC4 Teaching effective communication to medical residents
Hannah Kedar*, Raphael N. Melmed (The Hebrew University, 26 Betar St., Jerusalem, 93386, Israel)

Background: In recent years, patients seek more information from physicians; they search the internet and come up with questions and doubts; on occasions they react aggressively to physicians. In addition, the current patient-centered approach requires physicians to improve their effectiveness in data-gathering as well as attaining patient compliance. The competent physician must develop effective communication skills to cope with these professional challenges. The purpose of the present paper is to suggest a model for teaching effective communication to residents.

Work done: A 1½ day workshop designed to teach effective communication has been offered over the past 5 years to each new cohort of residents in all disciplines, at a university teaching hospital. At the workshop, participants recorded difficult encounters with patients or their relatives, were taught a model of effective communication and role-played difficult encounters with patients. This was followed by feedback and group discussion.

Results: The evaluation data to be presented reflected a high appreciation of the workshop.

Conclusion/Take-home message: Results emphasize that effective professional communication skills can be taught in a post-graduate teaching seminar.

8W/SC5 Communication skills and job stress during medical internship
Are Holen*, T Anvik, A Barheim, O B Fasmer, H Grimstad, P Hjortdahl, T Nordhøy (NTNU - Faculty of Medicine, MTFS, Trondheim, NO-7489, Norway)

Background: The larger EKKO-study in Norway is looking at the status of communication skills of medical students in their final year and also, at possible changes later on, towards the end of the internship. The study is funded by the Norwegian government and run by the four medical schools of the country.

Work done: Relationships between self-rated job stress, and self-rated and observed ratings of communication skills towards the end of the internship were explored. Each participant interviewed a standardized patient for 15 minutes. Both information output and empathic handling of the session were assessed from videotapes.

Results: The assumption to be tested was whether experienced job stress would influence the amount of information exchange, and also, the qualitative aspects of doctor-patient interaction. Two different types of stress were identified, one was associated with hospital settings, the other was related to community settings. The levels of instrumental interactive skills increased while qualitative skills were just partially improved. More details from the findings will be presented. Implications of the study for the teaching of communication skills will be discussed.

8W/SC6 Evaluation of communication skills training and its relationship to clinical visits
S Turan*, S Uner, M Elçin, O Odabaşı, İ Sayek, N Senemoğlu (Hacettepe University Faculty of Medicine, Department of Medical Education and Informatics, Sihhiye, 06100, Turkey)

Background: The aim of the study is to evaluate the communication skills training program, and to investigate the relationship between communication skills and clinical visits.
Work done: This descriptive study was conducted at Hacettepe University Faculty of Medicine. There were 446 students in year II and III in the school. Stratified random assignment was used in the research and 216 students took part in the study. An evaluation form for communication skills in medical encounters was used to assess the behaviors of the students at three steps; pretest, progress test and posttest. Analysis of covariance, two way analysis of variance and paired-t test were used. Additionally, the qualitative data were collected from interviews with students and standardized patients.

Results: With pretest scores controlled, there was a significant difference between progress test scores, but not between the posttest scores. In the interviews, students and standardized patients were asked their perceptions of the program on the communication skills achievement. The answers were categorized under three headings: the effect of the program on achieving communication skills, the differences between the two consecutive SPEs, and the differences between the visitation sites.

Conclusions: The results of our study showed that the program was effective in increasing communication skills. We concluded that the differences in visitation sites should be taken into account when organizing the program.

Short Communications
8X Teaching and learning: The junior doctor as a teacher

8X/SC1 Another voice: the role of the junior doctor in supporting final year medical students
Richard Phillips*, Diana Kelly (King's College London School of Medicine at Guy's, King's College, and St Thomas' Hospitals, Sherman Education Centre, Thomas Guy House, Guy's Campus, London, SE1 9RT, United Kingdom)

Background: The final year undergraduate Medical Degree (MBBS) course at King's College London School of Medicine is an apprenticeship system, with around 400 students spending eight weeks each on clinical placements in Medicine, Surgery (in District General Hospitals) and General Practice & Community.

Work done: As part of a continuing and comprehensive review of the course, we have undertaken focus groups with students (reported AMEE 2005) and explored teachers' views (reported AMEE 2006). We now report the results of the latest evaluation. Graduates of the cohort 2004-5 were emailed with a pilot questionnaire in 2006, subsequently interviews are being conducted with a sample. The interviews shed light on the nature and importance of the role of the junior doctor in supporting the final year undergraduate. These doctors have not previously been much supported in this educational role, and their views not gathered.

We are expanding the questionnaire to include aspects of this role. 2006 graduates will be surveyed in May 2007. The quantitative and qualitative results from these two cohorts will be presented at conference.

8X/SC2 The Resident-as-Teacher educational challenge: A needs assessment at the National Autonomous University of Mexico
Melchor Sánchez-Mendiola*, Enrique Graue-Wiechers, Leobardo C Ruiz-Pérez (Universidad Nacional Autónoma de México, División de Estudios de Posgrado, Facultad de Medicina de la U.N.A.M., Circuito Interior, C.U. Col. Coyoacán, Mexico D.F., 04510, Mexico)

Background: The residents' role as educators is increasingly recognized, but there is a dearth of information about this subject in developing countries. The National Autonomous University of Mexico Faculty of Medicine has 50% of the population of residents in training in Mexico. This report describes the needs assessment for a resident as teacher program at our institution.

Work done: A needs assessment survey was developed and sent to our 7,685 residents, with a 65% return rate (4,929 surveys).

Results: The majority (92.5%) felt that their role as educators of medical students, interns and other residents was important/very important. More than 60% felt the majority of their learning came from other residents. 90% Agreed/strongly agreed that it was necessary to be trained in teaching skills. The themes to include in the educational intervention were identified, as well as the preferred educational strategies.

Conclusions: There is a large unmet need to implement and assess an educational intervention to improve the residents' educational skills in our postgraduate educational programs. Most of the perceived needs of residents are clinically oriented. They prefer traditional educational strategies.

Take-home messages: Resident as teachers educational interventions need to be designed taking into account local needs and resources.

8X/SC3 The senior resident as a teacher: Surgery vs. Medicine
E Nemr*, S Hlais, M Nasr, N Naccache, F Haddad, A Haddad (Saint-Joseph University Medical School, Achraieh, Beirut, 165207, Lebanon)

Background: In a previous study, we showed that the senior residents play a role as important as the attending physicians’ in teaching competencies to the junior residents.

This presentation aims to evaluate whether the respective role of the senior residents and the attending physicians differs between surgical and medical departments.

Work done: 51 junior residents answered the following question: “For each competence (medical knowledge, clinical skills, patient care, communication, team work, professionalism), what percentage came from your own initiative, your peers (other junior residents), senior residents or attending physicians?” Statistical analysis used paired student’s t-test.
Results:

<table>
<thead>
<tr>
<th></th>
<th>MEDICINE</th>
<th></th>
<th></th>
<th>SURGERY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Senior Resident</td>
<td>Attending Physician</td>
<td>p-value</td>
<td>Senior Resident</td>
<td>Attending Physician</td>
<td>p-value</td>
</tr>
<tr>
<td>Medical knowledge</td>
<td>11.19</td>
<td>18.48</td>
<td>0.0321*</td>
<td>22.15</td>
<td>18.15</td>
<td>0.1151</td>
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<tr>
<td>Clinical Skills</td>
<td>21.38</td>
<td>23.45</td>
<td>0.7247</td>
<td>40.00</td>
<td>25.00</td>
<td>0.0300*</td>
</tr>
<tr>
<td>Patient care</td>
<td>19.84</td>
<td>28.61</td>
<td>0.0493*</td>
<td>31.65</td>
<td>19.40</td>
<td>0.0028*</td>
</tr>
<tr>
<td>Communication</td>
<td>14.83</td>
<td>28.00</td>
<td>0.0204*</td>
<td>18.50</td>
<td>24.00</td>
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</tr>
<tr>
<td>Team work</td>
<td>23.10</td>
<td>20.07</td>
<td>0.4991</td>
<td>28.16</td>
<td>18.68</td>
<td>0.0171*</td>
</tr>
<tr>
<td>Professionalism</td>
<td>19.84</td>
<td>27.74</td>
<td>0.0816</td>
<td>25.25</td>
<td>23.25</td>
<td>0.7368</td>
</tr>
</tbody>
</table>

* p < 0.05 significant

Conclusions/Take-home messages: The senior residents play a role as important as the attending physicians’ in the training of junior residents, especially in surgical departments.

Therefore, residents should be offered a specific training in teaching activities with the priority given to surgical departments.

8X/SC4 Teaching and assessment of junior doctors by Specialist Registrars
M L Baroni*, L Pugsley (Leeds Vascular Institute, Leeds General Infirmary, Great George Street, Leeds, LS1, United Kingdom)

Background: Teaching of more junior trainees has long been considered part of the role of the specialist registrar (SpR), although this time is often not recognised in the weekly timetable. With the introduction of Modernising Medical Careers (MMC) and the European Working Time Directive (EWTD) there has been a simultaneous increase in the assessment workload, and a reduction in the working week. Our aim was to investigate whether surgical SpRs were making a substantial contribution to teaching and assessment and to see whether they were prepared for this role.

Work done: All general surgical SpRs in the Northeast Thames region were identified and a questionnaire was distributed at the annual training meeting, with electronic follow up on two subsequent occasions to non responders.

Results: Surgical SpRs make a significant contribution to the training and assessment of more junior colleagues. Many Surgical SpRs have yet to receive any formal instruction in the completion of the FY1 assessment tools, despite being actively engaged in the assessment process.

Conclusions: SpRs are an important teaching resource within the NHS, a fact that should be recognised. Failure to do so may lead to a reduction in educational activity as SpRs prioritise their own training in an ever decreasing working week.

8X/SC5 A survey of the junior doctor teaching activity in an East London psychiatry training rotation
Adrian Vos*, Angharad Ruttley* (East London and The City Mental Health NHS Trust, Tower Hamlets Centre For Mental Health, Burdett Road, London, E1 4DG, United Kingdom)

Background: Consultant doctors are the trainers of the next generation of specialist doctors. The GMC requires that those involved in teaching acquire the skills, attitudes and practices of a competent teacher. Specialist training must therefore incorporate the opportunity to gain these skills. Current guidelines for specialist training do not directly reflect this requirement.

Work done: We wished to ascertain the level of teaching activity by the junior doctors on the East London psychiatric training rotations. Following a search of the current literature we designed a questionnaire to explore what settings junior doctors were teaching in, the status of those being taught and whether those teaching had any formal training in education.

Conclusions: The results show that juniors are directly involved in teaching on both undergraduate and postgraduate education programmes. This suggests that junior doctors on this rotation demonstrate a commitment to the continuing professional development of medical staff.

Take-home messages: Teaching activity is currently an integral part of specialist medical training. The Impact of Modernising Medical Careers (MMC) on this is unknown therefore further evaluation of teaching activity is needed when MMC is up and running.

8X/SC6 The importance of structured formative feedback and learning styles in the development of reflective practice by medical educators
S R Greenwood* (University of Bristol, Centre for Medical Education, 39/41 St Michael’s Hill, Bristol, BS2 6DZ, United Kingdom)

Background: Reflective practice is becoming increasingly widespread in training programmes for medical teachers. There is little research, however, into supporting the learning of reflective practice or the role of individual learning styles to this process. The Teaching and Learning for Health Professionals programme (http://www.tlhp.bris.ac.uk/) has reflective practice as a central feature of its curriculum and assessment. Participants are given highly structured support in developing reflective practice through formative assessment of an optional draft assignment.

Work done: Data have been collected on 218 participants’ learning styles. Assessment scores were analysed by learning style, gender and course module.

Results: Overall, 87% of participants submitting a draft subsequently improved their scores (mean increase of 12.83 percentage points, SD=12.1, n=737 submissions). The data point to differences in module scores, related to learning style (Activist/Pragmatists initially scoring lower than Reflector/Theorists) and gender, which will be discussed.

Conclusions: Structured formative feedback improves professional learners’ assessment scores and greatly assists the development of reflective practice. The role of learning styles in this process is little understood and requires further research. Delegates will be able to observe, discuss and apply the benefits of our highly structured approach to formative feedback, enabling them to create similar schemes themselves.
8Y/SC1 The C.A.R.E. approach to student interest in Family Medicine
Perry A Pugno (American Academy of Family Physicians, 11400 Tomahawk Creek Parkway, Leawood, Kansas, 66211-2672, United States)

Background: It is an international phenomenon that student interest in generalist careers, especially family medicine, is declining. Today’s medical students are seeking careers in medical and surgical specialties with high income, controlled work hours permitting “life balance”, and the prestige attendant with being “a specialist”. What can be done to enhance student interest in a career as a family physician?

Work done: The C.A.R.E. framework provides a template for targeted initiatives to meet the diverse needs of differing student populations. The acronym stands for: C – Communication about the discipline of family medicine; Examples include articles in journals that respond to frequently asked questions from students, support for medical school “Family Medicine Interest Groups”, and a web site for medical students seeking information about family medicine. A – Admissions and “pipeline” programs: Examples include encouraging family doctors to participate in medical school admissions committees, outreach to minority populations, and initiatives targeting secondary school and pre-medical students. R – Role model programs: Examples include outreach and faculty development for community-based physician teachers, and mentorship programs for students. E – Educational interactions: Examples include curriculum development for pre-clinical and clinical exposure to family medicine during medical school, a directory of community-based preceptorships, and a student externship program.

Conclusions/Take-home messages: This specialty choice inventory can be used for students to find out which specialties best fit their interests and wishes, and may lead to an improvement in student career choice counseling. Also, the student data can be used by staff members for research into student specialty choice.

8Y/SC2 A Dutch online medical specialty choice inventory
Lars van der Plank*, Ellen Easton, Marc Soethout, Paul Oosterveld, Jany Rademakers, Olle ten Cate (UMC Utrecht, HB 4.06, P.O. Box 85500, Utrecht, 3508 GA, Netherlands)

Background: The University Medical Center of Utrecht and the VU University Medical Center of Amsterdam (the Netherlands) do collaborative research into factors that determine career choice of medical students. One project is to create an on line specialty choice inventory for medical students.

Work done: Questionnaires distributed to specialists representing 34 Dutch specialties provided us with statistically valid specialty data which were entered into a MySQL database.

A web based application was built that allows students to fill in an on line questionnaire based on the specialist questionnaire. The immediate feedback consists of a list of all specialties from best to worst matching specialty. For the three best matched, the three worst matches and for the student’s three preferred specialties, more detailed information is shown, including a numeric and visual representation of the discrepancy between the student’s answers and corresponding specialist’s answers.

Conclusions/Take-home messages: This specialty choice inventory can be used for students to find out which specialties best fit their interests and wishes, and may lead to an improvement in student career choice counseling. Also, the student data can be used by staff members for research into student specialty choice.

8Y/SC3 Medicine’s hidden curriculum: influences on students’ career choices
Penny Hansen*, Cheri Bethune, Diana Deacon, Marshall Godwin, Katrina Hurley, Allison Kirby (“Memorial University Faculty of Medicine, St. John’s, NL, A1B 3V6, Canada; Dalhousie University School of Medicine, Canada)

Aim: To explore the hidden curriculum that influence medical students’ choice of career.

Work done: We designed an open-ended questionnaire that four cohorts of students completed five times during medical school, from the first week to the last. Each time students noted whether they were considering or not considering each of 14 medical and surgical specialties and described any relevant influences. At the end of medical school, student volunteers participated in focus groups that probed these influences. We coded questionnaire responses and focus group transcripts and grouped them into fifteen themes, including critical incidents, formal curriculum, passion for career, prestige of specialty, teacher influence, “bad mouthing”, nature of work, career counseling, and fit with typical colleagues. The importance of the hidden curriculum was evident in each of these themes.

Conclusions: The hidden curriculum is a strong and pervasive influence on our students’ career choices. Some aspects influenced students to choose a specialty, while others led them to decide against a specialty. We conclude that revealing the hidden curriculum can help medical schools to design their formal curricula and medical educators to avoid unintentional negative influences. In turn, these changes will help students optimize their career decisions.

8Y/SC4 Shortage of young clinicians – can medical education influence career aspiration?
Martina Kadmon*, Monika Porsche, Petra Ganschow (Department of Surgery, Heidelberg University Clinic, Im Neuenheimer Feld 110, Heidelberg, D-69120, Germany)

Background: Shortage of clinicians is a global issue. Medical education may serve as a tool to attract students to clinical disciplines. The present study aims at collecting data on influencing criteria and the impact of an educational experience on career choice.

Work done: We asked third and fourth year students before and after their surgical rotation to complete a questionnaire on their present career aspiration. We have analyzed data from 99 students. By the end of July 2007 almost 300 students will have completed the questionnaire.

Results: Before their surgical training 47 of 99 participating students considered, 9 were determined to choose a surgical residency. After the rotation the numbers increased to 71 and 12, respectively. Especially females changed their career aspiration in favour of surgery after the educational experience in the field. The major reasons were interest in manual work with immediately visible success and the work content. The quality of postgraduate education was anticipated as an important factor. The least important aspects were career perspectives and salary.
Conclusions: (1) Education influences career choices; (2) A reform of postgraduate education is necessary since postgraduate training quality is a decisive factor of career choice; (3) Working conditions, especially for women, must be optimized.

8Y/SC5 Gender differences in predictors of satisfaction with the decision to become a physician
Heather L Hageman*, Dorothy A Andriole, Donna B Jeffe, Alison J Whelan (Washington University School of Medicine, 660 South Euclid Ave, Box 8073, St Louis, Missouri, 63110, United States)
Aim: To determine if predictors of physician-career-choice satisfaction differ by gender.

Work done: A questionnaire with items pertaining to professional achievements and satisfaction with becoming a physician was administered to our 1999-2001 graduates five years after graduation. Responses were linked with graduates' academic data and analyzed to identify independent predictors of physician-career-choice satisfaction (standardized Beta [β] reported).

Results: Of 347 graduates (50% women), 249 completed questionnaires (71.8%). Clinical-clerkships' grade-point-average (p=.144), Alpha Omega Alpha election (p=.087), satisfaction with quality of medical-school education (p<.001), satisfaction with quality of graduate-medical education (GME; p<.001) and GME-teaching-award receipt (p=.075) were associated with physician-career-choice satisfaction in univariate analysis (alpha set at 2-sided p<0.2 for consideration of inclusion in the multivariable model). In separate multiple regression models for men and women, independent predictors of physician-career-choice satisfaction included satisfaction with quality of medical school education for both men (β=.393, p<.001) and women (β=.450, p<.001) and satisfaction with quality of GME for men (β=.294, p=.001) but not for women (β=.013, p=.896).

Conclusions: Predictors of physician-career-choice satisfaction differed by gender. Satisfaction with the quality of undergraduate-(men and women) and graduate-medical education (men only) were associated with physician-career-choice satisfaction, but academic and post-graduate professional achievements were not.

8Y/SC6 Outcomes of a research oriented Honours program
S T T Hubers*, R Oedzes, P van Beukelen, G A J Miltenburg (Utrecht University, Faculty of Veterinary Medicine, Yalelaan 1, Utrecht, 3584 CL, Netherlands)

Background: In European higher education, Honours programs are a recent and fast growing development. Because of the lack of students choosing a career in (bio)medical research, the Faculty of Veterinary Medicine started a research oriented Honours program in 1993.

Work done: The perceived outcomes of the program were measured using a questionnaire. The research population consisted of all graduated former participants. The respondents took part in the program between 1993 and 2004, making up a total of 67 students.

Results: More than half of the respondents say following the Honours program influenced their job-choice. Often these students chose a career in research or at a University, often at our own institution. All but one of the respondents say the program improved their research skills. 65% says the program motivated them to continue doing research. 46% of the respondents continued doing research for a PhD. The respondents also reported growth on aspects of personal development.

Conclusions/Take-home messages: The honours program was effective in getting students interested in research, improving their research skills and helping them with their personal development. Also, a research-oriented Honours program is an effective way to keep talented students at the Faculty.

Workshop 8Z Web 2.0 e-learning: providing e-learning the student way
John Sandars (The University of Leeds, Medical Academic Education Unit, School of Medicine, Worsley Building, Leeds, LS2 9NL, United Kingdom)
Background: Young people of the Net Generation are making increasing use of a wide variety of new technologies in their social life and for informal learning. It is essential that all medical educators recognise how students are using Web 2.0 technologies (such as blogs, wikis, social network software and social bookmark software) and that they are prepared for the challenge of integrating this new approach into their e-learning provision.

This workshop will (1) Highlight the importance of the Net Generation in medical education, including the presentation of the results of a survey of the use of Web 2.0 technologies in first year medical students; (2) Demonstrate examples of the range of Web 2.0 technologies and how they can be used for e-learning; (3) Provide an opportunity for participants to discuss their current approaches to the use of Web 2.0 technologies in medical education; (4) Allow participants to develop an e-learning programme that integrates a range of Web 2.0 technologies by using an ecological approach to teaching and learning; (5) Enable participants to consider how they will respond to the challenge. All participants will have the opportunity to engage with the new technologies and challenge their assumptions about e-learning in medical education.

Level: Beginner to advanced.
Workshop 8AA  The Multiple Mini Interview: a new method of assessing applicants for medical school and post graduate training

Jocelyn Lockyer, Rodney Crutcher, Jill Konkin (University of Calgary, Continuing Medical Education, 3330 Hospital Dr NW, Calgary, AB, T2N 4N1, Canada)

Background: The Multi-Mini Interview (MMI) provides a new format for interviewing applicants to medical school or post graduate training. It is similar to an OSCE. Applicants proceed through a series of stations each with a different scenario. Stations can assess a different non-cognitive attribute (e.g., honesty, responsibility) in 10 minutes (2 minutes to read and think about the scenario and 8 minutes to discuss the scenario with the assessor). Applicants can be scored on the objective of the station, their communication skills, suitability for medical school or a residency program, and the strength of their arguments. Research studies from McMaster University and University of Calgary provide evidence that the MMI is feasible, valid and reliable.

Intended outcomes: By the conclusion of the workshop, participants should be able to 1) describe the MMI format of assessment, 2) develop a MMI scenario, 3) describe the key steps in developing an MMI assessment program, and 4) summarize key research findings.

Structure: In this workshop, participants will have an opportunity to observe an MMI, examine typical documentation provided to assessors, develop possible scenarios and explore use in their programs.

Intended audience: This workshop is designed for people involved in admissions decisions for medical school or postgraduate training as leaders, researchers, administrators, or teachers.

Workshop 8BB  Establishment of new medical schools; innovations, opportunities and direction: exploring organizational analysis tools

Nehad El-Sawi, Douglas Wood, O T Wendel (A.T. Still University, School of Osteopathic Medicine in Arizona, 5850 E. Still Circle, Mesa, Arizona, 85206, United States)

Background: Global interest in the establishment of new medical schools is showing signs of resurgence resulting in the creation of new public, private and community-based medical schools. As a result, a kaleidoscope of leadership, innovation, and paradigm shift opportunities present themselves for educational enhancement of future physicians. The importance of appropriate educational environmental framing and organizational analysis is evident, but many academicians need guidance in this pioneering effort.

Intended outcomes: (1) Recognize systematic approaches to think about new organizations; (2) Provide framework for comprehensive planning of new medical schools; (3) Apply the structural, symbolic, human resources and political frames as organizational analysis tools; (4) Utilize the “organizational analysis work sheet” and “developing action plan work sheet” for home institutions projects; (5) Develop an ongoing support network among workshop participants.

Structure: (1) A brief presentation based on Bolman and Deal’s principles of reframing organizations and the authors’ experience in developing new medical school. (2) Knowledge and concepts explored will be applied, in small groups setting, to projects from home institutions; allowing access to workshop participants’ resources. (3) Small group presentations will be shared in the concluding debrief.

Intended audience: Academicians interested in organizational planning and curriculum renewal.

Level of workshop: Intermediate.

Workshop 8CC  How to stay creative in medical education

E K Kachur1, R Galbraith2, L Nieman3, J Mahoney4 (1Medical Education Development, 201 East 21st Street, Suite 2E, New York, NY 10010; 2National Board of Medical Examiners; 3University of Texas; 4University of Pittsburgh, United States)

Background: Many innovations from the late 20th century are now in full bloom (e.g., standardized patients, OSCEs, PBL). Even e-learning and high fidelity simulators can no longer be considered ground breaking activities. While there is no need to frantically seek novelty for the sake of being innovative, we must remain vigilant of the fact that every field needs new ideas in order to retain its vitality. This workshop aims to a) raise participants’ awareness of personal and environmental factors that enhance or stifle professional creativity, and b) offer strategies for becoming more innovative.

Structure: Some brief presentations will address issues such as creativity theory and research, past innovations and their dissemination, early versus late adaptors, innovation awards, creativity and professional careers. Participants will engage in a variety of self-exploratory exercises and small group discussions. These will include reflections on being an early versus a late adopter, identification of personal and institutional barriers and facilitators to creativity, separating new ideas from recycled ones, separating good ideas from new ideas. The session will conclude with a review of take-home points. The handout will include key references.

Intended audience: Faculty or administrators who experience a personal or institutional need to become more innovative.

Level of workshop: All levels.
8DD Students’ resistance to reflection

Veronica J Selleger1, Benno Bonke2 (1VUmc, Department of Medical Psychology, Van der Boechorststraat 7, Amsterdam 1081 BT, Netherlands; 2Erasmus MC, Rotterdam, The Netherlands)

Background: Most medical educators are well aware of the importance of reflection in learning processes, especially in learning from one’s own actions (top level of Miller’s Pyramid). However, many students do not seem to share this view. Resistance to reflection should be taken seriously, by both educators and students. Different causes ask for different solutions, with due respect for students’ personal vulnerabilities. At VUmc Amsterdam and Erasmus MC Rotterdam we are presently running reflection programmes during clerkships, and also in earlier stages, e.g. after the first dissection experiences. Many students appreciate these classes, but some (and sometimes even whole groups) show scepticism or resistance.

Structure and content: We will explore the paradox of the teachers’ enthusiasm and the students’ resistance, and discuss different views on resistance, possible causes, lessons to learn or solutions to choose. Participants will share experiences. We will present our reflection programmes and participants will take part in some exercises.

Intended audience: Teachers, curriculum designers, and students. Some experience in designing, teaching or undergoing reflection classes is presumed. Students are very welcome. Level of workshop: Intermediate.

8FF Innovating faculty-student partnerships of practice in medical education: Interactive Case-based Online Network (ICON)

James Quattrochi1, Wendy Ham1, Susan Pasquale2 (1Harvard Medical School, Boston MA 02115, 2University of Massachusetts Medical School, Worcester MA 01655, United States)

Background: An evolving environment of medical practice challenges practitioners to develop abilities in decision analysis and information management. The growing utilization of online resources in learning signals an important evolution in the delivery of medical information and substantially alters the practice of knowledge integration. We argue that to meet this changing landscape, medical schools need to focus on directing students early on to build effective problem-solving and decision-making strategies within the interdisciplinary context of medical practice.

Intended objectives: We seek to demonstrate unique ways that the Interactive Case-based Online Network (ICON) system can be leveraged to enhance learning, develop problem-solving and decision-making skills, stimulate teamwork, and build mutually rewarding faculty-student partnerships. We will also discuss a newly developed, metric assessment approach to show that the significance of outcome data can be sufficiently improved when complemented by process data that inform educators of specific learning trajectory characteristics.

Structure: This workshop will be devoted to hands-on participation by the audience in a real-time, interactive case simulation using ICON. Users will share accountability and leverage their own expertise to achieve an optimal case outcome. Each participant will assume the role of a case character, aligned with the participant’s own background and interests. At the conclusion, the audience will engage in a discussion of the natural extensions of this collaborative activity in bridging theory with practice. The guiding principle of various instructional technologies should be enhancing the “process” of learning.

To this point, we have developed a user-defined, Interactive Case-based Online Network (ICON) in the teaching of the neurosciences to facilitate the medical student’s teamwork skills, to enhance the integration of information, and to encourage the active participation of faculty in the student’s learning (1,2). Cases progress “live” in real-time, permitting students to interact with each other and a cohort of experienced faculties who assume the roles of clinician, consultant, and virtual patient. In so doing, we have eliminated the traditional paper case. As the patient’s situation unfolds in much the same way that a real patient would present to a physician, students and the case characters communicate via online learning modules, electronic pages, and instant messaging, facilitating both asynchronous and synchronous interactions. Students are responsible for the application of the science, guiding the patient’s care, requesting consults from an interdisciplinary group of faculty, coordinating the medical team’s activities, and determining the course of action. The educational effectiveness of this use of instructional technology in the curriculum identified several endpoints: urgency in learning associated with real-time information transfer that does not exist in current problem-based learning; increased accountability to the team in the medical team’s activities, and determining the course of action. The educational effectiveness of this use of instructional technology in the curriculum identified several endpoints: urgency in learning associated with real-time information transfer that does not exist in current problem-based learning; increased accountability to the team in the care of the virtual patient and in understanding multiple developments in their patient’s disease; establishment of longitudinal mentored relationships among students with faculty and specialists from different disciplines.

The net effect is a user-driven, interdisciplinary learning environment that effectively integrates case discussion with content while preserving the face-to-face, educational dynamic of questioning, listening, and response. We find that integration of this instructional technology early in the medical school curriculum, establishes the groundwork for a new interdisciplinary competency in the practice of science.

Intended audience: Medical educators and educational researchers with interests in team learning, problem-solving, process-driven outcome, interdisciplinary learning environment, instructional technology implementation.

Contact Information: jq@hms.harvard.edu http://icon.hms.harvard.edu

Meet the Experts

8GG Meet the Experts: Best Evidence Medical Education (BEME)

Marilyn Hammick and Alex Haig are available in this session to discuss potential new reviews with anyone interested in submitting a protocol to BEME. If you haven’t a specific topic in mind but are interested in evidence informed education practice and policy making then we would be delighted to talk with you.

Evening: Open Forum

8HH Work Hour Limits for Physicians in Training: exploring effects and best practices

Ingrid Philibert, Senior Vice President, Field Activities, Accreditation Council for Graduate Medical Education (ACGME) and Staff, Committee on Innovation in the Learning Environment. Suite 2000, 515 North State Street, Chicago, IL 60610-4322

This open forum will explore cross-national perspectives on the effect of work hour limits for physicians in training, including sharing of best practices for care and learning under restricted hours. Participants should come prepared to discuss: their nation’s work hour limits; how resident education and patient care activities have adapted; whether data exist on the effect of the limits; current critical issues that need to be addressed.


### Symposium 9A

**Curriculum development and implementation in new medical schools**

Chairperson: A B Zaman (United Kingdom)
Panel: George Dambach (Florida International University, United States); Richard Hays ( Keele University, United Kingdom); Sam Leinster (University of East Anglia, United Kingdom)

Established Medical Schools continually evolve their curriculum, but new Medical Schools have no baseline or established system to evolve from. Thus as new Medical Schools have been established, the need to develop new curricula has allowed for the expansion and design of innovative curriculum and implementation methods. On the panel we have new medical schools represented that have seen their students graduate recently through to those just setting up. The symposium will cover:

- Why the school was set up and how it was different
- Curriculum design and quality assurance
- Teaching staff selection and training
- Choosing assessment methods

Personal experiences and lessons learnt will be highlighted. There will be an opportunity for audience participation and discussion.

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### Symposium 9B

**From medical individualist to team worker – Planting the seed of Quality Care in basic medical education**

Chairpersons: Per A Brodal (University of Oslo, Norway) and Aase Brinchmann-Hansen (Norwegian Medical Association)

From politicians, the general public and the professions there has been an increased focus on quality of care and patient safety issues. What should medical students learn about quality of care issues and what kind of educational experiences would allow students to achieve those learning objectives? At the University of Oslo, in collaboration with the Norwegian Medical Association, a new syllabus aimed at integrating Quality Care into the current medical school curriculum is now being implemented. Using the Oslo experience the challenges of setting the learning objectives and implementing the educational strategies will be highlighted by practical demonstrations, brief theoretical introductions and discussion among those present. The aim of the symposium is to help participants integrate quality improvement and patient safety, evidence based clinical practice and multiprofessional collaboration, teamwork and leadership into their medical school curricula, exemplified by using simulation, debriefing and feedback as learning tools.

### Short Communications 9C

**e-Learning: Virtual Patients**

#### 9C/SC1

**Re-purposing Virtual Patients: translation and adaptation to local health and cultural context, leading to content enrichment**

Mihaela Botezatu*, Nabil Zary, Uno Fors (Karolinska Institutet, Lime, Berzelius Väg 3, 171 77 Stockholm, Sweden, 171 77, Sweden)

Background: Virtual patient content might be a valuable additional learning resource if used in different locations from which it has been created. For such use, both systems and patient cases might first need to undergo translation. A critical next step is adaptation of templates and cases to the particular health/cultural context of the host country.

Work done: Web-SP, created by LIME, Karolinska Institutet, is now used in 10 different countries. Adaptation began with translation from English into every language, followed by adjustments of the patient templates. The critical parts were found to be: - templates: the pre-designed patient answers were retrieved, as well as the photos, to reflect the new different cultural background; - the patient interview, where information was restructured; - the lab features, which were adjusted and increased (e.g. for infectious diseases or sub-speciality cases).

Conclusion: Re-purposing virtual patient content involves more than a mere translation into another language. A prudential time and a reasonable staff capacity should be allotted to adaptation, otherwise the attempt of using the same e-content in another context might fail. Correctly managed, the process may lead to content enrichment and cross-cultural use of the same patient cases.

#### 9C/SC2

**How can you successfully create and use a Virtual Patient?**

Emily Conradi*, Jonathan Round, Terry Poulton, Arnold Somasunderam (St George’s University of London, CMHCE, Cranmer Terrace, London, SW17 0RE, United Kingdom)

Background: At AMEE 2006, St. George’s University of London (SGUL) demonstrated a generic approach to virtual patient (VP) design, simple enough for clinicians to create, yet with sufficient choice to simulate realistic decision-making. This process has been refined through use of the open-source software ‘Labyrinth’, developed by the University of Edinburgh. But to what extent would clinicians make VPs, how effective would the process be, and how would VPs be used?

Work done: To embed VPs within the institution, frequent VP design and creation workshops have been successfully trialled. These workshops are largely attended by clinicians teaching medical students, but have also been met with keen interest from educators on other healthcare courses. The next step is to evaluate the possible uses for the generated VPs. A study to replace some of SGUL’s PBL cases with VPs will be piloted in Autumn 2007. VPs are to be developed for mobile devices, to provide clinical students with ‘just-in-time’ learning. We are also investigating the possibilities that VPs offer inter-professional learning, and as assessment tools.

Conclusions: A realistic VP creation model has been successfully embedded to make ergonomically designed VPs, increasing the possibilities VPs offer an institution’s medical and healthcare curriculum.
9C/SC3 Exploring the critical factors enhancing learning skills and knowledge in hybrid surgery simulation

Olivier Courtelle\(^1\), Gunnar Lindgren, Lars Enochsson, Leif Hedman, Uno Fors (Karolinska Institutet / LIME, Berzeliusväg 3, 171 77 Stockholm, Sweden)

Background: Virtual learning environments like VR simulators have dramatically changed the training and assessment of surgical skills. However, little attention has been focused on exploring the potential benefits of delivering hybrid simulation during surgical training sessions. We hypothesised that this kind of contextualized learning experience would have positive effects on learning outcomes, performance and transfer of skills.

Work done: 35 fourth-year medical students participated in a pilot study where we aimed to assess the critical factors promoting learning and skill acquisition in hybrid surgery simulation. The experimental group (n=16) had to first solve a PC-based Virtual Patient case (colon cancer) and then perform a Virtual Colonoscopy on an endoscopic simulator. The control group performed the same tasks but in a reversed order for assessing the importance of the context specific sequence.

Conclusions: Our preliminary findings seem to indicate that there is a positive synergy within hybrid simulation. Higher flow levels like concentration, attention, enjoyment, self-confidence were self-reported during the experience with virtual colonoscopy when this latter was preceded by a virtual patient session. This contextualised learning environment contributed to perform faster and more goal-oriented on the simulator.

Take-home messages: (1) Mutual benefits can be observed when blended simulation is delivered as a sequence. (2) The virtual patient’s authentic learning context has a significant impact on the total flow and motivation processes in surgery simulation.

9C/SC4 An educational tool for interprofessional use of virtual patients

Patrik Jonsson\(^1\), Samuel Edelbring\(^1\), Lars-Olof Wahlund\(^2\), Annika Öhman\(^2\), Uno Fors\(^1\) (Karolinska Institutet, LIME, Karolinska Institutet, SE-171 77, Sweden)

Background: A demand for creating patient cases for learning, which facilitates interprofessional aspects.

Work done: Multi Interprofessional Case System (MICS) was developed to allow students from multiple professions work with the same virtual patient case. Experts from three professions authored the case from within their respective profession and perspectives. A pilot study with two groups of students was performed.

Results: Preliminary findings indicate that the virtual patient cases were relevant, and that the students showed a high level of engagement when working with the patient cases. The students experienced an added value compared to the more “classic” educational methods. However, the pilot studies were not conducted in an interprofessional course setting. Conclusions: Working with virtual patient cases in this way is highly appreciated by the students. The interprofessional aspects need to be addressed specifically in a suitable course setting, to be fully applicable. It is important to use MICS at an appropriate stage in the curriculum. Previous experience in working with patient cases seems to have an impact on the time the student needed for each virtual patient case.

Take-home messages: MICS was highly appreciated. Interprofessional goals need to be defined for courses using MICS and similar tools.

9C/SC5 Pandemic Avian Influenza preparedness: a patient care and team training simulation for medical students

John Mahoney\(^\ast\), Joe Suyama, Francis Guyette, Samuel Stebbins (University of Pittsburgh School of Medicine, M-211 Scaife Hall, 3550 Terrace Street, Pittsburgh, PA, 15261, United States)

Background: Improving public health, provider, and health system preparedness depends on practicing with all elements of the healthcare team. This 1-day program's goals included increasing students' understanding of the multi-dimensional nature of disaster and pandemic response.

Work done: After core lectures on disaster medicine, and pandemic treatment and triage, groups of 40 3rd year students participated in a pandemic simulation exercise. In this Hospital Simulation, students managed a 140 "bed" hospital, using a lecture hall as a simulated hospital environment that was populated with cardboard influenza patients. Students also became "infected", and were "treated” by colleagues, further burdening the hospital and degrading capabilities.

Results: The overall simulation was very well received, and highly rated by students. Students indicated they had improved knowledge about pandemic influenza, and also developed greater understanding of broader concepts that are vastly more difficult to teach – teamwork, collaboration, communication, leadership, interdisciplinary respect. Students gained appreciation for the essential roles of every member of the healthcare team in a manner that cannot easily be replicated in everyday experiences.

Conclusions: Take-home messages: Students can quickly gain insight into emergency preparedness and into hard-to-teach concepts, such as teamwork, leadership, and interdisciplinary respect, through this type of practical, team-oriented simulation.

9C/SC6 Design-criteria for virtual patients in medical education: a focus group analysis

S Huwendiek\(^\ast\), F Reichert, H M Bosse, C Brasch, J Heid, M Haag, F J Leven, G F Hoffmann, B Tonshoff (University Children’s Hospital Heidelberg, INF 153, Heidelberg, 69120, Germany)

Background: Little is known about the influence of different design-criteria of virtual patients (VPs) on students' learning.

Work done: Students worked on four VPs individually and in small groups of two or three. The VPs were presented via two different player types, “CAMPUS-classic” and “CAMPUS-thin”. CAMPUS-classic is characterised by a situated learning environment, long menu questions and almost free navigation. CAMPUS-thin uses a simpler interface, short menu questions and a pre-determined workflow. Five focus group analyses (n=27 students) were conducted to examine the impact of these design-criteria on acceptance, authenticity, motivation, learning success and productive discussions in small groups as perceived by students.
9D/SC1 Core competencies for scholars and researchers in medical education:
an MSc and PhD program
Claudio Violato*, David Cawthorpe (University of Calgary, Faculty of Medicine, Department of Community Health Sciences, 3330 Hospital Drive NW, Calgary AB, T2N 4N1, Canada)
Background: Medical education as a specialization area of scholarship and research is continuing to grow but there has been no systematic study of required core competencies.
Work done: The purpose was to determine key competencies and curriculum for the MSc and PhD degrees. We reviewed documents such as calendar and web information, interviewed leaders in the field and studied peer reviewed papers, texts, and scholarly studies.
Results: There are six major areas of competencies: (1) Medical education expert, (2) Educational leader, (3) Curriculum designer, (4) Teacher, (5) Educational researcher and Scholar, and (6) Learner assessor. We propose a graduate program to achieve these competencies for the MSc: (1) Foundations in Medical Education, (2) Research Methods and Design in Medical Education, (3) Curriculum Design, (4) Instructional Methods, (5) Medical Education Measurement, and (6) Educational Leadership and a thesis. Three courses for the PhD: (1) Advanced Research Methods and Design in Medical Education, (2) Advanced Curriculum Design and Evaluation, (3) Advanced Measurement and Psychometrics together with Candidacy Exams and a dissertation.
Conclusion: Highly educated scholars and researchers in medical education at both the masters and doctoral levels should have these core competencies.
Take-home message: Medical education needs professionals with the specific competencies identified.

9C/SC7 Simulation: towards new strategies for more affective experiences
Michael Begg*, Simon Edgar, David Dewhurst (University of Edinburgh, Learning Technology Section, Hugh Robson Building, George Square, EH8 9XD, United Kingdom)
Background: The ability to synthesise/evaluate a knowledge base is a primary indicator of professional competence. Simulated scenarios often afford students the opportunity to become emotionally engaged in activities that feel real. However, this “willing suspension of disbelief” is perhaps more frequent than not incidental to the emergence of the scenario and not specifically designed by training facilitators.
Work done: This short paper presentation reports on recent observations, interviews and questionnaire returns among facilitators and students engaged with simulation training.
Results: Facilitators suggest that students only come to appreciate the value of simulation training long after the sessions have taken place. Undergraduate students, for their part, feel largely confident in their ability to successfully manage simulated clinical encounters but often, in practice, need the step-by-step assistance of the facilitator who has to unpick the scenario in real time to its component knowledge base “parts” thereby undermining any higher cognitive affordance of the experience such as evaluation/synthesis of knowledge.
We suggest how the application of guidelines derived from game informed learning (Begg, Dewhurst et al. 2005) strategies as already applied to other virtual patient activities (Begg, Ellaway et al. 2006) may make a more significantly positive contribution towards developing competency.

9C/SC8 Designing a 3D Teaching Hospital in Second Life to support clinical skills development
Maria Toro-Troconis, Martyn R Partridge (Imperial College London, South Kensington Campus, London, SW7 2AZ, United Kingdom)
Background: The Faculty of Medicine at Imperial College London has been very proactive in the identification of key and potential areas which may help replace and support traditional teaching methods during clinical years.
Work done: The Respiratory group led by Professor Martyn R. Partridge has developed an e-learning module in the area of Respiratory Emergencies. This module has become an important learning tool for students who do not have exposure to Respiratory cases during their clinical attachments. Second Life is a 3D platform that can be used for training and education in a virtual setting. The Faculty of Medicine has recently purchased an island in Second Life and built a virtual teaching hospital with different Wards in which clinical learning activities take place. The Respiratory Ward has been developed on the island and a series of learning activities in the area of Respiratory Emergencies have been translated into the 3D-world. The project aims to evaluate the effectiveness of 3D online environments as mechanisms to encourage and support learning, social interaction and clinical skills development.
Take-home message: This topic may open new possibilities for innovative clinical teaching methods and potential collaboration.
9D/SC2 Graduate training in medical education: what capacities must graduate programs provide?
Richard D Cohen*, Dan Pratt, John Collins, Gordon Page (University of British Columbia, 2329 West Mall, Vancouver, B.C., V6T 1Z4, Canada)

Background: Graduate programs in medical education can provide much of the educational skills and knowledge that are required by medical educators to manage the increasingly complicated nature of the modern medical educational mission. These are capacities that go beyond the scope of most faculty development programs.

Work done: This study reports the opinions of forty-five US and Canadian medical educators who were tasked in three separate focus groups with summarizing the essential capacities and competencies that graduate programs in medical education must provide. We summarized their thinking using a framework that distinguished amongst individual, institutional, societal and global capacities.

Results: Their deliberations reaffirmed the importance of individual and institutional concepts such as: (1) educational training for physicians aspiring to medical educational leadership; (2) training in educational research; (3) the ability to manage change; (4) promoting inter-institutional educational collaboration. Conspicuously absent was any significant discussion of the societal or global roles of these programs.

Conclusions: Medical educators emphasized individual and institutional capacities that were important for graduate programs in medical education to develop. They were reluctant to embrace broader societal and global capacities.

Take-home messages: Medical educators need to adopt a broader perspective when planning graduate programs in medical education.

9D/SC3 Expanding General Practitioners' teaching role in undergraduate medical education at the University of New South Wales
Sylvia Jacobson (South Eastern Sydney Illawara Area Health Service, Mail Bag 8808, South Coast Mail Centre, NSW, 2521, Australia)

Background: My roles of GP Liaison Coordinator in a large Regional Health Service in New South Wales, Australia and Senior Lecturer in the undergraduate medical program at the University of New South Wales (UNSW), Sydney put me in the unique position to identify the advantages for general practitioners to be included as tutors in a recently developed undergraduate clinical and communication program for 1st and 2nd year medical students.

The presentation will: (1) Briefly describe general practitioners’ teaching role in the “Clinical and Communication” module for 1st and 2nd year undergraduate medical students. This includes a skill-based centre complemented by teaching in a clinical setting; (2) Highlight the benefits of engaging general practitioners as teachers in the early stages of medical education; (3) Provide the data of students’ perceptions of their hospital teaching experience.

Conclusion: There are significant benefits to undergraduate medical students when general practitioners teach clinical and communication skills in a clinical setting.

Take-home message: General Practitioners have been identified as a valuable teaching resource in the early phases of the undergraduate medical curriculum at UNSW.

9D/SC4 The Good! The Bad! The Ugly! Perceptions of group dynamics by medical education students
Subrata Gangooly, Aza Abdulla (University of Wales, Heath Park, Cardiff, Department of Medical Education, CF14 4XW, United Kingdom)

Background: An MSc course run by a leading University in the United Kingdom sees not only local students but also some from overseas. The different social, cultural and ethnic backgrounds that they come from influence the interaction that takes place between them. Alongwith that specific personality traits, previous existing knowledge or multidisciplinary backgrounds further enhance the richness of the interaction.

Work done: The group included 20 doctors. They were from diverse backgrounds, from different medical faculties and in varying levels of position in their respective fields. They were all going through an MSc course in medical education either as part timers (over two years) or full timers (over one year). They were all given a questionnaire to fill up near the end of the course. It was a retrospective analysis of what they thought or felt were the major factors in group dynamics during the modules. The data collected were analysed.

Results: The results showed there were important differences and they influenced to a great extent how small group exercises were run or organised.

Conclusion: It is important to take into account how small group activities are exercised and run and this needs to be taken into account when designing the modules.

Take-home message: Be open to diversity.

9D/SC5 An approach to integrating science and scholarship into medical education
Niall Byrne (University of Toronto, The Wilson Centre, 200 Elizabeth Street, 1ES559, Toronto General Hospital, Toronto, Ontario, M5G 2C4, Canada)

Background: Contemporary medical education is faced with two competing, yet potentially compatible, discourses. Science and scholarship, on one hand, have developed at accelerated rates over the past 50 years. Education, on the other hand, has evolved from a conception of the graduating physician as a Flexnerian, unidimensional practitioner to a complex, multidimensional CanMeds professional. The question to be addressed with these 2 discourses in mind is (a) where has medical education been, (b) where is it now and (c) where is it going.

Work done: A review of the history of medical education since Flexner (1910) leads inexorably to the observation that it progresses in small, discrete and cumulative steps with significant major changes (e.g. McMaster in the late 1960s and CanMeds in the late 1990s) occurring infrequently. A summary of this work was presented to the AAMC Council of Academic Societies (2007).

Conclusions: Medical education should decide if science (the doing of research) is an invariant component of the curriculum or a variant to be chosen by interested students. It must also decide how scholarship, defined as critical thinking, creative professional activity, etc., can be integrated across the continuum from undergraduate to continuing education. Finally, it must decide how these foci can be integrated into a curriculum which has CanMeds competencies as its objective.
9D/SC6 Identifying pertinent literature for evidence based medical education
Amr Mohamed*, Rohit Rambani (Cardiff University Wales, Department of Medical Education, CF14 4XW, United Kingdom)

Background: Rapid advances and decrease in costs of computer hard and software have led to an explosion in electronic databases in which the many roots of medical education thrive. These databases can be accessed by various internet search engines using a variety of search strategies; however the effectiveness of the strategies is unknown. Further, searching for medical education qualitative research involves trade-offs between specificity and sensitivity in other words recall and precision. Hence, efficient, timely retrieval of qualitative medical education literature is challenging. However, medical education like medicine must be evidence based and driven. Thus, optimal search strategies (OSS) are required to achieve maximal retrieval rate of appropriate and pertinent material from various sources to allow evidence based medical education to flourish.

Work done: This paper provides a synthesis of the OSS available in the literature for qualitative research in addition to the author’s method. In other words a one stop source for medical educationalists to obtain OSS which they can utilise to practice evidence based medical education. The various OSS, their synthesis and the result of testing out the strategies (records retrieved, percentage relevant, and time taken to identify relevant literature) are outlined.

9D/SC7 The origins of the field of medical education research: key players, key disciplines and socio-historical factors
Ayelet Kuper*, Mathieu Albert (The Wilson Centre, 200 Elizabeth Street, Eaton South 1-565, University of Toronto/University Health Network, Toronto, Ontario, M5G 2C4, Canada)

Background: To understand current knowledge production in medical education research (MER) one must understand how this field developed from its origins to the present day. As a first step in our research into the history of this field, we have attempted to answer the following: What were the beginnings of the conceptualization of medical education as a possible/legitimate research object? Why did it happen when and how it did?

Work done: We conducted a textual analysis of five years (1955-9) of the Journal of Medical Education (seventy issues), then the only English-language medical education journal. This included official documents from the Journal’s publisher, the Association of American Medical Colleges, a driving force in American medical education. Documents were analysed for themes and historical contents.

Conclusions: The concept of MER developed and spread during the 1950s in North America and the United Kingdom. Key individuals played roles in this early conceptual evolution, as did several disciplines (education, psychology, sociology). Structural and socio-cultural factors allowed/encouraged this development.

Take-home messages: Our developing understanding of the creation of MER will allow us to follow the history of the field forward in time and to look at the roots of still-current methodological and disciplinary debates.
Conclusions: The usefulness of gaming in medical education is illustrated through the use of interactive board-games – its positive evaluation is anticipated.
Take-home message: Interactive board games hope to revolutionise gaming in undergraduate and postgraduate medical education.

9E/SC3 Learning pathology: students' perceptions of a new student-centred activity
Maria Weurlander, Italo Masiello, Magnus Söderberg, Annika Östman Wernerson* (Dept of Laboratory Medicine and Dept of Learning, Informatics, Management and Ethics, Div of Pathology, F46, Karolinska Univ Hosp, Huddinge, S141 86 Stockholm, Sweden)
Background: We have developed a student activating method in pathology called case seminars. Second-year medical students work first with case histories and surgical specimens in small groups. Students then receive questions which are discussed together. The aim of the study was to evaluate students' perceptions of the case seminars and in what way the seminars contributed to learning.
Work done: The students answered an open-ended questionnaire. 53/60 students participated. The answers were analysed with a qualitative approach where the emerging themes were grouped into categories.
Conclusions: All students thought that the case seminars in pathology were a positive learning experience. Four aspects of importance for learning were identified: motivational, knowledge building, contextual and cooperative. The motivational aspect concerned an increase in interest and motivation to learn, while the knowledge building aspect included enhancing memory formation and facilitation of understanding. The case seminars were perceived by the students as a good way to relate textbook knowledge to a real world context and future profession. Work in small groups was thought to enhance positive cooperative aspects of learning.
Take-home message: The results indicate that our case seminars stimulate student-centred learning and we believe they may serve as a link between theory and practise in integrated medical curricula.

9E/SC4 Development of a module on sexually transmitted infections by distance learning for clinical officers in Tanzania
Stephen Brignell*, Ian Hosein, Iriel Myamba (School of Postgraduate Medical and Dental Education, Cardiff University, Cardiff, Wales, CF14 4XN, United Kingdom)
Background: Health sector reforms in Tanzania have involved the improvement of human resources, in particular, the upgrading of clinical officers to assistant medical officers (AMOs) using a curriculum delivered by distance learning.
Work done: A survey conducted in the Kilombero district of Tanzania (Myamba, 2005) revealed important perspectives on the learning needs of clinical officers. Further contextualisation was achieved in a visit by Cardiff partners (2007) that included discussions with national distance education co-ordinators and officers in the Tanzanian Ministry of Health, with clinical officers in Morogoro and with trainee AMOs and their lecturers in Ifakara. Introduction of the upgrading curriculum will commence with the development and evaluation of a pilot module by distance learning on sexually transmitted infections and HIV/AIDS. This work will be conducted by the Cardiff team (UK) with support from a UNESCO-Wales committee.
Conclusions: The Tanzanian healthcare sector has already developed some way towards the proposed reforms, but poses special challenges of learning culture, infrastructure, resources and management to those responsible for designing and delivering an 'upgrading' curriculum by distance learning.
Take-home messages: Developments in distance learning should not be unthinkingly transferred across national contexts without careful adaptation, underpinned by continuing dialogue with project partners and stakeholders in the host country.

9E/SC5 The medical student as teacher: creating online material for a Pediatrics class in Chile
Pamela Andrea Bozzo Silva*, Flavia Garbin Aste, Francisco Gonzalez Andrade, Juanita Zamorano Riquelme (Universidad de los Andes Medical School, San Carlos de Apoquindo # 2200, las Condes, 6782468, Chile)
Background: The use of e-learning technology is challenging for faculty and staff at our university. Medical students' technological skills can help overcome this difficulty. Placing students in leadership roles also presents unique problems. We present our experience integrating medical students to our Medical Education department as part of their curriculum.
Work done: Responding to our students' requests, our Medical Education department offered a three-month elective internship for last year medical students. The internship consisted of implementing a specific project in our VLE through Moodle for one of our courses. During the course of the internship, our student was able to teach faculty and students about Moodle, and create supporting material (chat, forums, and videos) for our Pediatrics course.
Results: The student's material and participation was very positively evaluated by faculty and students through online surveys. We will present the results.
Conclusion/ Take-home messages: This student's contribution encourages us to create more instances for student participation in the development of courses and our curriculum. Students' online experience can be leveraged to create better e-learning materials and improve the staff's Moodle skills. Our experience showed us that students can contribute meaningfully and enthusiastically to Medical Education departments, improving our offerings in the process.

9E/SC6 Introduction of peer assisted learning in a veterinary curriculum
S Baillie*, H Shore, S May (The Royal Veterinary College, University of London, AL9 7TA, United Kingdom)
Background: Maximising the use of the resources available in clinical skills centres can be challenging especially where one-to-one teaching is required. Peer assisted learning (PAL) provides one way of increasing students' access to such valuable facilities. The current project investigates the use of PAL in the context of teaching the skills required to perform fertility examinations in cows with a virtual reality simulator, the Haptic Cow.
Work done: A workshop was developed to prepare the peer tutors for their role. This included an introduction to the concepts of PAL, planning simulator-based training sessions, practiced asking and responding to questions and dealing with limitations in knowledge. Students taught their immediate peers with the simulator on a one-to-one basis and feedback was gathered to determine the expectations, needs and experiences of the participants.
Conclusions: There are potential benefits from PAL for both peer tutors and learners but, for these to be realised, the tutors must be well prepared and supported in their role. Therefore, emphasis was placed on the development of a workshop for the tutors and gathering feedback on the course. This will inform future use of a PAL in clinical skills training and the wider veterinary curriculum.

**9F/SC7** Peer teaching in Family Medicine – experience of facilitators
Marietjie van Rooyen*, David Cameron, Julia Blitz, Glynnis Pickworth (Department of Family Medicine, PO Box 667, Pretoria, 0001, South Africa)

Background: Lecture-based, didactic teaching was transformed into peer group teaching in the five-week Health and Care block in the fifth year of the University of Pretoria MBCrH programme. The class of 200 students was divided into eight groups. Each group became experts on one of eight themes (Chronic disease, Pain management, Palliative care, Mental Health, Managed care, Forensic medicine, Emergency medicine, and AIDS & TB) which they in turn taught to a group of 26 peers.

Work done: Videos of faculty facilitating peer teacher development will be analysed for facilitation styles. Reflective comments of each faculty member will be analysed as a form of triangulation. Differences between facilitation styles will be identified and discussed in relation to their teaching inventory scores and MBTI profiles.

Conclusion: Aspects relating to the feasibility and acceptability of this teaching method to faculty facilitators will be determined.

Take-home message: Teaching preference and MBTI profile do/do not influence a faculty member’s ability to facilitate this teaching method.

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**Short Communications**

**9F** Admission to medical school

**9F/SC1** Unrestricted admission vs. selection of applicants at the University of Tucuman Medical School
H Deza, S Mirkin, L Fajre, M Salvatierra, M D’Urso (University of Tucuman, School of Medicine, Rivadavia 750. 3°, Tucumán, D. 4000, Argentina)

Background: Admission to the University of Tucuman’s, School of Medicine has been both unrestricted and restricted at different periods in the past. This has had a strong influence on the students’ academic performance indicators. The aim of the study was to analyze, comparatively, the academic performance indicators among cohorts of students admitted unrestrictedly and students who underwent a Selection Process. The following indicators were analyzed among cohorts encompassing the years of Unrestricted Admission (1986–1988) and those in which a Selection Process was in place (1998–2006): the rates of desertion (ROD) and completion (ROC), years of permanence at the university (YOP), and the first year students’ rate of failure (FFY).

Results: For the years of unrestricted admission the averages found were: ROD 75%, ROC 13%, YOP 10.37 years, FFY 29.28%. When a Selection Process was used, the averages turned out to be: ROD 12.6%, YOP 7.9 years and FFY 6.60%.

Conclusions: The use of a thorough and reliable applicant-selection process has an important impact on the academic performance of the students, and hence, on the quality of the graduates.

**9F/SC2** Establishing the criterion validity of the Graduate Australian Medical School Admissions Test (GAMSAT)
Hamish Coates (Australian Council for Educational Research, 347 Camberwell Road, Camberwell, Victoria, 3124, Australia)

Background: The Graduate Australian Medical School Admissions Test (GAMSAT) has been used by institutions in Australia since 1995, UK and Ireland since 2000. This paper reports findings of a multi-institutional study to investigate the concurrent and predictive validity of the instrument.

Work done: In total, 351 students in their first-year of a graduate-entry course at eight institutions took part in the study. Analyses were conducted, and adjustments made to account for attenuated correlations and low reliability of the criterion variables.

Results: The findings exposed a high level of divergent validity between GAMSAT scale scores and the GPA and interview scores which are also used during selection. On average, GAMSAT scores explained around 40 per cent of variation in first-year marks, which compares favourably to other predictive validation studies. The most variation in first-year marks was explained by a model involving both GPA and GAMSAT scores.

Conclusions: The results provide empirical evidence that GAMSAT plays an important role in identifying people who have the capacity to succeed in medical courses. They provide information for institutions and agencies on optimal ways of incorporating objective test, interview and GPA data into the processes of medical course selection.

**9F/SC3** The usefulness of the Multi-Mini Interview in selecting for graduate entry medical schools
Chris Roberts, Merrilyn Walton, Imogene Rothnie, Jim Crosseby, Koshila Kumar, Patricia Lyon, David Tiller (CIPHER, University of Sydney, Faculty of Medicine, Edward Ford Building (A27), NSW 2006, Australia)

Background: The aim of this study was firstly to determine whether interviewers could make reliable and valid decisions about the non-cognitive characteristics of candidates with the purpose of selecting them for entry into a graduate entry medical program using the Multi-Mini-Interview (MMI) format.

Work done: The study used data from a high stakes medical school admissions decision making procedure. Content validity of the assessment was assured by using a framework of pre-professionalism based on international criteria for sampling the behaviours expected of commencing medical students. Within generalisability theory, a variance components analysis on MMI scores estimated the reliability of the assessment and the precision of the cut score.
Results: Data were available for 485 candidates, 155 interviewers and 21 questions. The reliability for an MMI circuit of 8 questions was 0.7. To achieve the usually accepted gold standard of 0.8 would require 14 questions. For a single MMI question and one assessor, 22% of the variance in candidate scores was due to true differences in the candidate’s behaviours. The main source of error (58%) was explained by the tendency for an interviewer to mark a different applicant-MMI combination differently. Typical inter-question correlations were 0.08 to 0.38 confirming the context specificity of measuring pre-professional behaviours. A maximum of 8% of candidates with high academic scores (Grade Point Average and Graduate Australian Medical Schools Admission Test) did not pass the MMI.

Conclusion: For the purpose of assessing the expected behaviours of candidates within a framework of pre-professionalism, we have confirmed that the MMI is a moderately reliable and feasible method of assessment. Although we demonstrated content validity, further work on validity is required to help confirm the utility of the assessment and to focus further development of this new assessment. Applicant performance on one question doesn’t correlate strongly with performance on another question, demonstrating the importance of context specificity when testing professional behaviours. The largest source of error relates to aspects of interviewer subjectivity, suggesting further training. For large-scale selection procedures of candidates into graduate entry programmes, the MMI can be used as a screening tool to ensure candidates have demonstrated an acceptable standard of pre-professional behaviours before entering medical school. It is not sufficiently robust for precise comparison for ranking purposes.

9F/SC4 Selecting medical students with the BioMedical Admissions Test (BMAT)

Joanne L Emery* (Cambridge Assessment, 1 Regent St, Cambridge, CB2 1GG, United Kingdom)

Background: The selection of medical students is an important issue causing much debate. The most competitive UK medical schools have many more applicants than places, almost all with the highest possible previous and predicted grades. There are also applicants with non-UK qualifications to consider. The BioMedical Admissions Test (BMAT) was designed to aid in the student selection process by providing additional evidence to examinations and interviews. It was known as the MVAT (Medical and Veterinary Admissions Test) prior to 2003. It measures scientific knowledge, academic skills (problem solving and critical thinking) and written communication: factors that medical admissions tutors regard as important to course success.

Work done: Results from the first four years of the test (2000 to 2003) were matched to the examination results of those accepted onto the medical course at the University of Cambridge.

Results: Correlation and logistic regression analyses on each cohort revealed that the test predicts medical course performance into the clinical years of study but does not predict the observer-rated aspects of the clinical course.

Conclusions: The BMAT identifies important differences in skills between high-attaining candidates that predict their course performance. It can also provide an objective basis for comparing candidates from different countries and educational backgrounds.

9F/SC5 Undesirable sources of error variance in assessment of medical school candidates with the Mini Multi Interview (MMI)

Peter H Harasym*, Wayne Woloschuk, Jean-Francois Lemay, Jocelyn Lockyer, Keith W Brownell (University of Calgary, Faculty of Medicine, 3330 Hospital Drive N.W., Calgary, T2N 4N1, Canada)

Background: The MMI is gaining popularity as a reliable and valid tool for assessing medical school candidates. The literature provides evidence of acceptable reliability (0.65-0.78) and validity of interview scores. The purpose of this study was to determine the sources of variance within candidate’s scores and the effect judges’ characteristics (e.g., gender, background, and stringency/leniency) had on observed scores.

Work done: 281 candidates were evaluated by 75 judges using ten 10-minute OSCE stations. Performance was assessed at each station on 5 items (Understanding, Communications, Argument, Suitability, and Overall) using a 10-point scale. A Multi-Faceted Rasch model was used to partition the sources of variance and estimate reliability of each component.

Results: Results showed that 54% of the score variance was due to judge characteristics, 4% to the stations, and 42% to the candidates. When the undesirable error variance was removed from candidate scores, the reliability of the corrected scores was estimated to be 0.96. Use of observed versus corrected scores created a significant shift (12%-15%) in candidate acceptability near the cut point. In conclusion, the MMI is an improved method of evaluating candidates’ performance but the effect of judge characteristics should be removed from the final scores prior to ranking candidates.

9F/SC6 Comparison between ranking examination success and medical education success of the students at Ankara University School of Medicine

Mehmet Ozen*, Tanju Aktug, Sabri Kemahlı, Özden Palaoğlu, Gulriz Eroz, Fevzi M Atacanlı, Hakki I Ayhan (Ankara University School of Medicine, Medical Education and Informatics Department, Ankara, 06620, Turkey)

Background: In Turkey, entering higher education is organized by Student Selection and Placement Center via a national ranking examination (OSS). The main source of error (58%) was explained by the tendency for an interviewer to mark a different applicant-MMI combination differently. Typical inter-question correlations were 0.08 to 0.38 confirming the context specificity of measuring pre-professional behaviours. A maximum of 8% of candidates with high academic scores (Grade Point Average and Graduate Australian Medical Schools Admission Test) did not pass the MMI.

Conclusion: For the purpose of assessing the expected behaviours of candidates within a framework of pre-professionalism, we have confirmed that the MMI is a moderately reliable and feasible method of assessment. Although we demonstrated content validity, further work on validity is required to help confirm the utility of the assessment and to focus further development of this new assessment. Applicant performance on one question doesn’t correlate strongly with performance on another question, demonstrating the importance of context specificity when testing professional behaviours. The largest source of error relates to aspects of interviewer subjectivity, suggesting further training. For large-scale selection procedures of candidates into graduate entry programmes, the MMI can be used as a screening tool to ensure candidates have demonstrated an acceptable standard of pre-professional behaviours before entering medical school. It is not sufficiently robust for precise comparison for ranking purposes.

9F/SC6 Comparison between ranking examination success and medical education success of the students at Ankara University School of Medicine

Mehmet Ozen*, Tanju Aktug, Sabri Kemahlı, Özden Palaoğlu, Gulriz Eroz, Fevzi M Atacanlı, Hakki I Ayhan (Ankara University School of Medicine, Medical Education and Informatics Department, Ankara, 06620, Turkey)

Background: In Turkey, entering higher education is organized by Student Selection and Placement Center via a national ranking examination (OSS).


Results: There was no statistically significant relationship between university success and OSS scores. The mean correlation score between exam results and Weighted Quantitative Composite (WQC; math-science score) which is considered for placement in medical program was 0.160. In first three years, the ratio of significant correlations between OSS scores and exam scores was higher than fourth year. Only correlations between exam scores and “WSC rank” were found statistically different from other OSS scores. With respect of medical examination type (theoretical, practical or PBL score), mean correlation score was significant for only “WSC rank”.

Conclusions: The reason for low correlation between OSS scores and faculty exam scores may be that OSS could not predict academic achievement. Not only ranking examination score but also personal qualities which are important for a medical doctor, should be considered for selection of medical students. Proper selection of future doctor candidates will bring out success of medical education and economical productivity.
**9F/SC7 The professional self assessment program for potential medical students**
Niyom Sathaporntheera*, Puangpen Ambua, Yothi Tongyenai (School of Medicine, Maharat Nakhon Ratchasima Hospital, School of Medicine, Maharat Nakhon Ratchasima Hospital Merng, Nakhon Ratchasima, 30000, Thailand)

**Background:** Maharat Nakhon Ratchasima Hospital, School of Medicine, joined a Collaborative Project to increase Production of Rural Doctors (CPRID) in 1997. As a part of the reforms of the selection process, in 2004, a professional self-assessment program has been used. After passing the admission examination, most potential medical students have no real experience in the medical profession and these teenagers have not yet assessed themselves for professional suitability.

**Work done:** The professional self assessment program has been designed for potential medical students to find out whether they are suitable for the medical profession or not. The program is composed of a) observe emergency department and wards, b) learning medical student life, c) learning the life of the rural doctor in a community hospital, d) understand health problems, e) learning a dedicated life, Prince Mahidol of Songkla, the father of modern medicine in Thailand.

**Results:** After 2 days and 2 nights in camp, the students were asked to evaluate the successfulness of the program. For 4 batches, 90% of 243 students thought the program helped them in choosing the medical profession. Ninety-five percent appreciated camping activities. Visiting the community hospital was considered to be the most helpful activity. At least 1-3 of each batch realized they are not suited to be a doctor.

**9G/SC1 Enhancing feedback to students in order to support learning – an institutional project**
Katharine Boursicot, Viv Cook*, Sandra Nicholson, Tal Schechter (Barts and The London School of Medicine, Queen Mary University of London, Centre for Medical Education, 2nd Floor Robin Brook Centre, St Bartholomew’s Hospital, West Smithfield, London, EC1A 7BE, United Kingdom)

**Background:** It is acknowledged that students need to be placed at the centre of any feedback process so they can improve their own performance. We undertook a project to investigate the existing state of feedback practice in our medical school and devise ways to enhance practice.

**Work done:** A literature search was conducted to establish principles of good feedback. This indicated that feedback is most useful if positive, constructive, non-judgemental and given privately to the individual. Students in all years of the course were surveyed about their perceptions regarding feedback; focus groups were conducted to further explore students’ views. Faculty were surveyed about current feedback practices and what support they needed to enhance this. The survey data was collated and analysed.

**Results:** There was strong evidence that feedback to students was occurring across the medical school as well as on clinical placements. The nature, extent and quality of the feedback appeared variable. Students reported a desire for receiving specific, individualised, ongoing feedback so as to improve their performance. Faculty reported that they would welcome support in the way of guidelines and continuing professional development courses.

**Conclusions:** Guidelines and workshops for faculty and students were devised to enhance feedback practice across the institution.

**9G/SC2 Influential variables in feedback processes**
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**Background:** Feedback is a key educational variable in the clinical context. Its effects on performance are unequivocal but complex. Feedback dynamics can be understood as a sequential process: clinical task, performance, observation, giving feedback, receiving feedback, and improved performance. The authors reviewed the literature to identify variables that affect the serial phases of the feedback process and their influence on its outcome.

**Work done:** A literature review was conducted over the period 1986-2006 in ERIC, PsycINFO, and Medline. Based on strict inclusion and exclusion criteria 37 systematic literature reviews and meta-analyses out of 507 articles were included on giving and receiving feedback and on the effects of feedback. Influential variables were identified and classified in a descriptive model based on communication and learning theories.

**Results:** The influential variables include personal characteristics, task-complexity, purpose of rating, type of standards, task familiarity, and the intensity of observation.

**Conclusion:** We conclude that most influential variables are related to clinical tasks and to other procedures involved in observation/rating and giving feedback. Few influential variables are related to task performance and receiving feedback.

**9G/SC3 Assessing change in clinical teaching skills: Are we up for the challenge?**
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**Background:** The faculty development community has been challenged to more rigorously assess program impact. Moving beyond traditional measures such as knowledge tests and self ratings, assessment of impact on teaching practices - including in clinical environments - is required.

**Work done:** We assessed the impact of a faculty development workshop focused on providing effective feedback in the clinical teaching environment. In particular, we (1) assessed our ability to measure supervisors’ feedback skills as demonstrated in a clinical setting and (2) compared the results with traditional outcome measures of faculty development interventions. A pre-post study design was used. Traditional outcomes included a knowledge test and self-evaluation. Measures of feedback skills used in the clinical setting included resident and expert evaluations.
9G/SC4 Blueprinting into practice: developing an integrated system to enhance assessment for learning

David Davies*, Ed Peile (Warwick Medical School, University of Warwick, Coventry, CV4 7AL, United Kingdom)

Background: Assessment is a key part of learning and an integral element of assessment is feedback to the learner. The General Medical Council have stated “Feedback about performance in assessments helps to identify strengths and weaknesses, both in students and in the curriculum, that allow changes to be made.”

Work done: In Warwick Medical School we have adopted a blueprinting approach to assessment that ensures reproducibility, reliability and congruity between assessment and teaching & learning. It also provides a structured and meaningful framework for feedback to learners. Our blueprinting matrix links assessment items to learning outcomes and competency statements and helps to ensure that all outcomes are appropriately assessed and examinations are not biased towards one aspect of the course. Student examination performance can be traced back to attainment of learning outcomes allowing the student to gain a better understanding of their own performance in the context of the learning outcomes to be achieved. Our aim is for students to become more self-aware of their knowledge, skills and attitudes, and for assessment to be a valuable part of learning. We will present our blueprinting matrix, and describe how this new approach has been received by students and staff.

Conclusions/Take-home messages: (1) Peer assessment can provide important, unique feedback for students. (2) Feedback themes most instructive when it stemmed from their own initiative, while women preferred feedback ensuing from a joint initiative. No other significant interactions were found.

9G/SC5 In search for evidence of instructive feedback: influence of the supervisor, observation of behaviour and student initiative

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Background: Feedback is considered to be of great importance for students’ learning. Several authors have surmised that the supervisor, the observation of behaviour and student initiative are important for the instructiveness of feedback. This study aims to provide empirical evidence for these expectations.

Work done: During 2 weeks 144 clerks from 8 hospitals recorded each individual feedback event (n=1065), noting who provided the feedback, whether the feedback was based on observed behaviour, who initiated the feedback moment and the perceived instructiveness. Multilevel techniques were used to analyse the data.

Results: The instructiveness of feedback from specialists and residents did not differ significantly. However, both were perceived as being more instructive than feedback from nursing and paramedical staff (zspecialists=2.484, p<.01; zresidents=2.437, p<.01). This difference was largely caused by male students. Feedback following observation was more instructive than feedback not following observation (zobservation=5.509, p<.001). Men considered feedback most instructive when it stemmed from their own initiative, while women preferred feedback ensuing from a joint initiative. No other significant interactions were found.

Conclusions/Take-home message: This study partly confirms expectations expressed in the literature. It shows the importance of observing behaviour, which should therefore be an integral part of clinical learning. Expected differences between specialists and residents were not confirmed.

9G/SC6 A qualitative study of narrative peer feedback among second year medical students

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Background: Peer Assessments can provide feedback about medical students’ work habits and interpersonal attributes. Narrative comments from peers can prompt important reflection and personal transformations reported by students. The purpose of this study was to describe the range and types of content in peer feedback among second year medical students.

Work done: All medical students at our institution participate in peer assessment that includes narrative comments. We performed qualitative content analysis of a representative sample of comments from one second year class. In the 618 narratives (309 strengths, 309 weaknesses), themes included: interpersonal and personality traits (e.g. introversion/extroversion, integrity); group work (e.g. contribution, leadership); work habits (e.g. punctuality, response to feedback, personal appearance); and cognitive ability. In 5 cases no strengths were listed. In 100 cases no weaknesses were listed.

Conclusions: Students comment on aspects of peers’ professional competence that faculty may not observe as directly. Positive comments far outnumbered negative. Common themes considered weaknesses, introversion and self confidence, were usually phrased as encouragement.

Take-home messages: (1) Peer assessment can provide important, unique feedback for students. (2) Feedback themes included interpersonal traits, group work, work habits and cognitive abilities. (3) Negative feedback was often presented supportively.

9G/SC7 Providing effective feedback: a new web-based educational training for medical teachers

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Background: In 2004, the Office of Health Science Education of the School of Medicine of Laval University (Quebec, Canada) developed a web-based faculty development intended for medical teachers particularly involved in clinical supervision of undergraduate medical students. This training aims to help them provide constructive feedback at
different times during the student’s rotation (from the beginning of the rotation to the evaluation at mid-rotation), while developing critical analysis skills on the way of giving feedback.

Work done: The training program consists of 6 modules, which were developed according to recognized cognitive and adult learning principles. These modules include individual exercises presented as typical situations of the clinical teacher’s practice, information tips, self-evaluation opportunities and further readings. Moreover, the participants receive individualized support and supervision from a tutor during the training. In 2004 and 2005, this training was offered to two groups of clinical teachers (n=21). Following these experiences, the original version was modified in its content and methods, which has given the new version presently on-line. The presentation has two objectives: 1) briefly describe the content and the various teaching methods of this training; 2) discuss the advantages and the demands of this type of training.

Workshop 9H
Emerging needs and demands in Continuing Professional Development in medical education and healthcare: a non-traditional vision from Iberoamerica
Margarita Barón-Maldonado, Thomas Thomson, Honorio Silva, Pablo Pulido (on behalf of FEPAFEM/PAFAMS, Caracas, Venezuela; fepafemfams@viptel.com)

Background: In terms of Medical Education experiences, accreditation of Latin American Medical Schools has been reported and discussed. The challenge is to translate and to be able to measure the impact of those experiences into real benefits for the population served in lieu of the new socio-political realities. Major needs and demands in medical education in Latin America are emerging with a trend to focus on the education of primary healthcare physicians working in primary healthcare services. The aim is to have a direct impact on the population healthcare treatment outcomes. Recent research to be discussed indicates a growing need for physicians to have knowledge and skills in areas not stressed in traditional undergraduate nor post-graduate medical education. These non-traditional topics include: leadership and management, health policy, ethics, research evaluation and patient-physician relationships. While this trend is relevant to all physicians, it has been observed most dramatically in physicians that work in primary care settings. Continuing Professional Development (CPD) will be increasingly called upon to provide this type of non-traditional education for post-graduates. Initiatives like the Project Globe Consortium for Continuing Professional Development and Project Global EduHealth Institute are focused on providing physicians with both traditional and non-traditional education and skill development, focusing on improving patient treatment outcomes. As these emerging subjects become more widely accepted as important components of a complete and long lasting medical education, medical educators will be challenged to build them into both undergraduate and continuing post-graduate programs and core curricula in a coherent fashion. Accomplishing this task will be especially challenging as we work toward the harmonization of accreditation standards and procedures.

Not only are new realities and non-traditional subjects becoming more relevant to physician education but also advances in technology are changing how that education can be delivered. Blended e-learning and face-to-face education shows great promise for enhancing physicians’ skills. The Project Globe Consortium is pioneering research into the impact this type of learning can have on primary health care physicians in five pilot countries in 2007 and 2008.

Workshop 9I
“Something for everyone”: simulation-based curriculum planning for multiple healthcare professions
Ross J Scalese¹, Geoffrey T Miller¹, Steig Frydenlund (¹University of Miami Miller School of Medicine, United States; ²Laerdal Medical AS, Norway)

Background: Use of simulation technology for healthcare education has increased dramatically in the past decade, both for the teaching and learning of various clinical skills, and for the assessment of competence. Applications of simulation-based methods encompass the training and evaluation of individuals as well as teams, and span a wide range of learner levels and multiple healthcare professions. Use of simulators can be costly, however, and the rational allocation of resources demands evidence that an investment in these technologies will yield positive results. Based on the BEME systematic review of high-fidelity simulation, this workshop will focus on development and implementation of a curricular blueprint incorporating simulation technology that is adaptable for use in multi-professional training and assessment.

Intended outcomes: At the end of this workshop, participants will be able to: (1) implement evidence-based strategies that maximize the positive effects of simulator training; (2) develop learning objectives customized to multiple healthcare professions; (3) choose effective simulation techniques for specified curricular goals; and (4) design simulation-based assessment methods to document achievement of learning outcomes.

Workshop structure: The workshop format will be highly interactive, incorporating an audience response system as well as the hands-on use of mannequin simulators (including “Harvey,” the Cardiopulmonary Patient Simulator, SimMan, and others). The workshop facilitators are (physician, paramedic/emergency medical, and nursing) provider-educators with many years of experience in using simulation technology to teach and assess skills; hoping to offer “something for everyone” and highlighting the broad applicability of simulation methods across multiple professions, they will lead three “mini-group” discussions focused on areas of mutual interest among the participants. The larger group will share lessons learned and practical tips for developing and implementing simulation-based resources in your own curriculum.

Intended audience: Clinician educators; clinical skills instructors; users of Harvey, SimMan, or other high-fidelity mannequin simulators; educators interested in learning more about simulators in general; educators interested in using simulators for multidisciplinary training; evaluators interested in simulation for skills assessment.

Level of workshop: All levels of participants will find this workshop useful.
Workshop 9K How can we foster educational scholarship in our clinical faculty?

Linda Snell1, Ruth-Marie E Fincher2 (1McGill University, Centre for Medical Education, Lady Meredith House, 1110 Pine Ave West, Montreal, Quebec, H3A 1A3, Canada; 2Medical College of Georgia, United States)

Background: Clinical teachers are essential to fulfill a school's education mission. However, teaching and educational scholarship frequently are not recognized in promotion systems. Increasingly, schools are adopting a broader definition of scholarly work, creating opportunities for educators to be rewarded for educational activities. This workshop focuses on 5 education activities: teaching, curriculum, assessment, educational administration, mentoring, (including a discussion about assessing quantity and quality) and contributing to the education community through scholarly work.

Intended outcomes: By the end of this workshop the participants will be able to define educational scholarship; state how clinician-teachers can engage in scholarly work; analyze educational activities to assess quantity, quality, scholarly approach, & scholarship; explain benefits of improved educational scholarship for teachers, learners and institutions; describe infrastructure needed to support educators; outline how medical educators can foster scholarship; and apply this information at home.

Structure: The workshop format will be highly interactive, with large and small group discussions, brainstorming and individual work using a workbook with a series of questions and resources. At the end of the workshop the participant will leave with a list of concrete actions to foster educational scholarship in their home setting.

Intended audience: Clinical faculty, medical educators, medical school leaders (all levels).


Workshop 9J Making interprofessional education work

Lesley Diack1, Michael Gibson2 (1Robert Gordon University/Scottish Executive IPE project, The Robert Gordon University Faculty of Health and Social Care, School of Pharmacy, Aberdeen AB10 1RF, United Kingdom; 2Robert Gordon University/University of Aberdeen)

Background: Over the past years there have been a number of interprofessional education initiatives throughout the United Kingdom, however many of these have been short-lived due to the lack of staffing, logistical and funding problems. Since 2003 the School of Medicine at the University of Aberdeen and Faculty of Health Social Care at The Robert Gordon University have been developing and embedding an interprofessional education programme funded by the Scottish Executive Health Department. This project has been to generate an appreciation of the importance of interprofessional team working, communication and role identities between 9 health and social care professional groups.

Content/structure: The purpose of this workshop is to investigate a number of different methods that could be used to address existing issues associated with interprofessional education initiatives. These methods include: role play, simulations, problem based learning, computer conferencing and e-learning. The workshop is interactive.

Posters 9M OSCE and Clinical Assessment

9M/P1 Videotaped assessment of skills in the undergraduate medical curricula

Pirashanthi Vivekananda Schmidt (Sheffield University, 85 Wilkinson Street, Sheffield, S10 2GJ, United Kingdom)

Background: Videotapes have been used for some time in assessing communication skills, clinical skills and in self-assessment. But there is currently no evidence that it can be utilised in undergraduate medical student assessment.

Work done: Moderate reliability was found between video and live rating of joint examination skills of undergraduate medical students (in press). Good practice points to improve videotaped assessment included explicit criteria for scoring by checklists and better technology.

Proposed work: If assessment by videotape can be utilised in undergraduate medical education it can offer a number of advantages: a move towards performance based assessment, better consensus between examiners and standardisation between sites. Performance based assessment can be a better measure of fitness to practice, utilises real scenarios and can make the transition from undergraduate to postgraduate assessment smoother. It can also aid in supporting poorly performing students.

Conclusions: It is planned to evaluate the feasibility of videotaped assessment in the undergraduate medical curricula and to explore potential challenges (e.g., patient consent).

Take-home messages: Currently there is no evidence that videotaped assessment is feasible in undergraduate medical education but a move to videotaped assessment offers many potential advantages. Further work will evaluate the feasibility of this idea.
9M/P2 Examiner training for objective structured clinical examination in Internal Medicine: a group control design study
C Nikendei*, J H Schultz, J Jünger (University of Heidelberg; Medical Hospital; Department for General Internal and Psychosomatic Medicine, INF 410; 69120 Heidelberg, Germany)

Background: Objective structured clinical examinations (OSCEs) have proved to be a reliable and valid assessment tool for basic clinical skills. Instructing examiners plays an important role to guarantee high assessment standards. However, there is nothing known about the effectiveness of an OSCE tutor training.

Work done: 128 Internal Medicine students participated in four subsequent 12 station OSCEs. 24 OSCE examiners (IG) obtained an examiner training after the first two OSCEs including short communication, group discussion and video evaluation, IG group was compared to 13 examiners (CG) who did not participate in the training. Self-assessed competencies in time management, giving feedback, prompting, appropriate use of checklists and rating of students’ performance were assessed by questionnaire after second and fourth OSCE.

Results: All raters showed improved competencies in feedback (p<0.013) prompting (p<0.033), rating (p<0.012) and time management (p<0.005) in the course of the OSCEs. IG seemed to profit significantly more only in time management competencies (p<0.05) compared to CG.

Conclusions/Take-home message: An examiner training for OSCE examiners leads to better time management skills in self-assessment evaluation. Further examiner training should enfold self-experience elements that hopefully will lead to a more sustainable training effect.

9M/P3 Knowledge and skill retention of advanced cardiac life support (ACLS) among final year medical students
Pensiri Kumpubhovichitra (Maharaj Nakhon Si Thammarat Medical Education Center, 469 Rajachadumneon Rd., Nakhon Si Thammarat, 80000, Thailand)

Background: Advanced cardiac life support (ACLS) is an essential skill for the new doctor. The final year medical students received an ACLS training course consisting of 1 hour lecture and hands-on practice with a mannequin while they attended the anesthetic department. The aim was to compare Objective Structural Clinical Examination (OSCE) passing rate of ACLS 6 months after initial acquisition and to investigate error rate in each step of ACLS.

Work done: Sixteen students had been evaluated on a simulated patient by using OSCE twice at 1 and 6 month after ACLS training. To pass in each step of ACLS, the student must follow the guidelines of CPR 2005 of the American Heart Association. Data were analyzed by descriptive statistics.

Results: There were 14/16 (87.5%) students who passed the OSCE after 1 month training and 11/16 (68.75%) after 6 months training. We noticed that at the second evaluation there were striking mistakes in defibrillation, differential of cardiac arrest and cardiovascular management step.

Conclusion: The knowledge and skill retention of ACLS at 6 months is less than 1 month after training. The ACLS should be developed by adding a refresher theory and skill related topic course to students. This may improve the result of ACLS skill after the period of time.

Take-home message: The remaining skill depends on their experience and repeated knowledge.

9M/P4 Assessment of surgical competencies of the final year medical students
W Thianjaruwattha*, T Panaput (Medical Education Center, Khon Kaen Hospital, CPIRD, Ministry of Public Health, Thailand; Medical Education Center, Khon Kaen Hospital, Srichan Road, Naimaung District, Amphur Maung, Khon Kaen, 40000, Thailand)

Background: Surgical competencies can be assessed using OSCE and direct observation in a real situation. This study compared surgical competencies of final year medical students.

Work done: All 36 sixth year medical students were assessed by surgical OSCE and authentic assessment by surgical staff in 3 skills: procedure, interpretation and communication at the end of course. Data analysis used correlation and mean.

Results: OSCE scores were significantly lower than observation in communication skills (6.8, 8.3), interpretation skills (6.9, 7.7) and overall scores (21.3, 23.4), p<0.001 while not different in procedure skills (7.6, 7.4). OSCE and direct observation were correlated significantly in part of communication skills and overall scores (r=0.35, p=0.04), but not significant in procedure and interpretation skills.

Conclusion: Overall the OSCE for surgical assessment correlated well with direct observation especially in communication skills, but was not significant in procedure and interpretation skills because of inadequate content coverage.

Take-home messages: Surgical OSCE can assess surgical competencies combined with direct observation. To improve correlation we must increase content coverage or assess in the same context.

9M/P5 Practice what you preach: relationship of checklists, global ratings of core competencies (expert and communicator) and assessor in an OSCE for neonatal-perinatal trainees
B Simmons (University of Toronto, 76 Grenville St, Toronto, Ontario, MSS 2B6, Canada)

Background: Communication is a core competency. The difficulty in assessment of communication depends upon who functions as assessor. Studies reporting poor correlation between physician and patient assessment suggest that physicians assess skills differently. The objective was to look at the correlation of communication scores as assessed by faculty examiners/standardized patients.

Work done: 36 trainees from across Canada were examined in a twelve station OSCE using standardized patients (SPs). Stations assessed 2-5 of the CanMEDS competencies - medical expert, communicator, collaborator, manager, professional, scholar, health advocate (5-point global ratings). Physician examiners also completed station-specific checklists. SPs completed a communication rating. Examiners/SPs also completed an overall competence score. Correlation coefficients were determined.

Results: There was a good correlation between checklists score and the examiner overall global rating (0.88), medical expert (0.86) and communication (0.78) ratings. SPs' overall global rating score showed a good correlation with the
combined communication global rating score (0.80). It should be noted that the correlation between examiner and SP total communication scores was 0.99.

Conclusions/Take-home message: The high correlation between communication scores indicates high validity. Faculty examiners assess expertise/communication to the same level, illustrating that knowledge is not necessarily independent of communication when guided by a checklist. SPs assess communication related to overall competency without the aid of a checklist.

9M/P6 Experiences with Objective Structured Clinical Evaluation (OSCE) at Frankfurt University Medical School: implementation within the curriculum of a large medical school in Germany.

Sandy Kujumdshiev*, Moritz Rehner, T O F Wagner (Johann Wolfgang Goethe-University Frankfurt, Department of Internal Medicine, Theodor-Stem-Kal 7, Frankfurt, D-60590, Germany)

Background: OSCE is well established to evaluate clinical skills and competence in medical education. Implementation in large medical schools has always been considered difficult because of relatively high organisational and manpower cost. Therefore the implementation of OSCE in internal medicine and consequently in practically all other fields of clinical medicine will be described.

Work done: All 650 medical students of each year have to pass a first OSCE at the end of the fifth semester of medical studies consisting of 7 stations of 5 minutes each (feedback evaluation). We implemented an additional OSCE in the seventh semester after the course of internal medicine (15 stations; fail or pass assessment). Since 2004 we trained volunteer students to serve as observers and patients to play exactly defined simulated patients. By the end of 2007 all clinical specialties will be covered by OSCE evaluation.

Results: OSCE has been implemented and consequently been included as the standard assessment tool of clinical competence in Frankfurt Medical School.

Conclusions: By making use of volunteer students and patients the cost of OSCE as formative and/or summative assessment can be reduced to make implementation possible even in large medical schools.

9M/P7 A parallel study of peer assessors’ and trained assessors’ contribution to clinical skills learning during a formative OSCE

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Background: A shortage of trained assessors required us to innovate with employing peer assessors in our second year formative assessment of medical students’ clinical skills. This is the first OSCE experience of these students who are in the first half of their second year.

Work done: The study describes the design of the OSCE formative assessment in which trained assessors and peer assessors were employed and compares students’ performance as assessed by peer and trained assessors. The student performance data is augmented by students’ perceptions of the assessment process. These were obtained via a semi-structured questionnaire.

Results: The detail results of both student performance data and the questionnaire findings will be presented. The main findings relating to student performance are that peer assessors gave lower marks than trained assessors at each of the OSCE stations. In regard to the questionnaire, students were unanimous that the formative assessment was a positive learning experience and increased their confidence for the forthcoming semester.

Conclusions/Take home message: In resource constrained environments the use of peer assessment can alleviate resource shortages and not compromise student learning as the study shows, especially since formative assessments are aimed at specifically facilitating learning.

9M/P8 Is this examination fit for purpose? 5th year surgical OSCE, University of Birmingham, UK

Satwinder Kaur Palia, David Wall (Birmingham Heartlands Hospital, Education Centre, Heart of England NHS Foundation Trust, Bordesley Green, Birmingham, B9 5SS, United Kingdom)

Background: An OSCE is a reliable and valid assessment for clinical competence. The GMC accepts passing final year examinations as proof of competence for medical registration in the UK.

Work done: A case study method was used to evaluate the 5th Year Surgical OSCE at the University of Birmingham to ascertain whether it was fit for purpose. Reliability: This OSCE has 5 stations of 7 minutes. Cronbach's alpha is 0.512. OSCE marks are combined other marks over three years to give an overall strand mark. Fairness & Justice: This is a high-stakes exam using a proven standardisation method, providing reassurance to the GMC and public. Performance & Standardisation: A borderline group method is used. This has been shown to be a defensible standardisation method. Validity: It demonstrates content, face, consequential and construct validity and concurrency. Utility: The environment is appropriate for the nature of the assessment, allowing examination of 115 students over two days. Examiners and students found this OSCE well organised.

Conclusions: This OSCE demonstrates fairness, justice, validity, utility, performance and standardisation. Suggestions for Improvement: Use of patient opinions on underlying constructs. Two examiners in a longer station or consideration of an end-of-year final OSCE to improve fairness and reliability.

9M/P9 Pilot clinical skills examination at “manager-educator” level for final year students

Mary Donovan, Janice Hanson, William Sykora, Amy Flanagan, Joseph Lopreiato, Louis Pangaro (Uniformed Services University, Educational Programs (EDP), Department of Medicine, 4301 Jones Bridge Road, Bethesda, MD 20814-4799, United States)

Background: Clinical skills examinations typically require students to gather clinical information and make diagnoses (“reporter-interpreter” tasks). We piloted an OSCE for “manager-educator” tasks in which fourth year students would negotiate patient-centered management plans and teach patients basic information.

Work done: We piloted a six station OSCE with dichotomous checklist items documenting patient education, cultural competence and shared decision making. The cases were: Parkinson's patient refusing use of cane, obstetrics patient requesting early induction of labor, parent requesting antibiotic for child, behavior change (smoking), simplification
of polypharmacy, breaking bad news (brain injury). “Doorway” information provided clinical findings and any medical knowledge needed for management. Included for calibration were third year students, residents and faculty from six different medical specialties. Checklist scores (%) were averaged over six stations.

Results: Reliability was 0.5 across cases, 0.58 (average) within cases. Scores were higher with each level of training; sample sizes were inadequate to capture significantly higher levels of skill in house staff and faculty than in students. More cases are needed for sufficient reliability.

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Conclusion/Take-home message: Manager-educator skills can be measured with an OSCE

9M/P10 360-degree OSCE evaluation

Daniel Bauer*, Matthias Angstwurm, Matthias Holzer, Veronika Kopp, Martin R Fischer (Munich University Hospital, Medizinische Klinik - Innenstadt, Medical Education Unit, Ziemssenstr. 1, Munich, 80336, Germany)

Background: The OSCE is an established method for assessing clinical skills and was first introduced to the Munich medical faculty in 1999. To analyse and improve the quality of an OSCE this study wants to exemplify and discuss a “360 degree” evaluation approach.

Work done: 220 3rd year Munich medical students were assessed by a 12-station OSCE in July 2006. The OSCE was delivered in five parallel tracks on two medical campuses. Each station took 10 minutes with one station reserved for student evaluation. Examiners and standardized patients were offered a training course prior to the exam. Standardized patients evaluated the professional behaviour of examiners. All examiners were required to evaluate their stations and suggest improvements. The OSCE was psychometrically analysed with regard to students’ performance, difficulty and discriminatory power of stations and the overall exam reliability for comparison of the different tracks and locations.

Results: The student evaluation rated the OSCE as fair and discovered minor weaknesses; response rate was 92%. The quality of OSCE-stations was satisfactory with important suggestions for improvement. Discriminatory power of stations differed significantly depending on whether examiners were trained before the exam or not.

Conclusions: An OSCE should be evaluated from as many perspectives as possible.

9M/P11 Global rating and rating by checklists: Can global rating effectively contribute to a more concise evaluation of an Objective Structured Clinical Examination (OSCE)?

J H Reißenweber*, C Scheffer, M Hofmann, F Edelhäuser (Medical Faculty of Witten/Herdecke University, Alfred-Herrhausen-Straße 50, D-58448 Witten, D-58448, Germany)

Background: Within the curriculum at the medical faculty of Witten/Herdecke university OSCE examinations have a major significance. Together with the Modified Essay Questionnaires (MEQ) they replace the state medical examinations at our university. We aimed at investigating during an OSCE (internal medicine, surgery, orthopedic surgery) for the 1 years students if an additional global rating in two stations might be helpful for a more exact and more reliable assessment of students’ performance.

Work done: For the first time during winter term 2006/2007 in this OSCE in two long stations additional to checklist rating, global rating was implemented. In the foreseen presentation it is intended to demonstrate in detail results of the global rating in comparison to conventional rating results obtained by using checklists.

Conclusions: We recommend additional global rating to ameliorate the reliability of OSCEs. Results obtained by global rating went partially in line with rating results obtained by checklists.

Take-home message: Global rating effectively contributes to a more concise and more accurate evaluation of an Objective Structured Clinical Examination (OSCE).

9M/P12 The patient voice in assessment: involving the patient voice in OSCE station creation and marking

P Morris*, A Armitage, E Dalton, R Fuller, S Kilminster, R Lane, F O'Neill, J Symons (University of Leeds, School of Medicine, MEU, Level 7, Worsley Building, Leeds, LS2 9NL, United Kingdom)

Background: At the heart of today’s professional education is the attempt to transform healthcare relationships by encouraging shared care and decision making with patients. Involving the voice of the patient in professional assessments is one driver for this. Simulated patients (SPs) are the largest group of the public involved in high stakes assessment of medics.

Work done: At Leeds we are developing valid and robust SP work by recruiting a diverse team, working with their perspective and with patient groups to co-create SP roles and marking schedules. During this year’s final year student OSCEs, while all SPs will contribute to marking, two more complex stations have been modified with the ‘patients as teachers’ SP group and the marking schedule further developed. Quantitative and qualitative data is being collected: examiner and SP marks and feedback, plus process reflections by all participants on training, performance and marking, so that co-creation of next year’s OSCEs can widen and deepen.

Conclusions: Learning so far has been about the central role of the SPs’ experience in defining and delivering complex medical stations and implications of this for effective and ethical assessment of professional practice.

Take-home message: SPs should be worked with as independent voices, not just used as aids.
9M/P13 Incremental clinical examinations can work

T A Youngstein*, J Hollands, T Vince, T Davies, J Philpott-Howard, G Clayden, J Rees (Division of Medical Education, King’s College School of Medicine, London, SE1 9RT, United Kingdom)

Background: In 2005-2006 we introduced Incremental Clinical Examinations (ICE) into Year 3. The aim was to produce earlier and continued feedback on students’ clinical skills and to reduce the load on the end of year OSCE.

Work done: In each of three rotations students take two 6 minute ICE stations, one clinical examination, one history taking or clinical skill. Each station must be passed with one re-sit permitted per station. Students passing all 6 stations were exempt from the OSCE.

Results: 438 students took the ICE with 236 (54%) passing all 6 stations at first attempt. 115 (26%) passed the year with one re-sit, 27 (6%) required 2 re-sits, 9 (2%) 3 re-sits and 1 student 4 re-sits. 32 (7%) students took the end of year OSCE.

Conclusions: The implementation of ICE was considered a success. Students received earlier feedback on performance and weaker students and firms were identified earlier. Examiner and patient/actor availability was easier than for an OSCE. Future challenges include producing more qualitative feedback and allowing students to elect when they are ready to sit ICE stations. In conclusion, the Incremental Clinical Examination can work and has clear benefits for both medical students and the medical school.

9M/P14 A stations-based examination of competence on a multidisciplinary curricular unit integrating anatomy, histology, physiology and biochemistry

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Background: Multiple-station examinations (MSEs) are commonly-used alternatives to written/oral examinations in anatomy, because they combine the reliability of multiple-choice/short-answer tests with the validity of a test using realistic settings. In this regard, multidisciplinary curricular units present particular challenges. If proven valid and reliable, MSEs could be used in the assessment of competence in other disciplines. We describe MSEs designed for 3 multidisciplinary courses on body systems, comprising 2/3 of the first two years of our 6-years medical undergraduate program.

Work done: Examinations, prepared by a multidisciplinary team of faculty, are delivered at the end of each system. Students rotate through 25 “stations” of materials (anatomical specimens/models, imagingology films, tissue slides, experimental results) and are given 1 minute in each to answer a multiple-choice/short-answer question, point a structure or perform a physical-exam manoeuvre.

Results: Four cohorts (2001/2002 to 2005/2006) completed 10 MSE examinations. Grades consistently average 13-14/20 across different units and cohorts and correlate with students’ attitude/interest scored by the facilitator in each practical. Importantly, internal consistency, measured by Cronbach’s alpha, was also high.

Conclusions: Assessment of competence in anatomy, histology, physiology and biochemistry can proceed with MSE. The validity and predictive value of the examinations needs further research.

9M/P15 Undergraduate medical students´clinical competence through the eyes of faculty from different specialties

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Background: To compare medical students’ global itemized ratings generated by faculty from three different clinical specialties (gynecology, internal medicine and pediatrics).

Work done: At the end of a clinical clerkship, faculty (n=36) filled in a Global Itemized Rating form, consisting of 6 technical and humanistic items (0-10 scale). Each of the 197 learners was independently assessed by 3 teachers (one from each specialty). Statistical analysis used Cronbach coefficient, Wilcoxon paired test and Spearman coefficient.

Factor analysis was performed.

Results: A total of 1474 questionnaires was completed. Internal consistency was higher than 0.92 (all faculty groups). Rates given by teachers were high (median 9.0, 7.1-10). Scores were higher for humanistic than for technical skills in 3 specialties (difference = 0.6, r=0.65 Obst&Gyn; 0.5, r=0.74 internal medicine; 0.5, r=0.7 pediatrics, p<0.0001 for all). Faculty from gynecology rated higher than internal medicine or pediatrics (medians 9.3, 8.9, and 8.8, respectively, p<0.05). Factor analysis resulted in two different factors for each specialty.

Conclusion: Ratings exhibited a “ceiling effect”. In spite of the high correlation among raters, each specialty may have different views on how to value students’ skills.

Take-home messages: Training for assessors should be offered.

9M/P16 Clinical reasoning: different perspectives on the same performance

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Background: Some specific approaches to assess clinical reasoning have not been directly compared.

Work done: 29 senior clerks in internal medicine worked up two clinical cases simulated by standardized patients, performed a post-encounter stimulated recall, and were assessed using 3 different approaches: 1) an unweighted score of expected items based on expert consensus; 2) a score of expected items, weighted by the actual performance of 7 experts solving the same 2 cases; 3) a score based on data collection features recognized as predictors of diagnostic accuracy. We evaluated the concurrent and predictive validity of each approach.

Results: The correlation of unweighted scores was .37 (p<.001) with weighted scores and .27 (p<.05) with features scores. Correlation range between weighted scores and features scores was .17 - .36 (p<.001). Correlation with diagnostic accuracy was respectively .43 (p<.001), .13 (p NS), and .39 - .60 (p<.001) for the unweighted, weighted, and features scores.
Conclusion: Concurrent validity of these approaches is moderate. Predictive validity is moderate to good for the unweighted and features scores, poor for the expert-weighted scores.

Take-home message: These approaches are complementary and must be chosen following the goal of assessment, level of trainees, and resources available.

Posters

9N Postgraduate education – later years

9N/P1 CQI activity for educational improvement: a pediatric residents’ inpatient charting
Woranart Ratanakom (Pediatric Department, Chonburi hospital, Bansuan, Muang District, Chonburi, 20000, Thailand)

Background: The Pediatric residency committee applied continuous quality improvement (CQI) model for improving residents’ inpatient charting. The aim was to measure the residents’ charting skill after CQI model implementation.

Work done: 1) Formed CQI team. 2) Recorded baseline data. 3) Informed the residents. 4) Defined the measures following hospital accreditation guideline: history, physical examination, progress note and discharge summary. The scores of each item were defined in five-rank-score-scale from zero to four. 5) Brainstorm potential strategies monthly. 6) Facilitated the effective and decision making. 7) Descriptive statistics and ANOVA were analyzed.

Results: Of six-months’ data collection, 1,612 charts were audited. The score of charting of all items improved significantly after CQI model implementation. The mean score was increased from 2.96 to 3.08 (p < 0.05) at the end of study period. The scores of history, physical examination, progress note and discharge summary were increased from 2.99 to 3.06 (p < 0.05), 2.95 to 3.05 (p < 0.05), 2.86 to 3.14 (p < 0.05) and 3.04 to 3.18 (p < 0.05) respectively.

Conclusion/Take-home message: The CQI model could be implemented to enhance an area of residency performance which affected the patient care.

9N/P2 The importance of different learning situations in candidates’ self reported knowledge and skills during postgraduate training in psychiatry
John Chr Fløvig*, Olav M Linaker (Department of Neuroscience, Faculty of Medicine, Norwegian University of Science and Technology, Postbox 3008 Lade, N-7441 Trondheim, Norway)

Background: Candidates specializing in psychiatry are acquiring knowledge and skills from working and studying in a number of different learning situations. We report results on which learning situations are most important for achieving each learning objective.

Work done: All candidates completing the basic specialist training courses in psychiatry in Norway during one year were asked to fill in a questionnaire. The candidates reported to what degree they felt they had learned enough in 109 different learning objectives comprising both knowledge and skills. For each objective the student was asked to report the most important learning situations.

Results: The following learning situations were described: Structural theoretical training, basic specialist training courses in psychiatry, additional training courses in psychiatry, clinical practice, individual clinical supervision, psychotherapy supervision and self-tuition. The answers were anonymous. 60 of 66 candidates (91%) participated.

Conclusions: The presentation will report which learning situations are considered to be most important for achieving different learning objectives.

Take-home messages: The results will give data on which learning situations the candidates find most important for their learning and also which learning situations could be improved for objectives where candidates report low levels of learning.

9N/P3 Geriatrics curriculum development for multispecialty graduate medical education: a needs assessment
Tomas L Griebling*, Kimber P Richter, Carmela J Meyer, Daniel L Swagerty (The Landon Center on Aging - The University of Kansas, Mailstop 1005, 3901 Rainbow Boulevard, Kansas City, Kansas, 66160, United States)

Background: Worldwide demographics indicate the elderly population is increasing rapidly, boosting demand for skilled clinicians to treat the unique needs of older adults. However, prior data suggest many graduate physicians do not feel adequately prepared to care for frail elders.

Work done: During curriculum development for multispecialty graduate medical education in geriatrics, a needs assessment survey was administered to 160 resident physicians (71 from seven surgical specialties; 89 from five nonsurgical specialties). Respondents rated their perceived importance of fourteen validated geriatrics quality indicators (end-of-life, falls, delirium, depression, pressure ulcers, medication interactions, malnutrition, incontinence, pain management, elder abuse, discharge planning, care coordination, standards of care). Respondents also rated their self-assessed level of preparedness to provide geriatric care in each topic. Within specialties, topics with observed variance ≥ 1.0 between the mean importance and preparedness measures were considered high-priority.

Results: Residents perceived essentially all topics as important. Variance between perceived importance and preparedness was greatest among non-surgical residents. Overall, more variance was observed for pain management, delirium, nutrition, and standards of care.

Conclusions/Take-home messages: This survey identified important differences between both individual specialties and surgical and non-surgical categories. Targeted educational modules are being developed and implemented based on these data.
The Intercollegiate Surgical Curriculum Project: Innovation in evaluation

Background: The new Intercollegiate Surgical Curriculum Project (ISCP) has been a quite revolutionary process for the organisations overseeing surgical training in the UK and Ireland.

The result of a four-year collaboration between the Surgical Colleges of the UK and Ireland, and the Surgical Specialty Associations, the ISCP has produced an innovative, competence-based curriculum which will replace the current basic and higher surgical training processes in August 2007.

Work done: As with the development of the new curriculum, the evaluation process has been innovative. This paper will describe the processes of the final pre-implementation evaluation, and preliminary results. Based on the pre-pilot studies by Canter and Eraut, a call for proposals was issued in summer 2006 seeking partners to further investigate factors identified as likely to influence the implementation of the curriculum. Resulting from this call, research teams from the universities of Cardiff, Southampton and Warwick, and the Kent, Surrey and Sussex Deanery have been commissioned to investigate complementary issues. In addition, a base-line survey of SHOs is being conducted by The Royal College of Surgeons of England. This survey will capture data on the critical factors described by Eraut (ibid), i.e. satisfaction with supervision and access to cases. This evaluation project runs for 12 months from April 2007 with final reporting in June 2008.

The ISCP has been funded by the Department of Health.

Intensive microsurgical training for residents in ophthalmology using a realistic experimental animal model. Is this effective?
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Background: The beneficial effect of newly introduced compulsory microsurgical ophthalmic training for residents in Denmark was explored.

Work done: Two groups of ophthalmic residents (un-trained (N=12)/trained (N=10)) underwent a 2 days intensive microsurgical training program. Specific surgical skills selected from the OSATS scale (level 1-5) were registered immediately before and after this training program using an ocular swine model with a standardised corneal lesion. Assessment included a peri-operative evaluation followed by photographic recording of the surgical result and subsequently evaluation. Non-parametric statistics was applied using a 5% level of significance.

Results: All the per-operatively assessed skills improved significantly: comprising motion (un-trained/trained) (median 2 to 3 / 3 to 3), instrument handling (2 to 3.5 / 2.5 to 3) flow of operation (2 to 3 / 2 to 3.5) and time consumption (28.5 to 20 / 19 to 15). The ratings given by the two assessors did not differ significantly for any of the skills. Quality of final product will be presented.

Conclusion: Several predefined surgical skills improved significantly following a short microsurgical training program using the presented model.

Take-home messages: The study supports the continuation of the compulsory microsurgical training for residents in ophthalmology in Denmark.

Trainee anaesthetists evaluate consultants’ teaching skills: a valuable exercise?
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Background: Postgraduate training in anaesthesia remains essentially an apprenticeship. Most training occurs during ward rounds. Outside contracted hours reading journals was the commonest form of learning. However, 18% (50/84), grand rounds (48/84) and X-ray meetings (48/84). Attendance to at least 70% of formal teaching was achieved during contracted and own time hours following EWTD implementation.

Work done: We designed a questionnaire looking at various characteristics regarded as important in a trainer. Each trainee in our department was asked to comment anonymously on each consultant. The results were collated in two ways: a) an individual feedback form for each consultant available only to them; b) a public picture of training in the department as a whole.

Results: After publishing the results we asked the consultants for their thoughts on the process. The vast majority found it a helpful and valuable exercise. It is now repeated on a regular basis.

Conclusions/Take-home messages: Consultants now have some idea of their effectiveness as trainers. This is useful for personal development, appraisal and revalidation. The global results for the department provide evidence of calibre of training for Deanery, College or PMETB visits and could also be used to attract future trainees. The process provides a forum for trainees to raise clinical governance issues.

Education a right or a privilege? Specialist paediatric registrars’ perception of teaching and training opportunities
Taruna Bindal*, David Wall, Helen Goodyear (West Midlands Deanery, Birmingham Children’s Hospital, Birmingham, B4 6NH, United Kingdom)

Background: Shift patterns of work are now the norm to comply with the European Working Time Directive (EWTD). This study explores the views of paediatric specialist registrars (SpRs) on their education and training opportunities during contracted and own time hours following EWTD implementation.

Work done: Questionnaire study to all 118 SpRs.

Results: Response rate was 71% (84/118). Most popular formal teaching activities were local protected SpR teaching (50/84), grand rounds (48/84) and X-ray meetings (48/84). Attendance to at least 70% of formal teaching was achieved by approximately half the trainees. The main reasons for not attending protected formal teaching were shift patterns of work and protected teaching not being bleep free. Informal teaching was mainly done by consultants on call and during ward rounds. Outside contracted hours reading journals was the commonest form of learning. However, 18% of SpRs did no other additional learning.
Conclusions/Take-home messages: More teaching and learning opportunities are needed over a broader range of shift hours rather than just 9-5pm. This will enable SpRs to take on ownership of their own learning, especially important as the number of contracted hours per week will reduce further over the next few years.

9N/P8 Does it matter where you do your dental vocational training?
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Background: UK dental graduates enter a 12 month vocational training programme, but only in Scotland is there mandatory assessment of this training.

Work done: To evaluate the effect of mandatory assessment on dental trainees, three trainee cohorts (2003-2004; 2004-2005; 2005-2006) completed beginning and end of year questionnaires assessing outcomes relating to their practice. Response rate was 91% Scotland (N=319/342); other-UK (N=428/480).

Results: There were no significant baseline differences. However, compared to other-UK trainees, at the end of their training year, Scotland’s trainees were more confident in their clinical skills (P<0.01), more confident they could keep-up with their continued professional development (P=0.04), showed more positive attitudes towards their training (P=0.02) and formal assessment (P<0.01), felt less workplace pressure (P<0.01), and were less worried about their future in dentistry (P=0.02).

Conclusion: Results suggest that it does matter where dental graduates spend their training year. Support for training under the Scottish system was robust over three cohorts.

Take-home messages: There is some evidence that mandatory assessment is beneficial. However, with generally high outcome scores for all UK dental trainees, it remains uncertain if mandatory assessment produces significantly better dentists. Nevertheless, it is important to evaluate different training systems to inform the development of future education programmes.

9N/P9 Dual, combined emergency medicine and family medicine residency training program in Slovenia
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Background: In 2007, we intend to start with a new specialization in Slovenia - emergency medicine (60 months training). The curriculum of new specialization is a combination of American (contents) and European (form) curriculum of emergency medicine. The emergency medical service in Slovenia is based on prehospital units in urban areas (consisting of emergency teams with full-time emergency physicians) and Ib and Ia units in rural areas and small cities (consisting of family physicians).

The primary specialization for emergency physicians has so far been family medicine with special additional education and training in critical care, anaesthesiology, internal medicine, pediatric and gynecology. In the system with two different specializations, the dual family and emergency medicine residency training is a resource for residents who plan careers that combine family and emergency medicine, such as in rural practices, or for urban emergency physicians who plan career in family medicine after several years career in emergency department. The dual residency approval will help preserve family physicians’ role in emergency departments, ensure medical coverage of emergency departments in underserved areas, and ensure a second option/career for emergency physicians.

9N/P10 Where do GP-trainees want to learn medical practical skills?
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Background: As part of a 3 year postgraduate program GP-trainees can learn practical skills through on-site learning (General Practice and hospital) and skillslab-training. To learn practical skills a sufficient amount of occasions needs to occur in practice. The skillslab provides additional training to the on-site learning. The aim was to assess GP-trainees’ needs for additional skillslab training.

Work done: A questionnaire consisting of 135 practical skills, derived from end-terms of the GP training program, was sent to 78 first-year GP-trainees. For each skill GP-trainees could indicate where it could be learned best: General Practice; General Practice + skillslab; only skillslab; no need to learn this skill.

Results: The response rate was 64%. 44-70% of respondents could learn practical skills in General Practice only. Fifty percent of all practical skills required additional training by at least one third of the respondents. Only 8% of the practical skills required additional training for at least 50% of GP-trainees.

Conclusions: Most practical skills can be learned on-site by most GP-trainees. Additional skillslab training should be available, but not for every skill and GP-trainee. Skillslab training needs to be tailored to individual needs. Factors influencing the variation in needs should be assessed to address the optimal training strategy.

Take-home messages: For GP-trainees General Practice is a suitable learning environment to learn practical skills.

9N/P11 The development of locality based training for general practice
Richard Mumford*, Glynis Buckle (East Midlands Deanery, Lakeside House, 4 Smith Way, Grove Park, Leicester, LE19 1SS, United Kingdom)

Background: Set against the national development of General Practice as a specialty and the introduction of a new curriculum for GP Registrar (GPR) training our aim is to move from three Vocational Training Schemes (VTS) based around acute trusts and supported by Course Organisers towards nine locality based training programmes supported and led by Programme Directors.

Work done: A strategic plan was developed, in consultation with VTS Course Organisers, GPR Trainers and GPRs, which enabled the delivery of GPR specialty training programmes from August 2007. Key areas for consideration were: Geographical configuration of programmes; The programme directors’ role; The trainers’ role; Management and Administrative Support; Transition.

Conclusion: This development is an opportunity to develop the skills of the Programme Directors (previously Course Organisers) and to use their individual expertise across nine programmes rather than confine to it just one programme.
and to consider alternative ways of delivery of training. It is also an opportunity to centralise administration across all programmes and to develop robust internal quality control mechanisms to ensure a uniformity of high quality delivery.

Take-home message: The importance of managing the culture shift necessary to achieve transition.

**9N/P12** Rheumatology consultants’ views on the need for training specialist registrars (SpRs) in consultation skills

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Background: Within rheumatology postgraduate training, there is little emphasis on consultation skills training. Yet these skills are crucial in practice. We wished to investigate consultants’ views on the need for consultation skills training for Rheumatology SpRs.

Methods: Eight semi-structured interviews with rheumatology consultants were conducted in four UK regions. Within each region one junior (<5 years experience) and one senior consultant (>10 years) was interviewed. Interviews were recorded and transcribed verbatim before thematic analysis.

Results: Consultants feel SpRs develop consultation skills by apprenticeship. This involves observation of senior colleagues and modelling behaviours. Feedback to SpRs focuses on clinical content rather than the process of the consultation. There is little observation or assessment of consultation skills. Consultants construct an overall judgement of SpRs through (infrequent) observation and feedback from hospital staff, patients and other consultants in the region. All consultants acknowledged that consultation skills should be assessed more objectively. Shorter training periods, reductions in working hours and the perceived increase in patient expectation were reasons for more structured training. Feedback on knowledge, time management and patient management in addition to communication is felt necessary.

Conclusion: We will present selected findings and discuss their implications.

**9N/P13** Specialist registrars’ expectations of their future role as a consultant: interview study in the North of England

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Background: There is a lack of research on problems new consultants have regarding their new roles, particularly their perceived learning needs in clinical and management issues.

Work done: Qualitative study to explore expectations of the consultant role and perceptions of preparedness. Interviews conducted with thirty final year specialist registrars training in the Northern Deanery, England. Phase Two will follow up specialist registrars into their consultant role to compare anticipated and actual experience.

Results: Specialist registrars became more aware and concerned about the wider role of the consultant (beyond clinical work) towards the end of their training. The main expectations about the consultant role were: greater responsibility, changing relationships, and more emphasis on managerial work and teaching. Specialist registrars felt best prepared for clinical work, but less so for management, in particular people management. Most expected the transition to be gradual, and to be well supported, with continued ‘on the job’ learning.

Conclusion: Take-home messages: Specialist registrars need to be exposed to the full range of consultant activity to gain a fuller understanding of the role. Training in practical aspects of management may need to be integrated into training earlier so that these skills can be practised.

**9N/P14** What do trainees want? A review, and experience, of the RITA process

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Background: Specialist Registrars (SpRs) are expected to have an annual review (RITA). There are a number of models to support this process. At Mersey Deanery an annual face-to-face RITA meeting takes place. This current process is however a time-consuming and costly exercise.

Work done: A pilot study of the RITA process was conducted. Questionnaires relating to aspects of the RITA review were distributed to SpRs attending RITA panels.

Results: 50 completed questionnaires were received. 94% of trainees had regular meetings with their Educational Supervisor, 68% also having formal appraisal (median 30 minutes, range 10 to 60 minutes). The meetings also offered the opportunity to set personal development plans with specific targets to optimize the training and educational needs; however only 40% reported having a current plan. Portfolios or log-books were held by 88% and 79% respectively. Career advice had been received by 84%. The opportunity to meet with the RITA panel and receive personal feedback with interactive discussion was reported as useful or very useful by 74% of the trainees.

Conclusions: Free-text responses of trainees suggest that the development of specific career guidance offered in parallel to a more prescriptive RITA process would support the transition from trainee to consultant grade.

**9N/P15** Big Brother is watching - but is he educationally sound? A critical analysis of the assessment of doctors in practice using multi source feedback

Chris Williams*, Lesley Pugsley (School of Postgraduate Medical and Dental Education, Wales College of Medicine, Biology, Life and Health Sciences, Cardiff University, Heath Park, Cardiff, CF144XN, United Kingdom)

Background: As doctors, professional competence is a subtle mix of cognitive and interpersonal habits. Previous traditional assessment of doctors has sought to test core knowledge but objective, scientifically sound and statistically valid methods for testing some of the more subtle more humanistic aspects of care have been difficult to apply. Multi source feedback (MSF), peer review or 360° feedback is proposed as being particularly suited to the assessment of a doctor’s all round skills. However to be of any apparent use, it must be reliable, valid and acceptable to all parties involved.
Work done: We present a literature review of the use of MSF in the training of doctors, particularly concerning Paediatric Specialist Registrars in the UK. Its effect on learning and professional development and how its results are interpreted and applied are specifically covered.

Conclusions: Reliability and acceptability are clearly demonstrated and while achievement of validity remains a challenge, its integration with other assessment tools should address some of these concerns.

Take-home message: The widespread implementation of MSF is at an early stage but has clear educational principals at its core and will continue to develop alongside other assessment methods.

90/P3 Medical ethics and law: evaluation of two modules in paediatrics and geriatrics each including a case study, a lecture and e-learning
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Background: A longitudinal ethics curriculum was developed for the reformed track in undergraduate medical education at the Charité-Universitätsmedizin Berlin, including five modules from the third to the fifth year of medical studies. Each module is integrated in a clinical clerkship covering gynaecology, paediatrics, psychiatry, geriatrics, and

90/P2 Development of Objective Structured Oral Examination for ethical assessment
Hye Rin Roh, Sang Wook Lee*, Sung Bae Park, Ja Kyeong Kim (Kangwon National University College of Medicine, 192-1 Hya 2 dong Chuncheon Gangwondo, 200-701, Republic of (South Korea))
Background: Although medical ethics is now an important aspect of medical education, it has not been easy to assess students’ performances in medical ethics. We developed objective structured oral examination case (OSOE) for ethics evaluation. The purpose of the study is to assess the reliability of OSOE.

Work done: One 10-minute OSOE was designed and used to assess the ethical reasoning and attitudes. 54 third year medical students participated in OSOE. OSOE was duplicated and two professors assessed one student. We analyzed the reliability of OSOE with Cronbach’s alpha. Results: Cronbach’s alpha for the OSOE was 0.84.

Conclusion/Take-home messages: The OSOE was shown to have good reliability. OSOE can be used to assess ethics. To achieve validity, more cases and evaluators are needed.

90/P1 Professionalism: perception of newly inducted AKU residents
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Background: This study was conducted by the Department for Educational Development in collaboration with the Postgraduate Education Committee of the Aga Khan University to identify the perceptions of the newly inducted residents at Aga Khan University regarding professionalism, as a part of the needs assessment survey for developing a program for teaching and assessing professionalism.

Work done: An open ended questionnaire was distributed to 109 residents at the beginning of their residency training in October 2006. Fifty-five completed forms were received (response rate of 50.46%). Responses were analyzed qualitatively to identify themes. 37% of the respondents identified honesty as a major attribute for professionalism followed by commitment to learning, concern for patients and responsibility towards the profession. Opportunities of practicing professional behaviors, observing teachers, students and peers, presence of a conducive environment, a desire to learn new things every day and being compassionate and responsible to the job assigned were identified as the key methods for learning professionalism.

Conclusion: Honesty was identified as a major theme in terms of definition of professionalism as well as characteristics of a “professional” physician. It was not clear why attributes like accountability, team work, scholarship and professional demeanor were not cited.

Take-home messages: Teaching of professional behaviors cannot be done in isolation of the social and organizational culture. Differences in perception of professionalism may hinder application of models of teaching professionalism taken from the West and need to be explored further.

90/P16 Towards quality monitoring systems in postgraduate medical education
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Background: The introduction of competency based curricula in postgraduate medical education draws attention for quality monitoring. The Obstetric & Gynaecologist Departments in the Northern and Eastern Region of the Netherlands each year organize one day to evaluate regional training and education. The goal of this day is to assess and improve educational quality. Facing the challenge of translating their competency based framework into everyday practice this day becomes especially important.

Work done: The day is structured in the following way: Each participating hospital highlights some quantitative and qualitative aspects of its postgraduate training and education. The residents present these aspects according to the Pendleton rules: what went well in the past year, what needs improvement and what can be agreed on for next year. During the past year standardized and validated instruments were included in the day. (a) Systems level: Postgraduate Hospital Educational Environment Measure (PHEEM); Objective: improvement of educational climate; (b) individual level: Clinical Teaching Effectiveness Instrument (CTEI); Objective: improvement of individual teaching competencies.

Conclusions: An open, but structured, discussion of quantitative and qualitative aspects of postgraduate education in a regional context is stimulating and worthwhile. The use of the validated instruments during the year makes quality monitoring a continuous process.

Take-home messages: Continuous attention for educational climate and individual teaching competencies is important in times of the introduction of a new curriculum.
Introduction to medical ethics for students
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Background: Ethics, in philosophy, is the study and evaluation of human conduct in the light of moral principle which may be viewed either as the standard of conduct that individuals have constructed for themselves or as the body of obligations and duties that a particular society requires of its members. Knowledge of ethics is essential to the professional development for physicians. Teaching of ethics aims to equip the students with skill and experiences to identify, analyze and resolve ethical problems in the context of patient care, and to justify and choose among the available options. This requires a variety of teaching methods and learning experiences for students to develop their own process of ethical thinking and behavior as they proceed through their personal and professional life.

Work done: The introduction to medical ethics program has been introduced to year 4 medical students before entering the clinical year since 2003. The program consists of didactic teaching, small group activities, self-practice and reflection.

Results: The students’ opinions toward the program was strongly positive for 92.1% and very positive for 7.89%.

Conclusions: Medical ethics program is well evaluated by students and is able to guide students in ethical thinking and behaviors. Regular self-practice enhances the results.

Take-home messages: Scruples and morals are a vital foundation for ethical awareness and behavior.

Self-assessment of evaluation of medical professionalism in 6th year medical students
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Background: The good doctor with good knowledge and medical professionalism is much needed. The assessment tool for professionalism is not clear.

Work done: The aim of this study was to develop a tool to assess professional behaviors in general practitioner (GP) trainees. The evaluation form for medical professionalism was developed with a 10 points rating scale with ten characters of commitment in medical professionalism as written by the ABIM Foundation. Two medical teachers from emergency and community medicine department and fifteen 6th year medical students completed the same evaluation form.

Comparison scores by intraclass and Pearson correlation coefficient was done.

Result: There was no significant difference in scores on communication skills (p=0.046) and commitment to quality improvement (p=0.04) between two teachers and no significant difference in the score on communication skills (p=0.03) among two teachers and fifteen students.

Conclusion: Self-assessment of medical professionalism by rating scale can be used to evaluate communication skills.

Take-home message: Teaching and learning of medical professionalism is significant. The assessment of medical professionalism is challenging for a training center.

Challenges in the training of physicians – ethical and human aspects
Carlos Eli Piccinato, Maria de Lourdes Veronese Rodrigues, José Fernando Figueiredo, Cristiane Martins Pere, Maria de Fatima Aveiro Colares, Margaret de Castro, Alfonso Dinis Costa Passos, Luiz Emes (Faculty of Medicine of Ribeirão Preto, University of São Paulo, Brazil, Av. Bandeirantes, 3900 - Campus Universitário - Ribeirão Preto, SP, 14048-900, Brazil)

Background: Problems and challenges are frequent in Medical Education.

Work done: An open questionnaire was applied to medical teachers of the Faculty of Medicine of Ribeirão Preto, University of São Paulo, Brazil, in order to collect their opinions about the main challenges of Medical Education.

Results: Thirty-six percent of the respondents manifested concern about the ethical preparation of graduates and/or about human relations aspects, including the doctor-patient relationship. Thus, in order to improve the ethical and humanistic training of future doctors and to create spaces for student reflection and integration, actions were suggested, such as: mentoring program; organization of discussion groups about ethics and the development of human relation skills; multi-professional team work; greater inclusion of social, cultural and humanistic activities; developing a critical view about the limits of their professional skill; creation of disciplines and study groups involving ethical and humanistic aspects.

Conclusion: There were identified needs for changes in affective aspects of the teaching/learning process.

Take-home message: In Medical Education, the transmission of adequate values and attitudes is more difficult than the transmission of knowledge and skills.

Effectiveness of verbal feedback on professionalism
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Objective: To evaluate the effectiveness of verbal feedback on professionalism improvement in medical students

Work done: 15 sixth-year medical students received verbal feedback from 3 staff members about their practice at the end of the 2nd week during 4-weeks of emergency medicine practice. This feedback included their merit, advantage and how to adjust. Using a rubric score (range 1-4) in 5 topics of evaluation, the staff gave them their score on two occasions: at the end of 2nd and 4th week. These topics were responsibility, honesty, job attention, teamwork capability and morality. Then they compared the rubric score at the end of 2nd and 4th week to evaluate if there was an improvement in the rubric score.
**90/P8** The contribution by Primary Care to the development of professionalism in undergraduate medical education at the University of Leeds: Views of GP tutors

Alison Lea*, David Pearson (Academic Unit of Primary Care, University of Leeds, 20 Hyde Terrace, Leeds, LS2 9LN, United Kingdom)

Background: The development of the values, behaviours and beliefs that constitute professionalism are essential to acquire during undergraduate medical training. This has been highlighted by the GMC in Modernising Medical Careers. There is a general move towards specific teaching on this subject. Before this is undertaken we must be clear on the student experience and the learning outcomes that already exist. The Primary Care attachment during year 4 of the Leeds Medical School undergraduate curriculum is a rich learning resource for challenging clinical, ethical and social problems. The development of professional attributes is part of the ‘hidden’ curriculum. We aim to develop a clear set of learning outcomes based on survey of the GP tutors.

Work done: We recently asked 93 GP undergraduate tutors who are responsible for students whilst on community placement. Our results so far indicate that teaching professionalism is not thought to be a core component of General Practice/Primary Care. We will follow up this preliminary work with a survey of our GP tutors by postal questionnaire, to seek their views on what aspects of professionalism they feel able to teach and in which situations these may occur. Our poster will present the findings of both the initial and follow-up survey and comment on provisional learning outcomes.

**90/P9** Physicians and the thin white line: a needs assessment of humanism and professionalism in Continuing Medical Education

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Background: Ethics teaching is now included in all undergraduate medical curricula. In many cases however this teaching can be given a concise and accessible introduction to the concept of ethics and highlights the relevance of ethics to medical practice by applying some ethical and philosophical ideas to a consideration of the treatment of premature babies and it does little scope for a broader introduction to philosophical and ethical thinking. This poster shows how medical students can be introduced to medical students in an interesting and digestible manner and thus to advocate a broader and more general approach to ethics are also considered with Deontology, Consequentialism, Existentialism and Postmodernism being introduced. The poster emphasises the relevance of all these topics to the treatment of premature babies and it does this both generally and by the use of vignettes. The aim is to show that complex ethical and philosophical concepts can be introduced to medical students in an interesting and digestible manner and thus to advocate a broader and deeper approach to the teaching of medical ethics to medical undergraduates.

**90/P10** A study of medical ethics: the treatment of premature babies

Victoria Rubin (St George’s, University of London, Cranmer Terrace, London, SW17 0RE, United Kingdom)

Background: Ethics teaching is now included in all undergraduate medical curricula. In many cases however this teaching is done in close association with, or even as part of, medico-legal training and this practice-based approach allows little scope for a broader introduction to philosophical and ethical thinking. This poster shows how medical students can be given a concise and accessible introduction to the concept of ethics and highlights the relevance of ethics to medical practice by applying some ethical and philosophical ideas to a consideration of the treatment of premature babies. Topics covered include Personhood and Personhood, Personhood and Humanism, Personhood and Personhood and Personhood and Personhood. Four very different approaches to ethics are also considered with Deontology, Consequentialism, Existentialism and Postmodernism being introduced. The poster emphasises the relevance of all these topics to the treatment of premature babies and it does this both generally and by the use of vignettes. The aim is to show that complex ethical and philosophical concepts can be introduced to medical students in an interesting and digestible manner and thus to advocate a broader and deeper approach to the teaching of medical ethics to medical undergraduates.

**90/P11** Exploring professionalism: a qualitative study of UK GP Registrars

David Pearson*, Beverley Lucas (Academic Unit of Primary Care, The University of Leeds, 20 Hyde Terrace, Leeds, LS2 9LN, United Kingdom)

Background: A systematic literature review of medical professionalism identified key features of altruism, service, accountability including self-regulation, respect and lifelong learning. Contemporary health care developments within the United Kingdom reflect societal changes including egalitarianism and consumerism, importance of the patient viewpoint, new interprofessional relationships and patient choice. Recent changes to GP working practices provide potential challenges to the concept of professionalism: the 2004 GP contract increasingly dictating the boundaries of GPs’ work, and leading to more directly salaried GPs. There is limited published evidence relating to how GP Registrars view professionalism as they embark on careers within general practice.

Work done: Our qualitative study explores GP Registrar perceptions of professionalism within general practice. Two focus group interviews (n=15) with final year GPRs were moderated by an independent researcher [BL] using a semi-structured interview guide based on key issues from the professionalism literature. Ethical approval and individual written consent was obtained. Interviews were audio taped, transcribed and analysed using open and axial coding techniques.

Conclusions: Findings provide insight of GPRs’ perceptions of examining professional knowledge (‘keeping up to date’ versus ‘threats from new professional roles’), autonomy (‘maintaining professional independence’) and quality of service (‘chasing points’ versus ‘going the extra mile’).
90/P12 Patient perception about aspects to define a graduate alumni as a good doctor

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Background: Patient perception is an important issue to evaluate professionalism in graduate alumni beyond the health and medical education expert’s opinion. We decided to explore which are the most important issues, according to patients, to define a good doctor.

Work done: A previously developed instrument to evaluate academic and professional performance in graduate alumni was adapted for patient application. The final instrument has 5 domains and 40 items with 7 Likert scale options for answers. The instrument was applied to 500 patients coming from an outpatient clinic in one University Hospital, one Private Hospital and three private physicians’ offices. Descriptive statistics were used to summarize the results. 60% was used as the cut point to define the answer as significant.

Results: In our study, human values, ethics and communication skills are the most important issues for patients to define a good doctor. Other aspects, University, academic position, knowledge of health system, second language and health institution affiliation, are considered less important.

Patient’s perceptions agree with health and medical education experts’ opinion previously found.

Take-home message: It is important to take into account the patients’ perception to define the competences that graduated alumni must have to become a good doctor.

90/P13 What students know about ethics: common sense or legal aspects in medicine?

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Background: In our program we introduced aspects about medical ethics along the curriculum. With the Progress test we recognized the knowledge for these issues were high among the students.

Work done: The 2006 PT edition (N= 681) presented five questions about ethics, three for common sense and two about legal and professional requirements. The common sense questions for this sample were considered of medium difficulty (0.34 to 0.65) and the mean score ranged 30% (1st year undergraduate) to 63% (6th year). Those questions related to legal issues were considered of higher difficulty (0.74 to 0.81 ) and the PT respondents scored very low, even among the 6th year undergraduates.

Conclusion: These results suggest to increase or emphasize the discussion of such subjects - as an example the national law supporting abortion.

Take-home message: The knowledge of common sense issues could be considered nearly granted but the legal issues have to be taught.

90/P14 Opening the black box of physicians’ ethical reasoning: a qualitative study

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Background: Understanding of physicians’ ethical problem-solving is important to the improvement of ethical education. Unfortunately, little is known about the reasoning strategies that physicians use for ethical dilemmas. This study unveils how physicians differ in their reasoning approaches and resolutions of ethical dilemmas.

Work done: This study used think-aloud method plus structured interviews. An instrument of 15 clinical vignettes that covered the common ethical issues was used to stimulate physicians’ ethical problem-solving. The subjects included ten ethical experts, six PGY-2, and nine year 5 medical students in Taiwan. The sessions were audio-taped and transcribed. Using immersion/crystallization approach, the investigator identified facts, relationships and inferences among facts. The ethical decisions and the reasoning strategies applied were identified and compared among 3 levels of subjects.

Results: The reasoning strategies used with the 15 cases varied, suggesting content-specific. Compared to novices, experts were more accurate in content knowledge, demonstrated compiled/organized knowledge structure, asked for more socio-economic information, and emphasized communicating with the patient and family. Expert-novice differences cannot be found in the speed to decision-making, and their confidence levels of ethical decision.

Conclusion: Teaching/assessing on ethical reasoning process within different cases is as important as educating physicians on the appropriate ethical decisions to be made.

90/P15 Professionalism behaviours: integration into highstakes assessment in Canada

Robert S Lee*, David E Blackmore (Medical Council of Canada, 2283 St. Laurent Blvd, Ottawa, ON, K1G 5A2, Canada)

Background: The Medical Council of Canada (MCC) has anchored its Qualifying Examination (MCCQE Part I and Part II), which is a prerequisite to medical licensure, around behavioural objectives since 1993. The approach focused on the patient’s presentation to the physician, as a clinical expert. In 1998, new dimensions were incorporated into the MCC Objectives, dealing with the competencies around legal, ethical and organizational (LEO) aspects of medical practice. In 2005, they expanded to include cultural and communication (C2) elements. Although professionalism was loosely covered under the C2LEO, it was noted that there was inadequate coverage and that objectives related to professionalism needed to be more explicitly defined in behavioural terms versus generalities.

Work done: In consultation with physicians, the MCC developed a list of professionalism-based behaviours for inclusion and testing on its examinations.

Conclusions: The list of behaviours along with the methods for development and validation will be described. Next steps in implementing these behaviours will also be described.

Take-home message: Licensure assessment in Canada goes beyond a physician’s medical expertise to include elements of professionalism and communication which, while difficult to define and assess, can and should be done to help ensure high quality patient care.
9O/P16 Professionalism and expectations in first year medical students

D C Taylor*, B Royes, E A Jump (University of Liverpool, Centre for Excellence in Teaching and Learning Professionalism in Medical Students, School of Medical Education, Liverpool, L69 3GE, United Kingdom)

Work done: First year students were asked to rank a series of 90 statements on professionalism (Van De Camp et al, Med Teach, 2004. 26(8): p. 696-702) using a Q-sort technique. Students in their first year regard competence, respect, good clinical judgement, protecting confidential information and relationships with other members of the healthcare team as being of prime importance (Taylor et al, AMEE, Keele, 2007). These elements also describe what students require from their pastoral care tutors (Jump and Taylor, AMEE, Amsterdam, 2005). First year students on our 4-year graduate entry programme, felt differently about professionalism from students on our conventional 5 year programme.

Factorial analysis revealed that students on the graduate programme valued elements such as honesty, justice and respect more highly than conventional first year students. The view of graduate entry students is remarkably similar to recently qualified medical graduates.

9P International Medical Education

9P/P1 Evaluation of a new Medical School in International Health

Alan Jotkowitz*, Shirley Rosen, Yaakov Henkin, Carmi Margolis (Medical School in International Health, Faculty of Health Sciences, B.G.U. in collaboration with Columbia University Health Sciences, The Moshe Prywes Center for Medical Education POB 653, Beer-Sheva, 84105, Israel)

Background: The Medical School in International Health was inaugurated in 1998 with the expressed purpose of training physicians for careers in International Health. The purpose of this study is to track and evaluate the graduates of the first three classes of the new Medical School.

Work done: A self-assessment survey was developed and distributed to the graduates via phone, internet and email. Out of 88 graduates information was obtained from 47 (53%).

Results: Mean scores in the cognitive domain was 4.18, 3.52 in the skills domain and 4.32 in the behavioral domain. Lower scores were recorded for record keeping and the ability to follow patients. Female graduates felt they were better at history taking and the latter graduates felt they had better knowledge in International Health. 66% were involved in some aspect of International Health. 96% were satisfied with their choice of studying at MSIH.

Take-home messages: Students of the new medical school were satisfied with their choice and retained their interest in International Health. Areas were identified in which there is potential to improve the curriculum. Long-term follow-up of the graduates is necessary and an effort to reach the non-responders to eliminate bias is also warranted.

9P/P2 How can trainee doctors contribute to medical training and education in international training link programmes in developing countries?

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Background: In East London we have established a very successful multi-professional training exchange programme with Butabika Psychiatric Hospital in Kampala, Uganda and have had a number of senior colleagues from all disciplines visit Uganda to offer skilled input to enable Ugandan colleagues to develop their services. We have received a number of Ugandan colleagues in London to learn more about services also and the programme is of great mutual educational benefit. A number of junior doctors are keen to get involved in this and there are further international links we aim to develop following local trust support in the wake of the recent Crisp report which highlights a need to contribute to supporting colleagues in developing nations. It has not been clear how inexperienced juniors may usefully contribute but we have surveyed juniors to ascertain their views and suggestions.

Work done: Questionaire sent to junior doctors and members of Training link committee and others already involved in the project.

Conclusions: It is hoped that there is real scope for motivated juniors to be directly involved when accompanying more senior colleagues in terms of assisting with teaching and evaluation and also doing supervised training work. It is also clear that there is immense scope for learning about services in different cultures, different priorities and resources and to raise cultural awareness and understanding.

Take-home message: If resources are available (which we have for our project) junior doctors should be enthusiastically welcomed and supported in contributing to such projects alongside more senior staff.

9P/P3 Languages and cultures – possible barriers to international exchange for medical students?

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Background: Many students at Karolinska Institutet, Stockholm, Sweden participate in international exchange, but many choose not to. Knowledge gained during studies abroad creates a better understanding of health organizations and the profession, as well as for patients with different ethnic back grounds. Internationalization is also in line with the Bologna process, and important to encourage and facilitate. The aim was to investigate the knowledge and attitudes towards international exchange and medical language and culture among different student groups at Karolinska institutet.

Work done: In this student driven project, focus group discussions were conducted to identify temptations and obstacles related to medical language, culture and international exchange. A questionnaire was created based on the focus group discussions and similar studies found. The questions were mainly addressing knowledge and perceptions related to medical language and culture in an international setting. Medical and nurse students at Karolinska Institutet answered the questionnaire.

Results: The results will be discussed in relation to learning in a clinical and international setting.
Conclusion: In this novel approach we investigate students’ knowledge and attitudes towards medical language, culture and international exchange. The knowledge gained from this project will be useful for planning of international exchanges, transcultural learning and other intercultural activities.

**9P/P4 Does medical education from abroad influence professional practice and career?**
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Background: This paper investigates whether doctors educated abroad diverge from doctors educated domestically in early career. More specifically, we look at Norwegian doctors graduated abroad and compare them with Norwegian doctors graduated in Norway, examining self-reported skills and career outcomes. As much as one in three Norwegian doctors are graduated abroad, hence it is interesting to analyze whether professional training and socialization abroad have impacts on professional practice and career.

Work done: 225 doctors graduated abroad and 314 doctors graduated in Norway answered a questionnaire 2.5-4.5 years after graduation.

Results: Those graduated abroad report better communication skills, few significant differences in self-reported clinical skills appear. Those graduated abroad perceive education from abroad as an advantage regarding theoretical skills, but not concerning practical skills, clinical communication and standing among colleagues. Regarding career, those who have studied abroad are more likely to be leaders, they work longer hours and have higher wages. Those graduated in Eastern Europe differ most from domestic graduates.

Conclusion/Take-home message: During early career in the Norwegian labour market, Norwegian doctors educated in different countries, and professionally socialized in different regimes, do differ in professional practice, and do have different career achievements and labour market outcomes.

**9P/P5 Professional-, cooperation- and communication skills of internationally trained medical doctors in Norway**
Stefan Kutsche*, Godfrey Pell, Ole T Berg (Ulleval University Hospital, Dept. of Pediatrics, Oslo, 0407, Norway)

Background: For international medical graduates (IMGs), the challenge is to master and to embrace the new standards of practice. The aim was to determine the quality of primary health care provided by IMGs as experienced by their Norwegian professional peers.

Work done: Information from 327 questionnaires was used to compare professional and communication skills of IMGs with Scandinavian doctors. IMGs were grouped according to their place of education, Western Europe (WE), Eastern Europe (EE), USA, Canada, Australia (UCA) and rest of the world (ROW). Comparative data were combined with empiric-qualitative data.

Results: IMGs trained in EE and ROW had inadequate language and communication skills. Poor communication skills are a very or fairly serious problem for patients (5%), and may put patients at risk (4.6%). In medical knowledge and medical skills, the doctors from EE and ROW compare unfavorable with doctors from WE and UCA, especially in the worse category. In cooperation IMGs have large worse categories, but EE and ROW compare relatively badly.

Conclusion: There are greater variations in the “skill mix” among IMGs than among their Scandinavian trained colleagues. The main problem identified is inadequate language and communication skills.

**9P/P6 The Sudanese Physician Reintegration Program**
S Shannon*, R Crutcher, J Baumber, R Parent, J Clayton, D Duop (University of Calgary, Alberta International Medical Graduate Program, Health Sciences Centre, Rm. G212, 3330 Hospital Drive NW Calgary, Alberta, T2N 4N1, Kenya)

Background: South Sudan is one of the world’s most medically underserved regions. The University of Calgary and Samaritan’s Purse (a Christian relief and development organization) provided an upgrading program for 15 Sudanese physicians living in Canada who wished to return to Sudan. All trainees were born in South Sudan, relocated to Cuba as children for education (eventually including medical school), then relocated as refugees to non-medical jobs in Canada.

Work done: A 9 month, Sudan-relevant program took place in Calgary in 2006. Formal evaluation of knowledge, clinical skills and English language proficiency occurred at program commencement and termination. Training included interactive presentations, small group work and supervised patient experiences. Curricular content included basic clinical skills, tropical medicine, clinical reasoning and professionalism. A program in language upgrading and personal growth paralleled the medical curriculum. Fourteen are now in Kenya doing further supervised clinical training. An external program evaluation was positive.

Conclusion: This pilot program provided a foundation for Sudanese physician reintegration.

Take-home message: A unique collaboration has been created to increase physician capacity for the south Sudan healthcare system. Experience gained from this educational collaboration could be useful for other initiatives seeking to help some of the world’s most underserved.

**9P/P7 “A Mission Requires Completion”: an investigation of the motivations of Cuban-trained Sudanese Doctors returning to South Sudan**
R Crutcher*, J Finlay, N Drummond (University of Calgary, Alberta International Medical Graduate Program, Health Sciences Centre, Rm. G212, 3330 Hospital Drive NW Calgary, Alberta, T2N 4N1, Canada)

Background: In 2006 the University of Calgary’s Faculty of Medicine partnered with Samaritan’s Purse, a Christian aid organization, to help fifteen south Sudanese refugees return to their war-torn homeland to provide medical care to the region’s people. Sent as teenagers from an Ethiopian refugee camp in 1985/86, they completed medical school in Cuba between 1998 and 2003 when they were granted safe haven in Canada while they awaited peace and the opportunity to return.

Work done: Using rigorous qualitative methodology, we conducted two sets of ethnographic interviews during the nine-month medical, English language, and religious upgrade training, focusing on biographical narratives and factors motivating the desire to practice medicine in south Sudan following a twenty-year absence.
Results: Goals in returning to South Sudan included: reuniting with family and friends, fulfilling their “mission” to apply their education and skills obtained in Cuban schools to the post-war process, and practicing medicine. Motivating factors included acquisition of Canadian citizenship, sense of obligation to those left behind, opportunity, and fulfillment of professional identity.

Conclusions: Contextual factors contributed significantly to the desire to return. Some factors help us understand generalized motivation to practice medicine at “home”.

Take-home messages: Knowledge gained may shape future medical education, recruitment and retention strategies domestically and internationally.

9P/P8 Mansoura-Manchester Programme for Medical Education:
Saeid Abdel Hady*, Ahmed El-Zeki (Mansoura Faculty of Medicine, 26 Safa St, Mohandesen City, Mansoura, 35511, Egypt)
Background: Mansoura University Medical School is one of the largest in Egypt with over 6,000 undergraduates. There are over 1,000 students in each of the six academic years. In the three preclinical years students receive didactic style lectures in anatomy, biochemistry, histology and physiology (years 1–2) and in year 3, pathology, parasitology, microbiology and pharmacology together with laboratory sessions. The clinical course is similarly discipline-based with traditional rotations and some primary care experience.

Work done: In the first instance it is intended that the Manchester curriculum will be introduced for a cohort of 100-200 students, equivalent to 10-20% of the first year intake. Initially the problem-based course (PBL) will run in parallel with the existing curriculum but the intention is to switch to an entirely problem-based course within 5 years. Mansoura started the Manchester programme in September 2006. This presents a challenging target which required a significant programme of staff training, some rewriting of PBL cases, and introduction of the vocational medical learning environment (VMLE/IT system; MedLea).

Conclusion: A change from subject based education system to a problem based medical education requires many modification of the learning environment and staff training.

Take-home message: Mansoura-Manchester programme for medical education is a new PBL system inside a subject based medical school.

9P/P9 Dundee Medicine in Malawi Placements Pilot Study (Concept) - (Project in partnership with University of Malawi College of Medicine and Kamuzu Central Hospital Malawi)
Jon Dowell, Jennifer Harrison, Neil Merryeees* (Tayside Centre for General Practice, Division of Community Health Sciences (CHS), University of Dundee, Mackenzie Building, Kirsty Semple Way, DUNDEE, DD2 4BF, United Kingdom)
Background: Many western medical students visit developing countries during their ‘electives’. However, not only are educational objectives usually ill defined but students often cannot contribute meaningfully to care provision and may even drain scarce local resources. This pilot project seeks to develop and evaluate extended, more ethically based and educationally planned clinical attachments for senior medical students.

Work done: By formalising placements in Malawi we have been able to develop specific educational objectives, argue for the duration to be increased and to transfer ‘teaching resources’ with the students. Thus, students can be prepared to learn and contribute more whilst the receiving unit gains resource from having our students. Key elements: (1) Preparatory teaching during Student Selected Component on global health; (2) Overseas attachments of four months rugling throughout the year; (3) Funding tied to students used to provide facilities for all; (4) Associated health service twinning.

Results: 25% (40) of students expressed interest for 6-8 places/year and we look forward to evaluating educational and clinical impact. (Funded by Scottish Executive for three years.)

Take-home message/Conclusion: Existing electives can be seen as an unethical and inefficient aspect of medical education. It is possible to devise more morally justifiable alternatives which appear to offer greater educational value.

9P/P10 Report on a clinical apprenticeship scheme for refugee doctors
A Smallridge*, Hanadi-Sari Kouzel (REACH North West, Salford Royal University Hospital, Stott Lane, Salford, M6 8HD, United Kingdom)
Background: Refugee doctors have difficulty obtaining their first post in the UK National Health Service (NHS). They have specific educational needs and communication and cultural difficulties adjusting that are different from those of International Medical Graduates.

Work done: We ran 3 month structured placements as unpaid pre registration (Foundation Year 1) doctors at several acute hospitals in Greater Manchester, UK. The doctors worked with the medical team to which they were attached. They attended all the teaching, followed the same on call rota and were subject to the same disciplines as the other doctors at their level. Half-day compulsory teaching sessions were run by REACHE and support with CVs and job applications was provided. Each doctor had two assessments by their clinical supervisors and had a 360 degree appraisal at the end of the attachment by 6 staff from various disciplines.

Conclusions: 18 doctors have been through the programme and 14 have gone directly into paid posts. The project has been evaluated externally and internally and feedback has been overwhelmingly positive – a national roll out is planned.

Take-home messages: Our 3 month educational placement can successfully prepare refugee doctors to work in the NHS.

9P/P11 Establishing a national assessment consortium for the assessment of International Medical Graduates
David E Blackmore*, M Ian Bowmer (Medical Council of Canada, 2283 St. Laurent Blvd., Ottawa, ON, K1G 5A2, Canada)
Background: In Canada, many International Medical Graduates (IMGs) are frustrated by poor information on licensure, the lack of funded postgraduate positions, and provincial assessments with varied scoring and licensure standards. There is a need for a national standard assessment process.
Work done: The Medical Council of Canada, in conjunction with Health Canada and key stakeholders in IMG licensure, has created a National Assessment Consortium (NAC). The consortium is identifying evidence-based criteria for assessing IMGs seeking licensure that is valid, reliable, sustainable and fair.

Conclusion: The NAC is focusing on 1) screening to determine if IMGs are ready for postgraduate training; 2) assessment modules to evaluate performance in a clinical placement to determine if IMGs are ready for independent practice. The key assumption behind both approaches is that assessment must be sustainable, meet accepted standards and can be implemented by stakeholders. A description of the components of each assessment, how they will be implemented and next steps will be described.

Take-home message: The implementation of the NAC will assist Canadian licensing authorities and post graduate programs with licensure and education decisions and will solve the many confusing issues faced by IMGs. The goal is an assessment process that meets the needs of all stakeholders.

9P/P12 International medical graduates look back on their adaptation training for work in the UK National Health Service
A Dass*, B Wilson, J P Fisher (REACHE Northwest, Salford Royal NHS Hospitals Trust, Stott Lane, Salford, M6 8HD, United Kingdom)

Background: REACHE Northwest is an education centre for refugee and asylum seeker health professionals living in the Northwest of England. The centre assists its members to become "job ready" for the UK National Health Service. It offers a wide range of facilities including English classes, medical knowledge and skills updating, clinical attachments and support in adapting culturally to the UK health system. To date over 70 refugee doctors, two dentists and a nurse have been assisted back into professional work.

Work done: To evaluate our work, the views of "alumni" who are now in work were sought. Video interviews were carried out. Particular focus was paid to areas in which international doctors felt they faced difficulties: including social, financial and cultural hurdles. A qualitative assessment of how REACHE alleviated such problems and prepared members for work in the UK was made.

Conclusions: The resulting video gives a valuable insight into how centres, like REACHE, can improve the integration of internationally trained doctors into different health care systems. It provides a useful teaching tool for future international medical graduates, highlighting the obstacles their colleagues have already overcome.

Take-home message: International medical graduates should be supported during the adaptation process.

9P/P13 Implementation of a near-peer advisory network for migrating physicians
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Background: For physicians migrating for advanced training, an invaluable source of practical advice lies with other physicians who have recently migrated and successfully adjusted to their new medical environment and culture. However, newly arriving IMGs often have no way of contacting these potential advisors until they actually arrive in the host-country.

Work done: ECFMG has established a pilot web-based resource which allows a subset of IMGs coming to the US to identify IMGs currently in or having recently completed postgraduate medical training in the US, to select advisors who provide the best match based on country of origin, medical specialty, family status and other criteria, and begin direct e-mail communications months prior to arrival.

Results: In excess of one thousand physicians bound for the US for advanced training now have access to practical advice and information from well matched, qualified advisors to begin assisting them with their moves and transitions well before their arrival.

Conclusion: With appropriate design and internet access, advisor networks to assist migrating physicians are feasible and practical and provide a very useful resource.

Take-home message: Modeling the ECFMG prototype for the US, similar advisor networks can and should be established for physicians migrating to other countries.

9P/P14 Implementation of BaMa structure: The Dutch experience
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Background: Implementation of the Bachelor-Master structure is one of the action lines of the Bologna Process. As it is quite complicated to project the BaMa structure on undergraduate medical education, not many countries have started the implementation yet. The Netherlands is one of the first countries that has voluntarily agreed to implement the BaMa structure in undergraduate medical education. Most Dutch faculties have recently started a two-cycle-structure curriculum, some are still considering the best way to implement the BaMa structure in their curricula.

Work done: In this short communication we will demonstrate how each faculty has implemented the BaMa structure in their curriculum. We will discuss the opportunities and threats of BaMa in undergraduate education and show from our own experience as students what the strengths and weaknesses of the BaMa structure could be in medical education.

Conclusions: We will give suggestions on how to implement BaMa in the undergraduate curricula and outline the Strengths, Weaknesses, Opportunities and Threats of the BaMa.

9P/P15 Bologna needs study counseling in medical education. The Flanders (Belgium) Case
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Background: To reveal the introduction of educational path counseling (EPC) in all Flemish universities and its use for all medical students in Europe.

Work done: At the Faculty of Medicine and Pharmacy of the Vrije Universiteit Brussel the advice of a Full Time Study Counselor is open to all (potential) students, national and international. As the job title says, the EPC deals with any questions or challenges in connection with the educational path. Medical students may need clear information on the impact of the Bologna Declaration and Process with regards to their studies and professional possibilities, a tailor-
made educational path, an individualized study program, exemptions or retakes. They may have difficulties in their choice among several Masters once one has earned a Bachelor's degree.

Conclusion: The 'EPCs' are key persons for the recognition of study periods in a Flemish Medical Faculty undertaken by mobile European medical students. We would like to plea for a European network of these 'EPCs'.

9P/P16 Redesigned curriculum Of PhD studies

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Background: The redesigned curriculum of PhD study is launched at the Faculty of Medicine Novi Sad in the school year 2006/07 as a step toward harmonization with the European academic environment.

Work done: The PhD studies are linked with graduate 1-year-academic studies (60 ECTS), and present the basis for the academic career. The structure of new PhD curriculum incorporates three cycles. The first cycle (1st semester) encompasses mainly general courses and methodology of research-scientific work. The second cycle (2-3 semester) is focused on specific scientific research, offering an introduction in the management of a research project, and implying an active involvement in research-scientific activity. The third cycle (4-6 semester) is dedicated mainly to an individual elective course and chosen research methods, as well as to production and publication of Doctoral Dissertation.

Conclusions: We will present the curricula of three categories of PhD study offered at the Faculty of Medicine Novi Sad, i.e. research studies, clinical studies and public health studies. Also, we will give the outlines of newly introduced study programs in Pharmacoconomics, Biomedical Engineering and Medical Law.

9P/P17 Respect, collaboration and friendship - a mental health link between the UK and Uganda

Cerdic Hall*, Nick Bass*, Dave Baillie* (East London and The City Mental Health Trust, 22 Commercial Street, E1 6LP, United Kingdom)

Background: The Butabika Project is a partnership between East London and the City Mental Health Trust (ELCMHT) and Butabika Mental Hospital in Uganda. The project aims to build the capacity of an under-resourced Ugandan health system whilst giving ELCMHT staff professional development opportunities.

Work done: The Project has developed an exchange programme for all health disciplines. Visits to Uganda have focused on training and service development particularly in areas of alcohol misuse and children's services. In 2006 4 Ugandan nurses visited the UK as Commonwealth Fellows. They were placed within Community, Child and Adolescent and Psychotrauma services where they received support and experience.

Results: The benefits of the Link occur at many levels. For Ugandan staff the benefits include increased knowledge, skills and expertise in specialist areas, knowledge of alternative methods of working with mental health problems, the development of new protocols and services and increased cultural awareness. The consequent impact on patient care can be found with staff spending more time with service users, utilising more skills and offering a greater range of services. For ELCMHT staff, there have been gains with greater confidence, improved teamwork, greater adaptability, the promotion of innovation and improved cultural awareness.

Conclusions: The Link is a powerful staff retention tool that promotes social cohesion and demonstrates the Trusts' commitment to broader social issues.

Take-home message: Health Links are a powerful tool to not only bring about positive change in under-resourced countries but are also a valuable staff development method in their own right.

9P/P18 The University of North Dakota School of Medicine and Health Sciences/Norway International Medical Student Exchange Program

Linda M Olson, Robert Beattie and Pamela Knudson (University of North Dakota School of Medicine and Health Sciences, 501 N Columbia Rd, Box 9037, Grand Forks, North Dakota 58201, United States)

The poster details the University of North Dakota School of Medicine and Health Sciences/Norway International Medical Student Exchange Program. The purpose of the exchange is: 1. Provide opportunities for medical students to experience general medicine in a different country/continent; 2. Encourage international exchanges of medical information and techniques; 3. Provide medical students with an experience in alternatively funded delivery of medical services; 4. Guide medical students to develop an individual education plan, which includes working with American/Scandinavian people; 5. Develop brief internships at clinical practice centers, rural country practices, or urban practice centers in Norway and North Dakota. Over two dozen American and Norwegian students have participated in the program since 2001. Collective interaction between the Norwegians and Americans has allowed for a rich exchange of their similar and diverse traditions. Today, Americans and Norwegians are faced with a number of similar health-related problems. The UND/Norwegian medical student exchange program examines these issues, giving some comparison to North Americans and Norwegians and an outlook for medical practices in the 21st century. The growing interest for the program is spurred by students becoming acquainted with one another and as personal connections build into friendships.
10A1  How can we prepare students for the information flood?

Paul Glasziou (Centre for Evidence-Based Medicine, Department of Primary Health Care, University of Oxford, UK)

We live in an information and research revolution, and are suffering overload. Approximately 400,000 references – including around 20,000 randomised trials – are added to MEDLINE each year. And there are no signs of the growth slowing. So how can train future clinicians to keep up to date with new developments or to fill knowledge gaps they identify during day-to-day practices? Evidence suggests that most of the billions of dollars invested yearly in traditional continuing medical education does not help. There are no simple solutions to this problem. However, there are several barriers that may be part of a multifaceted “solution”. First we need to collectively recognise the problem in our own daily clinical or teaching work. Second, all those involved in health and health care require basic skills in finding, appraising and applying evidence. Third, we need better summaries, syntheses, and access to evidence wherever and whenever it is needed. Fourth, we need to create the time for this change by reducing current ineffective means of knowledge transfer.

10A2  Students as a (valuable) resource

Jan Hilgers¹, Emily Rigby² and Paul de Roos³ (¹University of Cologne, Germany; ²Bristol University, United Kingdom; ³VU Medical Center, Amsterdam, Netherlands)

In recent years students have become well respected partners of medical schools working on continuous innovation and reform of medical education. However, few faculties subsidise their students to attend international student meetings or professional conferences which empower them for further international collaboration, restricting the contribution students can make. As one of the key stakeholders in the field this may halt progress as a whole.

Exemplary for international medical students' initiatives we present the series of Bologna Process follow-up conferences organised by the International Federation of Medical Students' Associations (IFMSA) and the European Medical Students' Association (EMSA) which have taken place since 2003. These meetings have resulted in widely recognised policy statements and a consensus outcome-based European Core Curriculum from the students' perspective.

Investing resources in student initiatives and extra-curricula activities provides the opportunity for the next generation to contribute to shaping the future of the health care system they will be working in.