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Pre-conference Workshops
Saturday 30 August

PCW1
High stakes, low stakes, the proof is in the pudding: preparation for quality SP programs

ASPE is pleased to partner with AMEE for a full day of SP related pre-conference workshops facilitated by several members of ASPE’s International Committee.

Presenters: Peter Cantillon (NUI Galway), Cate Nicholas (University of Vermont), Devra Cohen-Tigor (The Mount Sinai School of Medicine) and Karen Barry (University of Birmingham)

Introduction: Overview of the topics of the day and their integration into SP programs and assessments


Simulation based assessments have been around for decades. However the test scores utility are only as good as its tools and evaluators. Therefore, the reliability and validity of the assessment may vary greatly based on these two important test components. This workshop will focus on the creation of the assessment instrument. It will provide attendees with a process for developing checklists based on best/better practices in medical education, a clearer understanding of reliability and validity as it relates to instrument development and use as well as the opportunity to practice using a modified Delphi method to assess validity on SP communication and interpersonal skills checklist.

Part 2: The preparation of SPs for physical examination skills training. Most medical schools have established communication skills training programs using simulated patients. However, many non North American schools have not yet taken the next step, the use of simulated patients to teach physical examination skills. This workshop aims to provide a beginner’s guide to how simulated patients can be trained to simulate physical signs. The workshop will begin with a group developing a list of physical signs that they believe can be simulated. Participants will then be shown video examples of SPs simulating physical signs. Following a brief discussion of the video examples, participants will be shown a generic training/coaching schedule for simulated patients who are being prepared to simulate physical signs.

Part 3: Adding spice to learning procedures: combining SPs with procedural training. (This session is based on the pioneering work of Roger Kneebone et al at Imperial College, London). The term procedure refers to physical skills that are used for diagnostic or therapeutic purposes. They include simple actions such as taking a blood pressure and venepuncture as well as more complex skills such as male catheterization etc. They are often taught on plastic models in a manner that omits the essential associated communication skills. This workshop aims to use an idea described by Kneebone et al. to combine SPs meaningfully with learning procedures using plastic models. This workshop is intended for faculty responsible for communication skills checklist development in formative and or summative simulation assessments.

ASPE (Association of Standardized Patient Educators) is an international organization for professionals in the field of Standardized Patient methodology that was developed in 2001. The mission of the Association and its members is to promote and support the development and advancement of Standardized Patient (SP) education and research in the Health Sciences.

PCW2
The many challenges of clinical teaching and possible solutions: a staff development workshop for teachers in the clinical environment

Subha Ramani (Boston University School of Medicine, Boston, USA) and Sam Leinster (University of East Anglia, Norwich, UK)

Teaching in the clinical environment is a demanding, complex and often frustrating task, a task many clinicians assume without adequate preparation or orientation. Most clinical teachers around the world have received rigorous training in medical knowledge and skills but very little in teaching. Teaching in the clinical environment is dependent on several factors such as patient illness and emotion, personal experience, teaching role-models, learner levels and learning styles, individual teaching styles and favourite techniques. In this workshop, we will discuss the challenges of teaching in the clinical environment, application of relevant educational theories to the clinical context and practical teaching tips for clinical teachers with emphasis on the following key areas:
1. Application of learning theories to clinical teaching; 2. The microskills of teaching or the one minute preceptor; 3. Bedside teaching; 4. Assessing performance of clinical trainees; 5. Feedback. We will use a combination of didactic presentations, group discussions, role play exercises, videotape review, and personal goal setting. Faculty who teach in clinical settings, inpatient or outpatient, will benefit from this workshop. Educators who design staff development will find the educational strategies as well as content useful in their own planning.

PCW3
An overview of common Item Response Theory (IRT) models and related concepts (Part 1)

André F. De Champlain and Ronald J Nungester (National Board of Medical Examiners, Philadelphia, USA)

Item response theory (IRT) models have been widely used by medical schools and testing organizations for several decades in all phases of the development of examinations and analysis of response data. IRT models are useful for assessing the quality of test items, in assembling test forms, for score equating, and to determine whether an examination is well-targeted to the proficiency level of candidates. The purpose of the first part of this workshop is to provide participants with an overview of common IRT models, including the Rasch model, as well as two- and three parameter logistic models. In addition to outlining these models, a number of IRT concepts will be explained via practical examples. Finally, common applications of IRT in various aspects of medical education and assessment will be provided. Though this workshop is at an introductory level, participants should have some knowledge of classical test theory and basic statistics. Participants who want more hands-on experience of IRT may wish to attend Part 2 this afternoon (PCW8).
Continuing Medical Education: Tips for effective course design
Jocelyn Lockyer (University of Calgary, Canada) and Joan Sargeant (Dalhousie University, Canada)

Developing educational programs for practicing physicians can be complex. Practicing physicians are a heterogeneous group. They have diverse medical school and post graduate training. Their scope of practice and settings can be as different as their reasons for attending a short course. During this workshop, we will draw upon the 'Kern' model for curriculum design which considers problem identification, needs assessment, goals and objectives, educational strategies, implementation, and evaluation and feedback as a framework for developing short courses. Participants and facilitators will share their best tips for course design, discuss effective and efficient ways to conduct needs assessments, critique needs assessment tools and data, examine the course formats most likely to result in practice change, consider tools to promote practice reflection and suggest ways that courses can be evaluated to assess their congruence with course objectives. Participants will leave with a practical template to use in planning their CPD programs.

An outcomes based approach to medical education in Europe – beyond the Tuning Project
Allan Cumming and Michael Ross (University of Edinburgh Medical School, Edinburgh, UK)

The Tuning Project for Medicine, funded by the European Commission, has generated consensus on a set of learning outcomes for primary medical degrees in Europe. This workshop will challenge participants to consider the potential implications of adopting this framework in relation to their institutional or national medical education programmes. By the end of the workshop, participants can expect to have an enhanced understanding of:

- The essential principles of outcomes-based medical education (some preparatory reading on this subject would be helpful e.g. Harden RM. Developments in outcome-based education. Medical Teacher, 2002; 24: 117-120.)
- The processes involved in creating a learning outcomes framework
- How to implement a learning outcomes framework at degree programme level
- The implications of such an approach for teaching, learning and assessment
- The use of learning outcomes as part of quality assurance and quality enhancement processes
- The potential role of a regional outcomes framework, such as the Tuning outcomes, as a tool to promote harmonisation in medical education

Although issues around outcomes-based education are relevant across the spectrum of medical education, the workshop will be particularly suited to those who are, or may become involved in the planning and implementation of medical degree programmes.

Role-playing a malpractice lawsuit; stimulating reflection on professional conduct
Benno Bonke (Erasmus University Medical Centre, Rotterdam, The Netherlands) and Veronica J. Selleger (VUmc, Amsterdam)

Professional conduct has become an increasingly important subject in medical education. At Erasmus MC, we rewrote an authentic Dutch malpractice lawsuit, into a role-play for students and young doctors. In a simulation of this lawsuit, the role-players either represent the parents of a deceased adolescent, the family physician, or members of the General Medical Council's professional conduct committee. Participants will take part in this simulated lawsuit. In small groups they will study their given roles plus information, in accordance with the party they represent. After some time, the groups will reconvene and role-play a session of the General Medical Council's professional conduct committee in two parallel sessions. The role-play will be closed with the Council's verdict upon this case. In a round-up session, the various relevant aspects of the case, and its relevance for educational purposes, will be highlighted and discussed. Role-playing a malpractice lawsuit enhances empathy for different parties and offers insight into the mechanisms of malpractice. The workshop is intended for students, teachers, or curriculum designers interested in professional conduct of physicians.

Fitting Item Response Theory (IRT) models and interpreting output with your data set (Part 2)
André F De Champlain, Marc Gessaroli (National Board of Medical Examiners, Philadelphia, USA)

The purpose of the 2nd part of this workshop is to allow participants to fit IRT models with data sets of their own choosing and to provide assistance in interpreting resulting output. Participants will be asked to download a free student version of a popular IRT program in preparation for the workshop. Emphasis will be placed on interactive exchanges amongst attendees and presenters in the hopes that all present can gain useful, practical information from the data sets and related research questions discussed. Please note that this session is reserved for either participants who completed the morning IRT session or those who already possess a basic understanding of IRT modeling.
PCW9
Program Evaluation – Learning how to determine whether your educational course, clerkship, or residency training program is “successful”
Paul A Hemmer, Steven J Durning and Louis N Pangaro (Uniformed Services University of the Health Sciences, Bethesda, MD, USA)
Evaluating an educational program is a core responsibility for any course, clerkship, or residency director. Accreditation organizations are calling for programs to link educational processes with patient care outcomes. This workshop is designed to help participants understand how they can convert regularly used learner-based assessment products (e.g., grades, tests, and evaluations) and program characteristics into curricular outcomes. We will discuss a model that uses both quantifiable and qualitative information collected from varieties of sources that are “Before,” “During,” and “After” an educational program. In the first 90 minutes, we will use an interactive case-study method, to illustrate questions that could be posed to examine for both short-term and long-term educational program success, the types of data that could be collected, and methods for analyzing the collected data. In the second 90 minutes, participants will work in small groups to explore the types of questions they currently face in terms of evaluating their educational program, with examples sought in advance from workshop participants; this will be followed by a large group discussion of methods to answer the questions and possible research opportunities. By the end of the workshop, participants will be able to: (1) Understand the principles of programmatic evaluation for both existing and new programs; (2) understand a framework for programmatic evaluation that uses before, during, and after course measures; (3) understand process measures and product measures for programmatic evaluation; (4) define essential and desirable parameters for evaluation of their own programs.

PCW10
Developing management and leadership skills in “academic people”: Meetings, projects and collaborations
Henrique M G Martins (Universidade Beira Interior, Portugal)
Can “academics” manage? What management and leadership skills can academics in medical schools/health organizations learn which may help them be more effective? This workshop will explore useful human resources management related concepts and analyse how the work of “academic people” can be enhanced with their application. These skills are useful to common tasks as organizing/contributing to a meeting, running a project or being part of a collaboration initiative with another organization. Basic knowledge on motivation, personalities, leading different personal roles in teams and negotiation tips will be provided. Depending on the level of participants’ knowledge, only the necessary contents for exercises to happen effectively will be covered at the workshop, but materials on teamwork, decision-making and negotiation tips will be sent to participants beforehand. Contents will be integrated with the exercises as participants will be helped to look critically at how meetings and projects are run daily in their academic settings and how this can be improved. Collaboration projects between Academics, (face-to-face and internet-based) will be discussed, as well as strategies to obtain better outcomes and explore technologies for collaborative working. Some time will be left aside to discuss ongoing models of management and leadership education in medical schools. The target audience are academics working in medical schools/healthcare organizations involved in clinical or non-clinical research and part of the medical education efforts, not necessarily but also not excluding medical educationists.

PCW11
From scholarly activity to scholarship: making the most of what we do in medical education
Yvonne Steinert (McGill University), Meridith Marks (University of Ottawa), Linda Snell (McGill University) and Jason Frank (University of Ottawa, Canada) On behalf of the Canadian Association for Medical Education
Scholarship is a fundamental mission of all medical schools. However, although many educators are involved in scholarly activity, we are often not able to translate our efforts in teaching, curriculum development and innovation, and educational leadership and administration into scholarship. The goals of this workshop are to: (1) define educational scholarship and differentiate scholarship from educational excellence; (2) describe the benefits of educational scholarship for teachers, learners and the institutions in which we work; (3) discuss how medical educators can foster scholarship in their own settings; and (4) help participants to analyze their educational activities and identify strategies to transform these activities into scholarship. It has been said that “scholarship serves as the building block for knowledge growth”. By the end of this interactive workshop, participants will have developed an action plan that will enable them to communicate, evaluate and disseminate some of their educational activities and begin to foster educational scholarship among their colleagues.

PCW12
How am I doing? Developing effective feedback skills through deliberate practice
Sharon K Krackov (Albany Medical College, Albany, USA), Henry Pohl (Albany Medical College, Albany, USA), Sally Santen (Vanderbilt University School of Medicine, Nashville, USA) and John H Shatzer (Vanderbilt University School of Medicine, Nashville, USA)
Feedback is a crucial step in the teaching/learning process. Without feedback, mistakes are uncorrected, good performance is not reinforced, and clinical competence may suffer. Both learners and teachers recognize the importance of feedback, yet most learners say their feedback is inadequate and many people have difficulty giving feedback, especially when it centers on problem areas. When they are asked to suggest specific educational development activities that would be useful, most faculty say they would like to have help with feedback. At the end of this workshop, participants will be able to: (1) Describe important components of an effective feedback session; (2) Choose an appropriate setting and language for giving feedback; (3) Observe and practice giving and receiving feedback; (4) Develop an action plan for improving feedback in their own setting. This interactive workshop will involve plenaries, brainstorming and role play and is designed for faculty at all levels who are involved in teaching and assessment of medical students, residents and practicing physicians.
Workshops have been presented at previous AMEE conferences on the relevance of Emotional Intelligence (EI) to health leadership and EI and some reflections and self application. This workshop builds on these workshops and describes and develops recent thinking and application in clinical and health leadership. The workshop initially briefly explores the main models of EI through the use of lecture, small group discussion and scenario analysis. Participants will be presented with scripts and scenarios to demonstrate and further understand EI application. Participants will be encouraged to write and develop their own case scenarios so as to integrate personal learning. Concluding comments will involve discussion on how EI can be integrated into participants’ medical or continuing professional development curricula. Learning outcomes: 1) Summary understanding of the main models in emotional intelligence; 2) Personal and reflective experience on EI and its potential to be used in medical education and practice. 3) Understand and experience the use of scripts and scenarios in discussing EI Models and their application.
PCW14  
Evaluation of the Undergraduate Veterinary Curriculum  
Vicki Dale, Debbie Jaarsma and Kim Whittlestone (Veterinary Education Worldwide - VIEW)  
As in medical education, veterinary schools are undergoing continual change to improve the quality of their undergraduate curricula, in order to fulfill professional and societal requirements. To monitor the quality of the curricula, different methods and stakeholders have to be involved in the evaluation processes. The workshop will focus on the evaluation processes of Day One competencies, or equivalent outcomes. In recent years, increasing emphasis has been placed on the need for veterinary graduates to possess good business skills, including management, leadership and communication skills. Emphasis has also been placed on the need for effective lifelong learning strategies with the inclusion of evidence based veterinary medicine. Therefore, the workshop will pay special attention to the evaluation of these ‘generic’ competencies. The event will allow presenters and delegates to inform others about their experiences with strategies of rigorous curriculum evaluation. Although the workshop places a strong emphasis on veterinary education, colleagues from other professions are warmly welcomed to attend.

PCW15  
Preparing medical education manuscripts for journal publication  
William C McGaghie and Diane B Wayne (Northwestern University Feinberg School of Medicine, Chicago, USA)  
Professional opportunities and advancements stem from publications. Writing reflects the outcomes of one's scholarship. Good writing benefits scholars' scientific fields, scholars' specific audiences, and scholars themselves. Yet most scholars struggle with writing, even those with many publications. Scholarly writing is very hard work. The acquisition and maintenance of writing skill is a result of sustained, deliberate practice, not chance. This pre-conference workshop will address ways to improve scholarly writing. Participants will: (1) Recognize that professional writing involves fitting one's message to an audience and an outlet; (2) Practice and critique manuscript planning and organization; (3) Practice professional writing deliberately; (4) Engage in peer review of writing samples; and (5) Review Instructions to Authors from several medical education journals. Following introductions, we will probe the problems that workshop participants encounter when writing. Then we will present a general overview of the writing process: strategy, planning, outlining, writing, and review/revision. We will focus on the practical skills needed for each phase. Participants will have opportunities to practice professional writing deliberately and to engage in peer evaluation of writing samples. The workshop will conclude by reviewing the expectations and requirements of several medical education journals by studying their Instructions to Authors. This workshop is intended for individuals who are interested in learning about and improving their skills at writing manuscripts for publication in medical education journals. Participants registering for the workshop will receive a copy of the advance reading: Parsell G, Bligh J. AMEE Guide No. 17: Writing for journal publication. Medical Teacher 1999; 21(5): 457-468.

PCW16  
The Practice of Computer-Based Assessment in medical education  
Willie Hols-Elders, Peter Bloemendaal, Marianne Schade and Sam Verdoes (Netherlands Association for Medical Education, Special Interest Group E-Learning)  
Computer-based assessment in medical education was introduced in the Netherlands several years ago. Different medical schools have used different applications over the years. All have become more and more convinced of the benefits of this type of assessment, that now focuses on a few programmes that have proved adequate and user friendly. In this workshop we will present an overview of these programmes, notably Egel, QMP and TestVision, currently in use and share our experiences in different educational settings. There will be ample opportunity for discussion and demonstration. The workshop is targeted at educators interested in the use of CBA in Medical Education. No previous experience in CBA is necessary.

PCW17  
Obstetric simulation in postgraduate training and its integration into the workplace  
Dina Bisson (Southmead Hospital, Bristol, UK) and Jette Led Soerensen (Rigshospitalet University Hospital, Copenhagen, Denmark)  
Simulation is becoming an integral part of medical training, but there is a danger that the technology is becoming more important than the learning. Simulation is an educational device that affords a number of advantages over other methods of learning, but a multi-million pound centre or high (technology) fidelity mannequins are not always needed. It is essential to integrate simulation into the curriculum and postgraduate training, and hence practice at the work place. There is a tendency for an overwhelming focus on large simulation centres with expensive and complex mannequins. These centres are expensive and although they can be useful for teaching and learning, there are sparse data demonstrating their effectiveness, or even their relative advantages over other methods of low fidelity teaching. Simulation has a broad spectrum and it can be done locally with patient actresses and the combination with part task trainers and simple models is relatively cheap and appears to be effective (Crofts, Bartlett et al. 2006). High Technology is not the same as High Fidelity; simulation includes a huge variety of drills, role playing and part task trainers. Training locally and integration in to in-house training programme and training in simulation centres are not mutually exclusive; they offer different advantages and disadvantages. The aim of the workshop is to discuss and demonstrate the combination of patient actresses with part task trainers, obstetric drills and a variety of obstetric simulation ideas that can be used either locally, with integration into departmental work, or be used in simulation centres. Research midwives and research junior doctors will be involved in presentation and work at the workshop.
PCW18
Introductory workshop on quantitative data analysis
Arno Muijtjens (University of Maastricht, Netherlands)

How to extract information from data? How to assess the uncertainty concerning the generalization of conclusions? These questions indicate the focus of the workshop. By working through an example we will become acquainted with some major statistical concepts in relation to description and inference. We will explore the presentation of data, measures of central tendency and spread, sample and population, probability and probability distribution, uncertainty and generalizability of results, estimates and standard errors, statistical testing (two-sample t-test), and statistical significance. The workshop is not aimed at providing recipes for statistical analysis, but is aimed at increasing our understanding of concepts by analysing a specific example in depth.

PCW19
Humour and multimedia as teaching tools for The Net Generation
Ronald A Berk (The Johns Hopkins University, Baltimore, USA)

This Net Generation of medical students (aka “digital natives”) eschew traditional lecture, textbook-based teaching methods. These students are super-savvy with technology and are experiential, participatory, visual, kinesthetic learners who crave interaction with other students and you. Their world evolves around music, movies, music videos, PC and video games, and TV programs. They function at “twitch” speed. You need to leverage these multimedia sources as teaching tools. This session will illustrate how to use music, movie clips, parodies of TV programs, games, and humour as systematic teaching strategies. They draw on the theories of multiple intelligences by Gardner, Harden, and Goleman and the research from neuropsychology, education, commercial advertising, humour, music, and communications. The results of 70+ studies over 45 years of research will be reviewed. Whether you’re a newbie or veteran medical educator, you will find new ideas to apply to your courses to connect with your students. This presentation “boldly goes where no academician has gone before, maybe.” You can’t afford to miss this session.

PCW20
Clinical Learning Embedded in Rural Communities (CLERC): aligning student engagement and learning environment by programme design
Denese Playford and Moira Maley (The Rural Clinical School of Western Australia, Western Australia)

This workshop is for teachers considering or working in primary care and community health settings, with practical examples from rural and remote Australia. By the end of this workshop, participants will: 1 Be able to discuss the educational features of community which make it a rich learning environment; 2 Identify the range, relative efficacy and resource implications of different teaching methods; 3 Understand the role of learning tools in enabling deep learning in the community; 4 Be able to utilize the principles learned in the workshop to develop a community-based health education curriculum tailored to their own context. The Clinical Learning Embedded in Rural Communities (CLERC) programme was developed at the Rural Clinical School of Western Australia evolving over five years from a tertiary hospital, specialty-siloed context to an integrated primary care model. Its curriculum, teaching/learning methods and assessment match the way in which students encounter patients in the primary care setting. The workshop adopts CLERC as its foundation and uses interactive small and large group activities to engage participants in building a programme to apply in their own setting.

PCW21
Working with content experts to create effective PBL cases
David Cook (University of Alberta, Edmonton, Canada)

There is no doubt that problem-based learning is an effective tool for the education of future physicians, and it is equally obvious that the learning that occurs is in direct proportion to the appropriateness of the portfolio of cases that the students use to trigger the learning. However, while PBL mostly utilizes non-expert tutors, the cases must be written by experts in the content area. The content experts are often only partly familiar with the pedagogical principles of education in general and PBL in particular, but the education experts are often uncomfortable criticizing the extent or nature of the content. This workshop is designed to bridge that gap. By the conclusion of the workshop, participants will have greater knowledge and confidence about writing cases that are effective in inducing student learning, and will be able to create tutor guides that are of maximum benefit to non-expert tutors. The time will be divided between interactive presentation of principles and the actual construction of cases by the participants. The workshop is designed for those interested in case writing either as content experts or as education specialists.

PCW22
Evaluating the evidence
Alex Haig (NHS Education for Scotland, UK) and Marilyn Hammick (Education and Research Consultant, UK)

Critical appraisal of research studies in an accepted part of clinical practice. This workshop looks at how this is done for non-experimental research, especially in the field of educational evaluation. It will draw upon the latest work of the BEME Collaboration and other key organisations that are interpreting and synthesising research in health care sciences education to inform best practice and assist with policy decisions. Sessions will include an overview of approaches to critical appraisal, its role in evidence informed practice and policy making and identifying the challenges educators face judging evaluation designs from a variety of research paradigms, using both quantitative and qualitative data collection methods. Participants will work in small groups with the most recently developed instruments and techniques to analyse significant papers. The session is relevant to faculty at all levels: those wishing to embark upon a systematic review, the teacher or practitioner wishing to evaluate a single paper to inform their own practice and senior managers planning to base future changes in educational policy on evidence. (Note: To get the most out of this workshop it is recommended that participants should have a good command of written and spoken English)
PCW24
Developing a qualitative research project in health professions education
Mathieu Albert, Brian Hodges, Ayelet Kuper, Tina Martimianakis, Nancy McNaughton (Wilson Centre for Research in Education, University of Toronto, Canada)

The field of health professions education is expanding to include a variety of qualitative methodological traditions from the social sciences and the humanities. However, there has been little opportunity to develop a shared understanding of the use and evaluation of these traditions within the field of health professions education. This workshop is intended for individuals with little or no experience with qualitative research. It will introduce participants to a number of qualitative approaches from the social sciences and the humanities. Participants will be shown how to develop a feasible research question and to consider how to theoretically frame and conduct an empirical research project using qualitative methods such as interviewing, focus groups and text analysis. Finally, participants will be exposed to various ways to conduct qualitative data analysis. The workshop will be delivered in two parts. The first part will focus on how to conceptualize a research project using qualitative approaches drawn from the social science and the humanities. The second part will use interactive and experiential activities in large and small groups to allow participants to experience in practice some of the phases of conducting a qualitative research project.

PCW25
Measurement basics
Geoff Norman (McMaster University, Canada)

Perhaps the one area where medical education research has made the most progress is assessment. In turn, many of these advances are based on a sound understanding of the principles of measurement. This workshop will introduce participants to some of the basic concepts in measurement. While some understanding of statistics, and concepts like ANOVA are helpful, the course is targetted at a conceptual level. Topics to be covered are: • Questionnaire design: Item generation; Response options and rating scales; Checklists vs. scales; • Item analysis and scoring: difficulty and discrimination measures; options in creating a total score; Item Response Theory; • Cut scores and pass marks: Norm vs. criterion referenced measurement; Cut score methods for MCQs; Angoff/Nedelsky; Hofstee; Borderline groups method; • Psychometrics: Fundamentals of reliability; Generalizability Theory (basic concepts; G studies and D studies); Validity (construct; concurrent; predictive). At the end of the workshop, participants should have a working conceptual knowledge of each of these areas.

PCW26
Successful Projects in Educational Research (SuPER)
Pim Teunissen (VU University Medical Centre, Netherlands), Klarke Boor (Sint Lucas Andreas Hospital, Netherlands), Tim Dorman (Manchester Medical School, UK), Charlotte Ringsted (Center for Clinical Education, Copenhagen University, Denmark), Albert Scherbier (Institute for Education, Health, Medicine and Life Sciences, University of Maastricht, Netherlands)

Researchers, especially PhD and Masters students, are the new blood and future of medical education. The medical education community should invest in training them properly. Like interaction between junior doctors and clinical supervisors, the collaboration between researchers and their supervisors is pivotal. This workshop sets out to help research students and supervisors anticipate and prepare to meet the needs, obstacles and opportunities they face when working together on medical education research. The workshop will be interactive, encouraging networking and collaboration. It is designed for (future) researchers (Master students or PhD students) and supervisors.

PCW27
Towards the ‘perfect’ OSCE station? A step by step guide to getting the most out of criterion based assessment
Godfrey Pell, Matthew Homer, Richard Fuller (School of Medicine, University of Leeds, UK)

Criterion Based Assessment (CBA) aims to improve standardisation and reliability. OSCEs (Objective Structured Clinical Examinations) are a form of CBA used by healthcare disciplines. However, developing OSCEs can be challenging and setting robust passing standards remains contentious. This interactive workshop begins with a brief introduction of general assessment and OSCE-related issues including, for example: • aspects of checklist design, for example, chunking and number of anchor points; • the use of intermediate grade descriptors; and • the use of simulated patient grades in assessment outcomes. In addition, there will be a description of the set of statistical metrics which can be used to monitor assessment quality at the station level, both contemporaneously and over time, and of how these metrics impact on the aggregate assessment metrics. The remainder of the session will begin with the observation of a series of videoed stations which will allow participants to gain confidence in identifying the strengths and weaknesses of particular stations and different designs of itemised checklists, as well as highlighting factors that contribute to systematic and non-systematic variance. Using video simulation of OSCE stations with relatively high and low levels of assessor variance, attendees will complete the workshop by assessing performance using different checklists. During the session, facilitated group discussion will also explore: • Advancements in constructing reliable, valid OSCE assessments; • “Good” and “Bad” assessment criteria; • The effects of extrinsic factors e.g. assessor training; • The likely impact of specific station characteristics on the family of station level metrics. The workshop will be interactive, encouraging networking and collaboration. It is designed for (future) researchers (Master students or PhD students) and supervisors.

PCW28
Microtutoring: strategies to manage difficult group process
Antoinette S Peters (Harvard Medical School, USA) and Patricia Gruentzig (Ludwig-Maximillians Universität, Germany)

The positive effect of group interaction on the quality of a product, individual learning, patient care, race relations, perspective taking and myriad other outcomes has long been documented. This is not to say, however, that interaction within groups is consistently positive or productive. When group process breaks down the quality of the task is undermined. Such breakdowns arise when one or more members of the group are domineering or quiet, when disagreements become personal and result in hostility, when members spend excessive time off task or when some people work harder than others (or some do no work at all).
Although the facilitator must identify and address problems as they arise, all problems with group process are the group's problem, and therefore the responsibility of the group members, as well as the facilitator, to solve. Moreover, one needs to recognize that attempts to resolve one problem may complicate interaction. Thus, the facilitator must carefully determine both when and how to intervene if the group fails to resolve its own problems. The objectives of the workshop are: 1) To improve skills needed to manage difficult students and problems in group process; 2) To identify strategies to manage typical problems in small group interaction; 3) To serve as peer coaches providing feedback to fellow tutors. The workshop will involve role-play and will be highly interactive. It is intended for tutors, tutor trainers, administrators/course directors. The workshop is at intermediate level and some experience with tutoring is advisable.

PCW29
A critical review of 14 strategies to measure teaching/clinical effectiveness
Ronald A Berk (The Johns Hopkins University, Baltimore, USA)
Student ratings are a necessary, but not sufficient, source to measure teaching effectiveness. How many other sources can you name? How many are being used in your department? That's what I thought. Well, this is your lucky day. A virtual smorgasbord of data sources awaits you. This state-of-the-art workshop will be a fun-filled romp through 14 potential sources of evidence that are described in the faculty evaluation literature: (1) student ratings, (2) peer ratings, (3) external expert ratings,(4) self-ratings, (5) videos, (6) student interviews, (7) alumni ratings, (8) employer ratings, (9) mentor's advice, (10) administrator ratings, (11) teaching scholarship, (12) teaching awards, (13) learning outcome measures, (14) teaching portfolio, and (15) extraterrestrial ratings. OOPS! These sources will be presented in the context of the 360° multisource assessment model used in management and industry for 40 years (a.k.a. “whirling dervish” approach to faculty evaluation) and most recently in medicine and healthcare. The triangulation of multiple sources can provide a more accurate and reliable base for formative (teaching improvement) and summative (annual contract renewal, merit pay, promotion, and tenure) decisions than any single source. As faculty, your future depends on the fairness of these decisions. You can't afford to miss this workshop.

PCW30
All you ever need to know about podcasting: an evidence based and practical approach
John Sandars (Medical Education Unit, School of Medicine, University of Leeds, UK)
Podcasting is a rapidly emerging area of medical education. There are a wide variety of existing podcasts that can be used to enhance teaching and learning. Also, many educators are planning to introduce podcasts. Participants will be introduced to the existing evidence base that includes a review, survey and focus group that have been performed by the presenter. This evidence has informed further development. Participants will also have the opportunity to see how a podcast is prepared, recorded and edited. This interactive workshop will cover: What is podcasting? How to find a podcast; How to produce a podcast – the pedagogy; How to produce a podcast - the technical aspects; How to use podcasts to enhance teaching and learning. There will be a supporting blog to present the learning resources and to allow all participants to share their podcasts. Recording devices will be provided.

PCW31
Body painting as a teaching tool to reinforce clinical anatomy learning
Paul McMenamin and Joanna Robertston (School of Anatomy & Human Biology, The University of Western Australia, Perth, Western Australia)
This workshop will give participants the opportunity to actively participate in body painting sessions. It will include hints on how you can introduce body painting into any medical or health professional curriculum to reinforce important topics in clinical anatomy. It will highlight the educational value of these activities by using a number of exercises including hand painting, torso painting. Tips on the practical aspects of body painting will be given. Painting anatomical images that have been projected onto a model will illustrate the ease with which teachers without detailed anatomical knowledge can use this technique in their teaching.

PCW32
Healthcare systems: a new multi-disciplinary course design
Elizabeth G Armstrong (Harvard Medical School, Boston, USA), Martin Fischer (University of Munich, Germany) and Ramin Parsa Parsi (German Medical Association)
In light of the ongoing debate on healthcare delivery system reforms in Europe and the US, there is a growing need for a multi-disciplinary approach to teaching about healthcare systems on both sides of the Atlantic. This workshop will utilise edited cases, written originally by medical students in a US/EU jointly funded exchange program, that highlight features of national healthcare systems. Along with expert information on each country's (Sweden, Denmark, Germany, US) system, these cases provide the content for new medical school course design and syllabi. The workshop will be divided into three parts. Initially, participants will receive an overview of the framework used in case development and a description of how each case captured essential features of the system within which it was generated. One case from each country represented will then be analysed in small groups in order to produce a teaching note. Each small group will then present its teaching note along with suggestions for incorporation into the design of a new type of healthcare systems course. A follow-up online community of all participants will receive all of the teaching notes submitted electronically by the small groups, and a synthesised course outline for possible piloting within the institutions represented at the workshop.

PCW33
Mini-CEX: implementation of a method for observation and feedback in postgraduate training
J Norcini (Foundation for Advancement of International Medical Education and Research (FAIMER®), and CRMG Fluit (Radboud University Nijmegen, Medical Centre, The Netherlands)
The mini-CEX is an assessment format in which an examiner observes a trainee in a clinical encounter, evaluates the performance, and then provides feedback. The encounters are intended to be short and occur as a routine part of the educational process, so that
each trainee can be evaluated on many occasions by different faculty examiners. It was originally developed for use in the postgraduate arena but is now applied more broadly. There is growing experience with this form of observation and feedback and how to train both faculty and trainee in order to make these encounters as effective as possible. After this workshop participants will: (1) know what the mini-CEX is and how it can be used for the assessment of clinical skills; (2) have practised observing an encounter, scoring the trainee using the mini-CEX and preparing the feedback; (3) be aware of the strengths and weaknesses of the mini-CEX; and (4) have discussed the elements of effective faculty preparation and implementation.

PCW34
Using mind-body medicine skills to reduce stress and promote wellness in medical school
Aviad Haramati and Michael D Lumpkin (Georgetown University School of Medicine, Washington DC, USA)
As part of a comprehensive educational initiative to integrate complementary and alternative medicine (CAM) into the medical curriculum, faculty at Georgetown University School of Medicine have developed an 11 week experiential and didactic module that introduces medical students and faculty to a variety of mind body techniques (e.g., mindfulness meditation, autogenics and biofeedback, guided imageries, movement, and writing exercises) with the goal of enhancing professionalism by improving stress management skills and promoting wellness. The course integrates basic science with experiential learning and each group of 10 students is facilitated by two trained faculty members from across the medical center (educators, researchers and clinicians). Outcomes include increased student empathy and mindfulness, as well as a reduction in students' perceived stress in medical school. In addition to involving over one-third of the students, the program has expanded to include specific offerings for faculty and staff. The objectives of the workshop are: (1) To describe the trends in CAM education, student and faculty wellness, and professionalism in driving the development of Mind-Body Medicine programs in medical schools; (2) To discuss various approaches to teaching Mind-Body Medicine, including a detailed description of the 11 week course at Georgetown University School of Medicine, and appropriate outcome measures and assessment; (3) To participate in an “experiential learning” exercise used to teach a Mind-Body Medicine. This workshop will be a combination of short didactic presentations, extended group discussion, and an experiential learning exercise. It is intended for individuals with responsibility for integrating CAM into the curriculum or faculty members with an interest in faculty development, student wellness and professionalism.
1A/1
It ain’t (just) what you say, it’s (also) the way that you say it: the C-L-A-S-S strategy
Dr Robert Buckman, Princess Margaret Hospital and Department of Medicine at the University of Toronto, Canada
Communication can often go wrong without us realizing why. The answer often lies in the emotional component of the interaction i.e. in emotional reactions to the content of the discussion that are not acknowledged and discussed. This presentation will explain how to remedy that deficiency – and will focus on a simple strategy the C-L-A-S-S protocol (Context, Listening skills, Acknowledgement of emotions, Strategy and Summary). The crucial technique is the Empathic Response, the most useful method of acknowledging emotions, which involves identifying one of the emotions expressed by the patient (but does not require the physician to ‘fix it’ immediately. In addition to an outline of the protocol, there will be time for discussions and examples of how empathic responses can be used in a variety of situations.

1A/2
The patient safety agenda and the fairytale of medical success: How much shall we disclose to medical students to prompt the safety culture change?
Professor Jose Fragata, FETCS, Faculty of Medical Sciences and Santa Marta Hospital, Lisbon, Portugal
Medical students are traditionally educated within a culture of unprecedented clinical success. However, human and system factors as well as medical errors, often betray medical performance in the clinical arena. Today patient safety has become a strong component of the health care quality dimension, affecting costs, reputation, public opinion and fuelling the medico-legal interface. We have the obligation towards our students to introduce these new topics in Medicine, as we prepare them for the wild field of open clinical practice. We need an all new paradigm of reliability and safety in Medicine and this will only happen through a cultural shift that we shall lead and teach. Risk conscience, learning by error analysis and reporting and error recovery strategies, as well as disclosure and transparency, are all important drivers for the promotion of safety. During this presentation we will discuss not only error and risk, but how we shall teach them – when, how, and how much must we disclose to students during their medical education process, in order to make them safer practitioners.
2A Introduction to medical education

Larry Gruppen (University of Michigan Medical School, USA) (Chair); Yvonne Steinert (McGill University, Canada); John Norcini (Foundation for the Advancement of International Medical Education and Research (FAIMER), USA); John Bligh (Peninsula Medical School, UK)

The 'Introduction to Medical Education' session is intended as a means for non-experts of getting a quick overview and orientation to key issues and topics in medical education. The session addresses three different topics, each overview provided by one of the international leaders in that area. The overviews will emphasize general themes and principles rather than an in-depth review of the latest research. The audience will be guided through the important aspects of each topic and be given a chance to ask general questions. A two page electronic summary of each talk will be made available. The topics for this year's session include 'Faculty Development' provided by Yvonne Steinert, 'Assessing Skills and Performance' by John Norcini and 'Integrating Basic and Clinical Sciences' by John Bligh. Please come and learn!

Symposium

2B Multi-source feedback in medical education: An update on research and practice

Joan Sargeant (Chair) (Dalhousie University, Canada); Jocelyn Lockyer (University of Calgary, Canada); Julian Archer (Peninsula Medical School, UK); David Bruce (East of Scotland Deanery, UK)

Multi-source (360-degree) feedback uses questionnaires completed by medical colleagues, co-workers (e.g., nurses, pharmacists, physiotherapists) and often patients, to assess the performance of a medical student, resident or practicing physician. A self-assessment questionnaire is also frequently used. Generally competencies such as communication skills, collegiality, professionalism, inter and intra professional relationships, and medical skills are assessed. Questionnaires are comprised of varying numbers of items rated using a Likert scale, and open comments from reviewers are also solicited in some programs. Participants receive a report providing mean scores per item, and in some cases, aggregate mean scores. Research shows that if sufficient numbers of respondents are included in the design, the data will provide evidence for reliability and validity, and it can result in practice improvement and change. Further, the assessment and feedback process appears to be feasible and acceptable to participants. Multi source feedback (MSF) is being used increasingly by medical schools, hospitals, health care organizations, professional organizations, and regulatory authorities in North America and Europe, both locally and nationally, for undergraduate and postgraduate learners and practicing physicians.

The purpose of this interactive symposium is to review international progress in the use of multi-source feedback in medical education and discuss challenges for medical educators. It will include brief presentations by panel members and discussion with the audience, and explore both research questions and practical applications of MSF. Specific topics for discussion include: (1) the evidence for validity and reliability of MSF tools; (2) MSF implementation and administration; (3) provision and use of feedback; (4) theoretical underpinnings of MSF.

Short Communications

2C Clinical e-learning

2C/SC1

The use of web-based modules to teach primary care principles to third year medical students

Pablo Joo*, Sharon Krakov, *Michelle V Hall, Edgar Figueroa (Columbia University College of Physicians and Surgeons, 630 West 168th Street, VC 12 Room 217, New York 10032, United States)

Background: In our primary care clerkship, 150 third year students spend five weeks at one of 22 diverse clinical practices across the United States. We developed web-based modules to standardize their curriculum.

Summary of work: We centered each module on one common primary care topic: Diabetes, hypertension, hyperlipidemia, depression or prevention. We used the following process to develop the curriculum for each module: (1) Involve education specialists to write measurable competency-based learning objectives and assure sound educational methods. (2) Develop content that will enable learners to achieve the objectives. (3) Include disciplinary experts as content editors. (4) Incorporate information technology specialists to assure technical resources, interactive web learning methods, and effective web-page design.

Summary of results: We have already implemented four of the five modules. We assess student feedback and medical knowledge after each module. We determine project effectiveness through student essays, content exams, course ratings and learner self-assessments. Our data demonstrate student learning and satisfaction with this modality across sites.

Conclusions: Successful web-learning projects should use the same principles of curriculum design as any educational endeavor.

Take-home messages: Web-based education is an effective method to standardize the curriculum of a clinical clerkship taught at diverse sites.

2C/SC2

Acquisition of a basic surgical skill using computer based video instruction

J Tang*, T MacLeod, A G B Perks (Nottingham University Hospitals, City Hospital Campus, Hucknall Road, Nottingham NG5 1PB, United Kingdom)

Background: The acquisition of surgical motor skills remains one of the most fundamental aims of surgical training. These skills have traditionally been passed on from consultant to trainee via an apprenticeship method of learning - coined the "see one, do one" approach.

Summary of work: We centered each module on one common surgical skill: acquisition of motor skills. We used the following process to develop the curriculum for each module: (1) Involve education specialists to write measurable competency-based learning objectives and assure sound educational methods. (2) Develop content that will enable learners to achieve the objectives. (3) Include disciplinary experts as content editors. (4) Incorporate information technology specialists to assure technical resources, interactive web learning methods, and effective web-page design.

Summary of results: We have already implemented four of the five modules. We assess student feedback and medical knowledge after each module. We determine project effectiveness through student essays, content exams, course ratings and learner self-assessments. Our data demonstrate student learning and satisfaction with this modality across sites.

Conclusions: Successful web-learning projects should use the same principles of curriculum design as any educational endeavor.

Take-home messages: Web-based education is an effective method to standardize the curriculum of a clinical clerkship taught at diverse sites.
It was hypothesized that some basic surgical skills may be amenable to being taught in the home environment using computer based video instruction (CBVI).

**Summary of work:** 56 medical students were divided into four equal groups and taught the basic surgical skill of one handed reef knot tying via one of the following four methods: ‘See one, do one, CBVI, ‘expert’ tuition and CBVI plus ‘expert’ tuition. Students were video taped performing a one handed reef knot and an analysis undertaken of both the time taken to complete the skill and the quality of the surgical technique used.

**Summary of results:** The three groups that received either CBVI or tuition or both had significantly better techniques scores when compared to those students who had simply learned the skill using a “See One, Do One” approach. Prior learning of the surgical skill by CBVI did not enhance the performance attained at the end of the skills workshop following expert tuition.

**Conclusion/Take-home message:** Some basic surgical skills can be taught in the home environment using Computer Video Based Instruction (CBVI) and a basic bench model.

2C/SC3

**Technology enhanced learning in surgery in Swansea NHS Trust, Wales. Does it work?**

Simon Browning, Peter Donnelly*, Paul Kirk, Joel Benson (School of PGMDE, Cardiff University, 9 Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

**Background:** MMC and EWTD have changed the way in which medical trainees in the UK are trained and assessed. In Swansea NHS Trust an ENT surgeon (SB) set up a blended approach to training in this craft speciality.

**Summary of work:** This study asked 2 questions; 1) can’t it be used to support basic surgical training in this sub-speciality and 2) how do the learners view this experience? An education programme consisting of an ‘SHO Survival Guide’, ‘ENT Core Curriculum’, ‘Curriculum for ENT Career SHOs’ and ‘Curriculum for GPs’ was devised. An intuitive web-enhanced user interface, and ‘Contribute Server’ software provided an easy to use mechanism for updating the content without the need for specialist web skills. Training events in Blackboard were signposted by the Consultant Education supervisor and integrated into the experiential learning.

**Summary of results:** Post -course evaluation of 3 rotations of trainees was completed (n=20). Learners were asked the extent to which they agreed or disagreed with key statements covering: access, relevance, usefulness, flexibility, IT skills, assessments, effect on practice and patient management.

**Conclusions:** All trainees rated the use of the VLE highly. The trainer felt that basic knowledge and skills could be initially assessed via the training package prior to the trainees being in the clinical setting thus improving patient safety.

**Take-home messages:** TEL can be used in a hands-on clinical speciality such as ENT surgery. Blended approach ensures learner engagement.

2C/SC4

**Teaching palliative care to medical students using a novel, web-based, just-in-time learning program triggered by patient encounter logs**

James B McGee*, David Barnard, Winifred G Teuteberg, Peter M Kant (University of Pittsburgh School of Medicine, M025B Mezzanine Level, Scaife Hall, 3550 Terrace Street, Pittsburgh 15261, United States)

**Background:** Medical students’ palliative care (PC) education in the United States and Europe is inadequate. New techniques are needed to deliver expert PC content for bedside clinical teaching. Many medical schools require students to document clinical encounters in electronic logs. We hypothesized that students will utilize self-initiated online PC learning modules triggered by their patient encounters.

**Summary of work:** The PC faculty developed 30 online modules, triggered when students enter any of 14 PC-related diagnoses in their logs. Students select PC modules relevant to their patient. The student’s preceptor is alerted when a module is completed. We piloted this system for 4 weeks of the Family Medicine (FM) and 3 weeks of the Adult Inpatient Medicine (AIM) clerkships.

**Summary of results:** In the FM clerkship 29 students logged 1714 diagnoses, triggering PC modules 63 times (3.7%). In the AIM clerkship 11 students logged 405 diagnoses, triggering PC modules 47 times (11.6%). Students completed 148 modules. Preceptors accessed the modules nine times.

**Take-home messages:** We successfully created and piloted a web-based just-in-time PC learning system triggered by students’ patient encounters. Forty students were prompted 110 times and completed 148 PC modules. Usage and satisfaction data collection is ongoing. Comprehensive evaluation of the impact of this education intervention is underway.

2C/SC5

**Case logging as a learning tool for medical students as well as educators**

Moira A L Maley*, Kirsten Auret, Denese E Playford (Rural Clinical School of Western Australia, QE2 Medical Centre, Nedlands WA 6009, Australia)

**Summary of work:** A “designed to fit” personal, searchable, web database resource (eLog) for case logging was used by multiple small groups of fifth year medical students embedded in rural/remote primary care settings in 2007. A prescribed minimum requirement for case logging was incorporated into the assessment matrix applied to this case-based, integrated, clinical curriculum. The sixty-two students were disparate in their learning styles (Kolb) and approaches but all students achieved the minimum required (range 106-432 cases/student for the year, median 215, total cases 13666). Students attribute one or more disciplines to each case they enter into their eLog. All cases flagged as oncology in the first 6 months were used to ascertain the scope and depth of exposure of students to cancer as a discipline, a known area of concern for rural/remote students. The review examined the evidence in the students’ logs relative to the outcomes for the city-derived cancer curriculum.

**Summary of results:** Although overall exposure was good, specific gaps were identified in both depth of experience and approach to learning from cancer patients. Virtual patients were constructed (WIMEDS virtual patient tool) including study guides which addressed the gap issues.

**Conclusion/Take-home message:** Evaluation of the students’ perceptions of this complementary approach confirmed its value.
2D/SC1
Finding the mark; standard setting for special study units
Lee R Coombes*, Alison Curnow (Peninsula Medical School, C316 Portland Square, University of Plymouth, Drake Circus, Plymouth PL4 8AA, United Kingdom)

Background: Students at Peninsula Medical School (UK) complete several special study units each year as part of their course requirements. These cover a range of themes and have multiple assessors. Until recently these have had a predetermined passing score, but the decision was taken to look for a different method of standard setting that better reflected student performance.

Summary of work: This work details the changes to standard setting methods for the student selected essay component of the course. Data will be presented that show the effect of different appropriate standard setting methods on the student data, and the differences and relative advantages of each will be discussed.

Summary of results: After consideration we have adopted the Borderline Group method and this has raised the passing score for each assignment. Details of the specific changes in each assignment will be presented.

Conclusions: The Borderline Group method provides a dynamic pass mark that is easy to implement, credible, defensible and easy to understand by both assessors and students.

Take-home messages: The Borderline Group method of standard setting is applicable to special study units, and may be appropriate in other similar circumstances where there are numerous assessors.

2D/SC2
What were the examiners thinking? Using post-hoc analysis of oral examiner deliberations to clarify standards
P Harris*, Chinthaka Balasooriya, Cihat Tetik (University of New South Wales, Faculty of Medicine, School of Public Health Community Medicine, NSW 2052, Australia)

Background: Assessment in Radiation Oncology exit examinations includes short and long case examinations. Structured marking sheets are used by pairs of examiners. All borderline and failing candidates are discussed at the Court of examiners.

Summary of work: The deliberations of examiners on any borderline and failing candidates for any case over four consecutive exam series were analysed. Patterns of decisions not represented on the grading sheets were identified as indicating the “real” standards being used for passing these assessments.

Summary of results: Post hoc examiner records deal mainly with items from the grading forms but also identify process issues such as weighting of part task marks and examiner prompting as well as areas of professional judgement such as readiness for independent practice, worrying overconfidence and candidates’ grasp of common clinical practice.

Conclusions: This analysis resulted in alterations to the reporting forms and feedback for examiner training, including addressing assumptions examiners bring to the task. Post-hoc analysis provides a tool to explore these assumptions.

Take-home messages: Structured assessment tools may still mask examiner assumptions that influence their ratings in high stakes examinations.

2D/SC3
The impact of the inclusion of simulated patient grades on the reliability of OSCE assessments under the borderline regression method
Matthew Homer*, Godfrey Pell, Richard Fuller (University of Leeds School of Medicine, Assessment and Evaluation Unit, School of Education, Leeds LS2 9JT, United Kingdom)

Background: Simulated patients (SPs) are a key aspect of many OSCE assessments, and are increasingly asked to rate candidates’ performance. Key challenges relate to whether and how these data can be used to enhance standard-setting processes for OSCEs.

Summary of work: Analysis was undertaken of the relationship between SP ratings and those provided by the clinical assessors (criterion-base marks and overall grades for each station). The impact of including SP scores in formal standard setting processes for OSCEs (using borderline regression) was also examined.

Summary of results: A discussion of two distinct methods for the combining of the SP and assessor marks will be presented. Inclusion of this additional data can have important overall effects as well as impacting on individual student results. Crucially, the appropriate inclusion of SP ratings can be shown to have a positive impact on the quality of the assessment process.

Conclusions/Take-home messages: Simulated patients can contribute meaningful, reliable ratings of candidates in high-stakes assessments, and are able to usefully discriminate between different student characteristics. Explicit inclusion of these ratings as part of a range of standard-setting processes provides a clear message from Faculty that patients’ voices sit at the core of assessment.

2D/SC4
Is knowing that physicians can correctly explain “why” they do something helpful in determining competency in a pass/fail examination?
D E Blackmore*, T J Wood (Medical Council of Canada, 2283 St-Laurent Blvd, Ottawa K1G 3H7, Canada)

Background: The Licentiate of the Medical Council of Canada (LMCC) is a qualification that is used as a prerequisite to Canadian licensure. The LMCC is awarded through a two-part qualifying examination: Part-I is a one-day computer-based examination taken at the end of medical school and Part-II is an OSCE taken after 12 months of postgraduate training.

Summary of work: Traditional formats measure knowledge, skills and attitudes; e.g., MCQ, extended-match, key-feature, and OSCE. “Why” an examinee chooses a given response is not taken into account.

Conclusions: The question is whether added information leading to better decisions around the cut score is being lost; i.e., if two borderline examinees had the same score, should the candidate who understood why the correct answer was selected be considered more competent than the other? And, by extension, would that knowledge lead to one examinee being a better practitioner than the other? A first analysis of response patterns from select questions on the licentiate examinations that appear to measure that the examinees have an understanding as to why they selected the answers that they did is being presented.

Take-home message: A better understanding as to why examinees answer questions the way that they do may lead to better pass/fail decisions.
2E/SC2
Making things better: the scholarship of community engagement
Liz Wolvaardt*, Jannie Hugo*, Patricia Arangie*, Julia Blitz (Faculty of Health Sciences, University of Pretoria, PO BOX 667, Pretoria 0001, South Africa)

**Background:** The purpose of higher education is not only “education for the market place” but also “education for good citizenship”. This is especially valid in medical education within a resource-limited country that is under pressure to produce and retain skilled professionals for the public good. Service-learning, as a form of community engagement, can be used to enhance a sense of social responsibility.

**Summary of work:** Through an action-learning methodology, an integrated service-learning curriculum model was employed in a module for senior medical students to ensure: (1) Relevant and meaningful service with the community; (2) Enhanced academic learning; (3) Authentic civic learning (social responsibility); and (4) Structured opportunities for reflection. The outcome of the service learning was evaluated through semi-structured questionnaires, individual and group reflections.

**Summary of results:** Initial results indicate that the majority of students rate the experience as highly valuable and would definitely recommend the activity to a peer. “Intentions to change” responses were balanced between medical skills and more attitudinal changes. Statements of powerful personal transformation are seen in the reflections.

2E/SC1
Challenges associated with consulting the community in medical curriculum development
Maree O’Keefe*, Suzette Coat (University of Adelaide, Faculty of Health Sciences, University of Adelaide, Adelaide 5005, Australia)

**Background:** Medical schools are encouraged to consider community opinions in curriculum development, however there is little information to guide such engagement. Consulting self-selected volunteers has been suggested as a way of promoting equality of opportunity within the community.

**Summary of work:** Parent views on medical student learning in either Complementary and Alternative Medicine in paediatrics (CAM) or Childhood Obesity (CO) were sought through focus group discussions. Separate advertisements for CAM and CO focus group participants were placed in community newspapers, a parent magazine, community healthcare centres, and the paediatric hospital. Twelve people enquired about the CO focus groups with nine agreeing to participate. Seventy-four different people enquired about the CAM focus groups with thirty-four agreeing to participate. Most participants were female (CAM: 29/34; CO: 8/9) and tertiary educated (CAM: 18/34; CO: 8/9).

**Summary of results/Conclusions:** While participants welcomed the opportunity to work collaboratively with medical school academics, in a city of approximately 1 million people, volunteer rates were low, especially among males and non-tertiary educated members of the community. Some possible contributing factors were identified.

**Take-home messages:** A range of strategies is needed to facilitate meaningful community engagement as a ‘one-size fits all’ approach may limit the participation of certain members of the community.
Conclusions: The opportunity to interact with complex real-world problems through service-learning results in greater appreciation of the study field, enhanced personal values and heightened sense of social responsibility.

2E/SC4
The value of learning in the community: do it … say it
Madalena Patrício*, Antonio Pais-de-Lacerda, Miguel Barbosa, António Barbosa, João Gomes-Pedro (Instituto de Introdução à Medicina, Faculdade de Medicina da Universidade de Lisboa, Av. Prof. Egas Moniz, 1649-028 Lisboa, Portugal)

Background: The need for curricular opportunities to make students aware of the importance of the Humanization of Medicine is now world accepted.

Summary of results: To our surprise the evaluation of such different opportunities by the students turned out to be more similar than expected with Seminars achieving a slightly poor rate (4.2 vs. 3.7 on a 5 point scale). Moreover 82% of the students valued the importance of the Seminars and said that both opportunities should be kept next year.

Conclusions: If teachers were already aware of the educational value of such experiences the results of our survey indicate that students’ views are much more the same. They just reinforced the need of offering students this kind of curricular opportunities.

Take-home message: When planning activities in the community we must make sure that students not only “Do it” but also “Say It”.

2E/SC5
Not “just” rural clerkship: Developing thoughtful future medical practitioners in the Rural Integrated Community Clerkship program
Doug Myhre*, Janet Tworek* (University of Calgary, 7th Floor TRW, Faculty of Medicine, 3330 Hospital Drive NW, Calgary T2N4N1, Canada)

Background: In April 2008, the University of Calgary will begin a rural integrated community clerkship (RICC), with students in five rural communities. In addition to rural clerkship experiences, the pedagogical underpinnings promote the cognitive apprenticeship of the medical student through a community of inquiry (Garrison, Anderson & Archer, 2000).

Summary of work: Students and preceptors share academic and social interaction through an online community (web conferencing, discussion boards, file sharing and clinical logbook). While covering discipline-specific learning objectives, students reflect on their professional development through case presentations, journaling (text, picture, video, or audio), and tracking personal learning goals – all of which are compiled into an electronic portfolio of learning. The RICC Medical Director reviews students’ inquiry progress at regular intervals.

Summary of results: Mid-point results of student and program evaluation will be available in July 2008 and presented at AMEE.

Conclusions: A community of inquiry allows students and preceptors to engage with the overarching themes of RICC: to become medical professionals; to understand the realities of rural medicine; to become self-reflecting physicians who continually grow as professionals.

Take-home messages: Communities of inquiry provide a model to engage rural clerks in praxis through inquiry and self-reflection.

2E/SC6
An innovative approach to illustrate selected medical education concepts
Mohamed M Al-Eraky* (International Medical Center, P.O. Box 2172 Jeddah 21451, Saudi Arabia)

Background: Medical education should not only be the concern of medical educators. Everyone who is working in healthcare should be aware of the common and recent trends of medical education.

Summary of work: Therefore, I used some genuine ideas to illustrate selected common medical education concepts using self-created mnemonics. For example: (1) Harden’s 10 Questions for Curriculum Planning grouped in 5 Twin Concepts; (2) Why should curriculum content be organized? (3) Approaches to change educational processes in your institute; (4) 3 Roles and 3 Tools of Modern Doctors; (5) motives, concepts, and classification of learners towards lifelong learning (LLL); (6) Gagné’s 9 Events of Instruction (Lesson Planning) illustrated as traffic signs; (7) … and more.

Note: All of the above concepts and illustrations were revised and approved by senior professionals from The Center for Medical Education, Dundee University, Scotland.
2F/SC1
Foundation programme recruitment in the UK - evaluation
Robert Palmer*, Kathy Feest, Jonathan Howes, David Wall, Derek Gallen (UK Foundation Programme Office, Regus House, Falcon Drive, Cardiff Bay, Cardiff CF10 4RU, United Kingdom)

The internet based appointment to F1 posts in the UK has been coordinated nationally for the last 2 years, following Department of Health sponsored pilot schemes, all of which have been evaluated. In 2008 there were 7269 applications; applicants gave written statements to demonstrate academic, non-academic and analytical abilities. Medical schools contributed academic scores. There is a correlation between personal statement and medical school scores (p<0.001); females score higher than males (p<0.001). All candidates (>18,000 in total) over the last 4 years have completed an on-line evaluation (100% return). The level of satisfaction has improved with time and the majority are content with this new and efficient process. On-line application is preferred and most fully recommended the continued use of the scheme. Females are more supportive than males and appreciation increases with age (all p<0.01). The national scheme has been a success and there have been proven improvements each year. Internet based recruitment is efficient and effective, and will continue next year, with modifications based upon experience and feedback.

2F/SC2
The pros and cons of Foundation Programmes - views of trainees, consultants and nurses in NHS Scotland
Suzanne Lee*, Simon Mallinson, Richard Higgins (East Midlands Healthcare Workforce Deanery, Rutland House, 11 Merus Court, 89 Hydepark Street, Glasgow G3 8BW, United Kingdom)

Background: Foundation Programmes, introduced across the UK in 2005, reformed the first two years of postgraduate medical training. Medical graduates now focus on developing generic skills while working in a range of specialties (6 x 4 month rotations). Whilst many recognise the potential benefits of these reforms, recent research has identified some difficulties. We therefore felt it important to investigate the collective perceptions of early successes and ongoing challenges in the implementation of Foundation training.

Summary of work: We interviewed 45 Foundation doctors (23 Foundation Year 1, 22 Foundation Year 2), 25 nurses and 23 consultants across Scotland in 2007. Where possible, we selected unit-based groupings of Foundation doctors, nurses and consultants to represent different geographical locations, specialties and types of hospital. Interviews were recorded, transcribed and coded using NVivo 7.
Conclusions: Data analysis is ongoing, but this presentation will explore the extent to which F1 and F2 trainees, nurses and consultants reported that the Programmes offer good training, appropriate experience, whilst supporting high quality patient care. In particular, there will be a focus on what the different groups think about: (1) the extent to which Foundation trainees are acquiring appropriate skills; (2) how well the assessment tools are perceived to work; (3) how successfully the Programmes help trainees decide upon a career path; (4) which areas of the Programmes need improvement.

2F/SC3
Junior doctors' views on the value of out-of-hours working patterns
Myanna Duncan*, Cheryl Haslam, Richard Higgins, Simon Mallison (Work and Health Research Centre, Loughborough University, Loughborough, Leicestershire LE11 3TU, United Kingdom)

Background: The European Working Time Directive (EWTD) has led to changes in the working patterns of junior doctors as Deaneries and Trusts strive to ensure compliance with the impending 2009 deadline. One such change includes the reduction in the time many juniors spend performing out-of-hours work (i.e. nights and weekends).

Summary of work: Semi-structured interviews were conducted with junior doctors from the East Midlands Workforce Deanery, to explore how the new working patterns impact on doctors' training, education opportunities and quality of working life. Findings indicate that junior doctors highly value out-of-hours work, which offers the opportunity for clinical decision-making under pressurised circumstances without direct supervision. The unique nature of out-of-hours working provide specific learning opportunities as doctors draw on time-management and prioritisation skills.

Conclusions: Junior doctors report frustration at day-shifts due to a lack of autonomy and the administrative nature of work. Day-shifts are largely perceived as service provision, meaning even greater value is placed on out-of-hours.

Take-home message: Day-shift work should be restructured to provide a greater emphasis on hands-on skills experience without direct supervision. Where possible, junior doctors would benefit from the opportunity to engage in out-of-hours working, such as with multi-professional ‘Hospital at Night' teams.

2F/SC4
Giving doctors quality time: ensuring high standards of education and training as working hours are reduced
Fiona French*, Judy Wakeling, Catriona Rooke, Gellisse Bagnall, Ken McHardy (NHS Education for Scotland, 2 Central Quay, 89 Hydepark Street, Glasgow G3 8BW, United Kingdom)

Background: The European Working Time Directive (EWTD) requires a maximum 48-hour working week for doctors in training by August 2009. We report on a UK pilot project at one NHS Trust to develop and implement solutions to achieve a reduction in working hours by August 2008 while maintaining standards in education, training and patient safety.

Summary of work: The project has resulted in multiple, speciality-specific solutions to the EWTD target across the hospital, involving workforce reconfiguration through the development of multi-disciplinary teams, cross-speciality cover and rota redesign. Evaluation data from multiple sources (including questionnaires, semi-structured interviews and official hospital figures) have demonstrated the achievement of EWTD compliance at the same time as maintaining and improving education and training opportunities.
**Conclusions:** Changes to working patterns have been carefully designed to ensure less time at work is not to the detriment of training. Strategies include more focused clinical exposure, better access to formal teaching sessions and exploitation of opportunities for multi-disciplinary team-working.

**Take-home messages:** While the requirement for doctors in training to work reduced hours cannot be ignored, our pilot demonstrates that proactive approaches to meeting this challenge provide the opportunity for innovative solutions, which impact positively on doctors’ training.

### 2F/SC5

**How do Pre-Registration House Officers handle patient encounters when on call?**

*Axel Malchow-Møller*, Jens Michelsen*, Peder Charles, Berit Eika, Knut Aspegren (University of Southern Denmark, Faculty of Health Sciences and Center of Medical Education, University of Aarhus, Denmark, Svendborg Hospital, Department of Medicine, Svendborg DK-5700, Denmark)

**Background:** The transition from medical school to work life is a potentially stressful period. Little is known about how Pre-Registration House Officers (PRHO) on call cope with challenges during their first encounters.

**Summary of work:** We collected a total of 70 one-page descriptions of patient encounters from 27 PRHOs after consultation with Senior House Officers following nights on call. Five strategies from successful encounters were identified: (1) Analytical reasoning (24 %); (2) Pattern recognition (21 %); (3) Communicating with patients and relatives (21 %); (4) Taking on a professional role (i.e. remained calm despite heavy workload) (18 %); (5) Communicating with colleagues and nursing staff (15 %). When asked how tackling a difficult patient encounter next time: (1) 40 % were unable to mention anything; (2) 40 % would read about the condition; (3) 8 % would follow up on patients; (4) 12 % had various suggestions.

**Conclusions/Take-home messages:** PRHOs are able to use a spectrum of strategies to manage patients successfully. Their ability to learn from problematic situations is however insufficient. Procedural knowledge differs from propositional knowledge and action should be taken to foster learning in PRHOs who have encountered difficult cases.

### 2F/SC6

**A week in the life of a first year doctor in New Zealand**

*I Stolarek*, E Crolla, B Hall, B Stone, Y Chuah (Hutt Hospital, Private Bag 31907, Lower Hutt, New Zealand)

**Aim:** To identify educational, training and service commitments of a postgraduate year one doctor (PGY1) undertaking a Medical run in a New Zealand (NZ) Hospital.

**Summary of work:** Anecdotally, in NZ and other countries, PGY1s report that they are overqualified ‘secretaries’ doing little hands-on medical work. To gain a better understanding of their work 4 medical students shadowed PGY1s during normal working days, weekends and evenings.

**Summary of results:** 14.5% of the normal working day was taken up by typing electronic discharge letters with a further 14.5% listening to ward-round discussions and 10% writing notes on rounds. 10% of the day involved walking between patients. Only 6.5% was taken up in history and examination. In evening shifts 15% of the time was taken by patient investigations such as bloods, 3% in history and examination and 25% in filling in charts, forms etc. At weekends, history and examination took 10% of the day patient interventions 16%, note taking 10% and filling charts and records another 10%.

**Conclusion:** This study helped identify training issues and has resulted in a workforce group targeting areas for improvement. This has resulted in PGY1s seeing more new admissions after hours. Daytime changes are now being addressed.

### 2G/SC1

**Using mobile technology to deliver work based assessment in a programme of remediation after Finals failure. Challenging assumptions and generating new horizons?**

*Richard Fuller*, Ceridwen Coulby, Nancy Davies, Scott Hennessy, Shervanthi Homer, Gareth Frith, Trudie Roberts (University of Leeds School of Medicine, Worsley Building, Leeds LS2 9JT, United Kingdom)

**Background:** Work based tools (mini CEX, 360 feedback) are increasingly established in both appraisal and assessment, but physical constraints and perceived lack of linkage with learning can limit effectiveness. This communication reports the key lessons and successes in delivering a programme of remediation supported by mobile technology.

**Summary of work:** Thirteen students failing the 2007 Final MB examinations were trained and supplied with a PDA for workplace use. During a 12 week remediation programme, students were asked to do ≥ 8 mini CEXs and a mid point 360 via the PDA. Assessor and student feedback (focus group/questionnaire), and examination of the mini CEX data analysed the effectiveness of this programme.

**Summary of results:** A median of 15 mini CEXs/student were undertaken, with students and assessors describing improvements in competency and confidence. Feedback revealed a clear pattern of ‘stories’ describing student attainment and progress, also reflected in the 360. There was a clear link with everyday use of the devices for learning, connecting with goal setting. Feedback relating to ‘digital’ confidence of assessors and students will also be presented.

**Conclusions/Take-home messages:** Using workplace based mobile technology allows key opportunities to deliver an ‘everyday’ programme linking opportunistic assessment, high quality feedback and learning.
Teamwork and team-based learning in the workplace at two UK general practices: the implications for undergraduate medical training

Tom Sanders*, Bonnie Sibbald, Val Wass (University of Manchester, Manchester Medical School, Walmer Street, Rusholme, Manchester SK13 3NP, United Kingdom)

**Background:** As organisations become larger and more complex, the ability of clinicians to work together in a coordinated, mutually accountable and inter-dependent way to accomplish shared objectives becomes increasingly important. Surprisingly, however, the main attributes of teamwork, the means through which learning is accomplished in the workplace, and the practical application of team processes to medical undergraduate training is under researched.

**Summary of work:** Qualitative interviews were conducted with GPs and other staff at two general practices in northern England. Ethnographic observations were also conducted. Data were analysed using the constant comparative method. The social processes that shape team work were examined in relation to Wenger’s ‘situated learning’ theory, which explains the contextual and contingent nature of learning in the workplace, explaining how favourable conditions for progressive change in health care settings can be achieved.

**Summary of results:** Reflective learning, organisational ‘culture’, communication practices, and the ‘technical’ and ‘inter-personal’ dimensions of teamwork, all had a profound effect on team based learning.

**Conclusions:** Teams play a fundamental role in driving change in organisations and every effort needs to be made to transfer team-based learning principles to medical undergraduate training as preparation for the challenges of modern healthcare delivery.

**Take-home messages:** There is an urgent need to match student competencies with the rapid organisational changes taking place in contemporary health care.

Can the “hospital at night” team provide medical students with acute surgical experience?

Sarah Cregan*, Jake Botfield (Keele University Medical School, City General Hospital, Newcastle Road, Stoke-on-Trent ST4 6QG, United Kingdom)

**Background:** The introduction of the European Working Time Directive (EWTD) has vastly changed the role of the junior doctor at night. For many foundation level doctors this has meant less opportunity to gain acute experience prior to becoming a “generic” SHO on the hospital at night team. This may make the transition from medical student to junior doctor even more daunting and traumatic.

**Summary of work:** To address this shortfall in acute clinical experience voluntary sessions were established for medical students (3rd to 5th years) in the surgical hospital at night team within a University Teaching Hospital. Students were assigned to surgical advanced nurse practitioners (ANPs) and spent time with all members of the team at night. A reward system was established for surgical ANPs and junior doctors who participated.

**Conclusions:** Surgical nights can be utilised to offer medical students new learning opportunities which may help address the lack of acute experience in surgery, and ease the transition to junior doctor. Evaluation of student feedback and development process will be presented.

**Take-home messages:** The provision of acute surgical experience at night for medical students is worthwhile pursuing but further service support is required to ensure that educational opportunities can be maximised.

PDA use among 6th year internal medicine clerks

Ellen Easton*, Edith ter Braak, Olle ten Cate, Renée Filius, Sanne Akkerman (University Medical Center Utrecht, Center for Research and Development of Education, P.O. Box 85500, HB 4.03, Utrecht 3508 GA, Netherlands)

**Background:** Sixth year medical students at UMC Utrecht have almost finished undergraduate medical education and are about to choose a specialty and continue their medical career as residents. We wanted to find out whether the availability of a PDA could support these students in learning and working in clinical practice.

**Summary of work:** In a pilot-study, five 6th year medical students were offered the use of a PDA (including medical software) during a 12-week internal medicine internship. Our aim was to find out how they use their PDAs, which features or programs they use, when and where they use them, and why. We also wanted to know which features or programs they did not use and why. After their internships all participants were interviewed.

**Conclusions/Take-home messages:** Which PDA functionalities and medical software were used varied among users, however, most participants regularly turned to their PDA for pharmaceutical information and information about medical standards and procedures. PDAs were most often used when a PC was not available or when things had to be looked up or calculated quickly. Most students indicated that the relatively short period of availability stopped them from putting the PDA to full use.

Teaching surgery in the operating room: differing perceptions of teachers and learners

Philip Crowe* (Prince of Wales Hospital, High St, Randwick, NSW 2031, Australia)

**Background:** There is little in the literature about operating room (OR) teaching with respect to the importance or otherwise of the level of interaction between teacher and learner, the effect of resident fatigue or motivation, the teacher’s demeanour, etc.

**Summary of work:** The aim of this study was to gather information about how learning might be affected by the competing demands and nuances of surgeon/teacher, resident/learner, and the learning environment. The results of interviews with consultant surgeons and residents at the Foothills hospital, University of Calgary, Canada were used, in addition to previously published work, to compile a list of factors likely to influence OR learning. A larger number of surgeons and residents were then surveyed, to determine which of these factors were considered most important for good learning in the operating room.

**Summary of results:** Both surgeons and residents thought that good resident preparation, helpful feedback and the use of graded responsibility during the training program were the most important prerequisites for good surgical (OR) education. However, the residents generally considered factors associated with the learning climate, such as teacher’s demeanour and resident fatigue more important compared to the surgeon/teacher. These results will be discussed and related to an ‘ideal’ model of operating room teaching.
2H/SC1
The ties that bind: a network approach to creating a program in faculty development
L. Bakes, E. Egan-Lea, S. Reeves, J. S. Silver* (Centre for Faculty Development, Faculty of Medicine, University of Toronto, 30 Bond Street, Toronto M5B 1W8, Canada)

Background: Faculty development is critical in helping faculty members adapt and respond to changes in medical education and the health care environment including supporting faculty in their multiple roles and responsibilities. Nevertheless, there is a dearth of literature on how to thoughtfully create a faculty development program at a medical school.

Summary of work: The paper outlines a theory-based approach (social network theory) for program development that led to the successful launch of the Centre for Faculty Development (CFD) in the Faculty of Medicine at the University of Toronto (5,000 faculty members).

Summary of results: There are six key factors embedded in social network theory that have been essential to the formation and growth of the CFD: environmental readiness, commitment and vision of a mobilizer, recruitment of stakeholders and leaders to committees, formation of a collaborative network structure, accumulation of networking capital and perceived legitimacy.

Conclusions: Social network theory highlights the importance of social ties to the success of initiating a faculty development program. The theory and its related factors provide a practical framework to guide universities with their faculty development initiatives.

Take-home messages: Theory driven program development provides a comprehensive framework for implementing new education programs including faculty development.

2H/SC2
Higher Education Developers Special Interest Group: meeting the UK health education agendas for change
Nigel Purcell, Judy McKimm (Reg Dennick to present) (Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine, School of Medical Education Development, University of Newcastle, Newcastle Upon Tyne NE2 4HH, United Kingdom)

Background: The Higher Education Academy MEDEV Subject Centre supports faculty development as one of its core activities. In 2006, a national Special Interest Group (SIG) for health and medical education staff, curriculum and educational developers was established, comprising over thirty individuals. The SIG links to the MEDEV Resource Archive for Teacher Trainers (RAFTT) project.

Summary of work: Members have engaged in two national workshops with two more planned for 2008, plus access to the resource archive and a VLE.

Summary of results: The SIG has provided a discussion forum for strategic/policy issues and change agendas in healthcare education and a voice for responding to such agendas. It facilitates leadership/management development and active engagement with centres of educational innovation. It has helped to increase awareness of wider policy, professional and educational agendas and led to increased effectiveness in organisational roles.

Conclusions: The SIG provides a support structure for often isolated staff/educational developers. The SIG is a developing Community of Practice (CoP) with capacity for wide influence on medical and healthcare education.

Take-home messages: Providing support for staff/educational developers to meet, learn and work together in a structured way sustains and develops a CoP which puts a collaborative educational leadership approach into practice.

2H/SC3
A community of practice for educators: journey's start
J. Bezuidenhout**, Gert Young† (Stellenbosch University, Department of Pathology Faculty of Health Sciences†, Centre for Teaching and Learning†, PO Box 19063, Tygerberg, Cape Town 7505, South Africa)

Background: Higher Education professionals should be critical, reflective and compassionate. University lecturers spend vast amounts of time and energy on reflecting on their teaching and exhibit real and personal compassion to their students, but often struggle to find a supportive environment for their critical endeavors.

Summary of work: Lecturers and educational experts joined forces in a collaborative, interdisciplinary effort to model support for lecturers seeking to respond to the need for critical professionals in Higher Education, based on Wenger’s (1998) “Community of Practice”. We mapped the start of lecturers' journey (development) into this community by narrative, asking 3 questions: What kinds of graduates should Stellenbosch University produce, what, in terms of your own biography, brought you to this understanding and what is your contribution?

Summary of results: To map this journey we consider both the concepts “community of practice” and “critical professionalism”, describing the theoretical establishment of such a community. The participants' narratives identified 4 themes: expectations (nature and focus of graduate, valuing education), challenges (societal, institutional, curricular, personal), contributions (creating opportunities, presenting role models, personal reflection) and influences (role models, engagement and experience, reflection).

Conclusions: A community of practice in our institution provides a supportive and creative environment for educators across disciplines and faculties.

2H/SC4
Educators or trainers? – using pre-course portfolios for course design and participant selection
Deborah Murdoch-Eaton*, Jim Crossley, Francina Cunnington, Simon Frazer, Chisantha Halakoon, Bob Klaber, Colin Macdougall, Chris Mason, Andy Mellor, Colin Melville, Ashley Reece (University of Leeds, Medical Education Unit, School of Medicine, Level 7, Worsley Building, Leeds LS2 9NS, United Kingdom)

Background: Postgraduate generic educational courses are widely available. The Royal College of Paediatrics & Child Health (UK) questioned a need for a Paediatric Educators’ Programme (PEP) specifically designed to meet educational needs of their membership.

Summary of work: The paper outlines a theory-based approach (social network theory) for program development that led to the successful launch of the Centre for Faculty Development (CFD) in the Faculty of Medicine at the University of Toronto (5,000 faculty members).

Summary of results: There are six key factors embedded in social network theory that have been essential to the formation and growth of the CFD: environmental readiness, commitment and vision of a mobilizer, recruitment of stakeholders and leaders to committees, formation of a collaborative network structure, accumulation of networking capital and perceived legitimacy.

Conclusions: Social network theory highlights the importance of social ties to the success of initiating a faculty development program. The theory and its related factors provide a practical framework to guide universities with their faculty development initiatives.

Take-home messages: Theory driven program development provides a comprehensive framework for implementing new education programs including faculty development.
**Summary of work:** Interested members completed portfolios recording both educational experiences and their considered course requirements. Thematic qualitative analysis identified key needs including high level educational theory, practical sessions specifically focussed around clinical application in paediatrics, and a mechanism to develop local interest groups. A faculty of practising paediatricians, all with educational remit with their job plans, contributed to course design. This incorporated a residential component, facilitated local learning groups and individual educational development supported by distance learning material.

**Conclusion:** Faculty and participant feedback analysis confirmed the overwhelming success of the programme, stimulating and supporting paediatricians to progress from “trainers” to “educators.” Pre-course portfolio submission ensured not only pertinent course design but also a method for participant selection; those already conversant with basic educational principles and thus most likely to benefit from PEP.

**Take-home messages:** The generation of local learning groups using experienced participants should ensure sustainability of individual developmental outcomes, and a body of national Paediatric Educators for the RCPCH.

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**2H/SC5**

**Education for teachers – effect preserved after six months**

*Leila Niemi-Murola*, Kati Hakkarainen, Juha Pekka Turunen, Timo Tolksa, Irma Virjo (Department of Anaesthesiology and Intensive Care Medicine, University of Helsinki, Haartmaninkatu 4, Helsinki 00029 HUS, Finland)

**Background:** The Finnish Medical Society Duodecim arranges an annual seminar for development of education. In 2007, the themes were e-learning, educational research and effect of education. The purpose of this survey was to study the effectiveness of this seminar.

**Summary of work:** The participant received an electronic questionnaire after registration, after the seminar and six months later. They were asked to evaluate their knowledge and skills using 7-point Likert scale (4 = totally disagree, 10 = totally agree).

**Summary of results:** Forty percent of the participants (24/60) answered all three questionnaires. Their teaching experience was 0-28 years. After the seminar, the participants reported an increase of knowledge concerning educational theories (p<0.05), e-learning (p<0.01) and methods of assessment of knowledge (p<0.05). Six months later, the participants still reported a significant in-crease of knowledge concerning e-learning (p<0.01), methods of assessment of knowledge (p<0.01), assessment of skills (p<0.001) and assessment of effectiveness of education (p<0.001) compared to the first questionnaire. After six months 46% told that they had experimented with a new educational idea. Participants found also discussion and networking very important.

**Conclusions/Take-home message:** The participants achieved their learning goals and the effect was preserved six months after the seminar.

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**2H/SC6**

**Strategies for creating and evaluating a faculty fellowship in medical education**

*Beth A Lown*, Charles J Hatem* (Harvard Medical School, Mount Auburn Hospital Department of Medicine, 330 Mount Auburn Street, Cambridge, Massachusetts 02138, United States)

**Background:** Medical education faculty fellowships have emerged in North America to meet the need to prepare faculty to teach. We direct three faculty medical education fellowships within Harvard Medical School and affiliated hospitals. Fellowship goals are to enhance educational skills, and foster leadership, scholarship, community, and fellows as change agents. Funding supports 20% of fellows’ time.

**Summary of work:** Two fellowship groups meet weekly and another monthly. In interactive sessions tailored to each group, fellows discuss curricular/research topics, practice teaching skills with peer and faculty feedback. Each fellow undertakes a mentored medical education project.

**Summary of results:** Ninety seven fellows from varied medical disciplines have graduated over the past decade (AY1998-2008). Evaluation of the fellowships using semi-structured interviews identified post-fellowship changes in knowledge, self-perceptions, behaviors, and institutional impact, strengthening of confidence and identity, and educational career expansion. Quantitative CV analysis of fellowship outcomes is underway.

**Conclusions:** Faculty fellowships in medical education are feasible strategies to enhance teaching and learning, promote educational scholarship and leadership, and create community.

**Take-home messages:** Faculty fellowships in medical education can be transformative experiences that foster teaching excellence, departmental, and institutional change.

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**Short Communications**

**2I Approaches to research in medical education**

**2I/SC1**

**Two paradigms for medical education research – and the dangers of choosing just one**

*Carsten Hering Nielsen* (University of Aarhus, Centre for Postgraduate Medical Education, Aarhus DK-8200N, Denmark)

**Background:** Some voices have been frowning upon the standard of the medical education research (MedEdRes) papers presented at AMEE and similar conferences. Critics have suggested that papers presented were not ‘real’ research and lacked rigour and style.

**Aim:** The presentation describes two different paradigms: The rigorous and the practical approach, and offer perspectives on their pros and cons.

**Method:** In 2004 OECD presented a country report reviewing educational R&D in Denmark. That was in 2007 followed by a report from the Danish Ministry of Research. Inspired by Bourdieu the paradigm presented in these policy papers are compared to recent journal papers published on MedEdRes.

**Discussion:** The OECD employs the following definition: “Educational R&D may be understood as the production, distribution and application of knowledge in order to improve the education and the training system.” This leaves space for a range of different professions to interpret and take their bid on an approach to MedEdRes.
Design Based Research - an emerging paradigm of educational research: a systematic literature review
Abubakr Adlan*, Annie Cushing (Queen Mary University of London - Barts and The London School of Medicine and Dentistry, Turner Street, Whitechapel, London E1 2AD, United Kingdom)

**Background:** The rigour and quality of educational research within the medical education community has been criticised and questioned numerous times. There is often conflict and debate around how educational research should be done and what appropriate conclusions can be drawn from such research.

**Summary of work:** A systematic literature review, using the guidance of the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-centre), of an emerging paradigm of educational research, “Design Based Research” (DBR). DBR represents the move of some educational researchers to adopt the long established methods, metaphors and discourses of the design and engineering based disciplines, and the application of these principles in performing systematic and rigorous inquiry of complex educational interventions.

**Conclusions:** The value of this fairly new methodological approach to educational research is assessed, with the view of informing ongoing debates into what is appropriate, valid and most efficacious for the progression of medical education research.

**Take-home messages:** DBR represents a potentially powerful methodological paradigm for expanding educational theoretical knowledge, while bridging the gap between theoretical findings in constrained environments and the pragmatic concerns of real world contexts.

Programmatic research in medical education: an example of symbiotic clinical education
David Prideaux*, Paul Worley, Lucie Walters (School of Medicine, Flinders University, GPO Box 2100, Adelaide South Australia 5001, Australia)

**Background:** Much of the research in contemporary medical education is small scale and individualistic. Research conducted around concepts, themes or programmes allows for aggregation and consolidation of findings. This paper will use the example of symbiotic clinical education to illustrate the strengths and weaknesses of a programmatic approach to research.

**Summary of work:** At the centre of symbiotic clinical education is a mutually reinforcing relationship between medical education institutions and health services. The model is based on four relationships: the personal/professional, the patient/clinician, the university/health system and the community/government. The research evidence for key relationships in a symbiotic approach will be presented. This will include findings on long student placements, patient-based learning, authentic supported learning, and workforce outcomes. Some specific research findings from the integrated community-based programme at the School of Medicine at Flinders University, Adelaide Australia, will be presented. This will focus on the relationships built through long placements and clinic practice patterns which promote patient-based learning without reducing numbers of patients seen.

**Take-home messages:** The symbiotic model provides a defensible model for programmatic research in clinical education. Key evidence can be presented for the components of the model but there is also an agenda for future research.

The roots of interdisciplinarity in medical education research: an introductory study
Ayelet Kuper*, Mathieu Albert (The Wilson Centre for Research in Education, University Health Network/University of Toronto, 200 Elizabeth Street, 1ES-565, Toronto, Ontario MSG 2C4, Canada)

**Background:** Funding agencies, including those supporting MER, are encouraging interdisciplinary research. An understanding of enabling/inhibiting factors for the development of interdisciplinary research fields may help MER become more successfully interdisciplinary. In order to enhance our understanding of the current state of MER, we sought to identify factors that shaped the early interdisciplinary development of this field.

**Summary of work:** Documents from the early years of MER were analysed for historical contents, demographic information, and themes related to interdisciplinarity.

**Summary of results:** We found that four key academic groups were involved in the initial phases of MER: Physicians, Educationists, Psychologists, and Sociologists. Each group had different interests, skills, and reasons for joining the field. Notably, while the non-clinical disciplines interacted with physicians in studying medical education, significant interaction between these disciplines was rare.

**Conclusions:** Multiple disciplines were involved in the early development of MER. Internal and external factors propelled certain groups towards increased focus on MER; other groups remained more marginal. However, in its early years, MER managed to involve many disciplines without achieving genuine disciplinary integration.

**Take-home messages:** Following this aspect of the history of MER forward in time may enable further understanding of the social dynamics which continue to shape our field.

An ontology of the organisation and management of medical education
Roland Ukor*, Gillian Armitt (University of Manchester, Oxford Road, Manchester M13 9PL, United Kingdom)

**Background:** The term ontology can be defined as “an explicit account of shared understanding.” Ontologies define and describe the concepts within a domain and their interrelationships. Subject-related ontologies include SNOMED-CT (clinical terms) and TIME-ITEM (medical curriculum). Ontologies underpin natural language processing techniques, and completeness of coverage of the medical education world will be important for future developments in intelligent tutoring and support.

**Take-home message:** Although reaching a more mature level as a research field of its own, MedEdRes must still remain open to new definitions of its boundaries. There are still a lot of research topics challenging the field that needs to be further scrutinized and eventually conquered.
Summary of work: This paper describes the development and gives examples from the HeLM ontology. HeLM describes 121 concepts and 318 interrelationships in the organisation and management of UK medical education. HeLM was developed in Protégé-OWL, as part of stakeholder requirements gathering and verification for a system to support cross-institutional clinical learning. The ontology was validated with university and hospital stakeholders through agreement of definitions and instances of concepts and their interrelationships.

Conclusions: HeLM differs from TIME-ITEM in its focus on the organisation and management of medical education, rather than the content. HeLM therefore supplements existing ontologies in the medical domain. It is a small UK-based ontology whose future may lie in amalgamation into one of the major medical ontologies.

Take-home message: The HeLM ontology describes the organisation and management of UK medical education and complements existing ontologies.

2J/SC1
Using a combined activity theory-life history framework to study key medical educators and their achievements in terms of educational leadership
David Wall* (West Midlands Deanery, St Chad's Court, 213 Hagley Road, Edgbaston, Birmingham B16 9RG, United Kingdom)

Background: There are great expectations that e-learning will revolutionise medical education.

Summary of work: We report on an interactive student “blog” to support learning within a PBL (problem based learning) curriculum. For each of 28 PBL cases faculty created links to relevant online resources, together with comments to aid learning. Students were encouraged to add links to the site as a collective resource. An anonymous questionnaire was distributed towards the end of the course (response rate = 100%) and visitor statistics collected.

Summary of results: Site access was limited to 33 students, who visited the site a total of 475 times in three months. The average (mean) visitor spent 9.5 minutes on the site and accessed 9.81 pages. The most viewed pages were review articles; these were also the most commonly downloaded articles, case histories being less popular. Review articles were rated useful by 66% of students, being more useful than original papers (59%), case reports (50%) and articles on evidence-based medicine (37%). The articles rated least useful related to communication skills and ethics.

Conclusions: Students use an interactive e-learning site complementing PBL teaching. Review articles are most popular; ethics and communication least.

Take-home messages: Interactive blog sites have potential, but content is critical for success.

2J/SC2
The replacement of ‘paper’ cases by interactive online Virtual Patients in Problem-Based Learning (PBL)
Terry Poulton*, Emily Conradi, Sheetal Kavia, Chara Balasubramaniam, Jonathan Round (e-Learning Unit, St George’s University of London, Hunter Wing Level 4, Cranmer Terrace, Tooting, London SW17 0RE, United Kingdom)

Background: St George’s University of London (SGUL) has a graduate entry course in undergraduate medicine with a PBL curriculum using traditional paper-based cases. The e-Learning Unit at SGUL has been developing interactive online Virtual Patients (VPs) which allows students to take different options as the cases unfold, providing decision-making opportunities and allowing students to explore the consequences of their action.

Summary of work: In a pilot study, SGUL replaced a PBL case with an online interactive VP delivered to 11 tutorial groups with a total of 78 students. A second tutorial was also delivered online, but without options. As a result of this successful pilot an entire module was converted to VPs, and a comprehensive evaluation carried out.

Conclusions: Tutors and students were in favour of online cases without the options and consequences. They believed that the ability to explore options and consequences created a more engaging experience and encouraged students to explore their learning objectives thoroughly and learn more as a result.

Take-home message: The most valued element of VPs in PBL was the ‘options and consequences’ and neither students nor tutors could see the value of just putting cases online.
Utilization of a web-based virtual patient case simulation environment (Web-SP) for assessment of medical student achievement in a problem-based learning course

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Background: We have utilized problem based learning (PBL) for preclinical medical students for many years. Unfortunately, we have had difficulty establishing an assessment tool to adequately measure a student's ability to progress through a patient case. We have recently begun utilizing a web-based virtual patient environment (Web-SP) to test students in our PBL courses.

Summary of work: A formative exam was given to 142 second year medical students. The results of the exam included a mean score of 83.65 and an exam efficiency score of 49.16% ± 0.97%, calculated by dividing the number of essential history and physical exam questions for the class by the number of questions asked.

Summary of results: Five students were unable to correctly diagnose the test case and failed the exam. Sixteen students were able to correctly diagnose the test case but were extremely inefficient, resulting in less than a passing score of 70 points. The balance of the class exam results were 19 Pass, 49 High Pass, and 53 Honors. Results of final summative exams and correlation with student class rank will be presented.

Conclusions/Take-home messages: Utilizing web-based virtual patient cases for PBL assessment is a suitable means to adequately determine student efficiency in clinical decision-making.

The applicability of Virtual Patients as PBL scenarios in the first years of vertically integrated PBL curriculum

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Background: We studied which kind of Virtual Patients (VP) were applicable as PBL scenarios for the second year medical students.

Summary of work: Three VPs were created using IVIMEDS beta version of VP manager. The extent of clinical data varied between the VPs. Four tutor groups out of twelve in the study year used these VPs instead of paper cases. The tutors of these groups observed the session where VP was used with the consecutive session with a paper case using a structured follow-up form. The students accessed the VPs on a Moodle site and its log-in data was analyzed. The VPs' study guide section contained multimedia connected to the learning goals. The four tutor groups were interviewed.

Summary of results: The tutors observed only minor changes in the discussion patterns between VP and paper cases. The VP containing a moderate amount of clinical information supported PBL best. The students experienced that VPs enlivened the sessions.

Conclusions/Take-home message: VPs can simulate authentic patient experience in PBL. Careful consideration has to be applied in offering clinical information so that it stimulates the students' interest and leads to learning goals relevant to their stage in medical studies.

ePBL: using an eTutorial to teach complex multidisciplinary international health

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Background: International Health (IH) is an area of medical education that is growing in both recognition, and emphasis within undergraduate curricula. Additionally, problem based learning (PBL) and e-learning are both being increasingly adopted.

Summary of work: A team of students, an academic and doctor created a decision-tree e-tutorial for intercalating medical students. The scenario guides participants through various roles from doctor to programme co-ordinator for an international health NGO. Students are introduced to key curriculum areas and learning resources, and the biomedical model is enhanced with anthropological, sociological, ethical and economic perspectives. The PBL cycle is applied throughout; students are encouraged to augment embedded material (including audio clips) with research findings from linked and un-linked web resources. Through this they demonstrate critical and strategic thinking, decision making, reflection and deep learning. Initial evaluation has been highly positive.

Conclusions: E-learning can be successfully used to teach medical students complex multidisciplinary problems through PBL. Students can play a key role in both developing and evaluating such resources.

Take-home messages: E-learning can be used for much more than teaching facts; The PBL cycle can be successfully applied to e-learning through the use of decision-tree software; This is particularly appropriate for curriculum elements where multi-disciplinarity is key.

Adapting problem-based learning (PBL) to millennium generation medical students by implementing problem-based learning computer-constructed concept mapping: two years’ experience at University of Montréal

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Background: The Millennium generation is a computer-oriented generation. This learning environment is an easy one for them and they are pleased and attracted by this way of learning. In PBL, one very important step is the schematization of the concepts to be learned. Computer software has been created to facilitate the creation of schemas. Concept mapping is a very interesting way of constructing these schemas.

Summary of work: At University of Montreal, we have implemented the use of software (Cmaptools ©) during both parts of PBL sessions (exploration of the new concepts to be learned in the first part and the consolidation of them in the second part). The students are using the computer in live action during the PBL sessions and similarly during their personal study. We had to adapt our implementation strategies over the first two years and we will present these.

Conclusion: We encountered difficulties and managed to overcome them to the tutors' and students' great satisfaction.

Take-home messages: It is imperative to implement gradually and stimulate students' enthusiasm.
Assessing the construct validity of the Integrated Procedural Performance Instrument as an assessment of clinical skills

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Research Question: The purpose of this study was to assess the construct validity of an Integrated Procedural Performance Instrument (IPPI) assessment, by determining whether it can discriminate between different levels of trainees.

Context: The assessment of surgical residents' clinical skills is based predominantly on performance-based evaluations of technical skills conducted on bench top models. Though this type of assessment permits an objective measurement of technical skill, it ignores a significant component of clinical performance: the ability to communicate effectively with patients. Communication skills during residency are assessed formally with the Objective Structured Clinical Examination (OSCE). These examinations focus on isolated clinical events such as obtaining consent for given surgical procedures. However, in real-life situations technical skills are often required simultaneously with communication skills. The interdependency of the two skills in a clinical encounter can have significant implications for patient care, particularly for junior trainees who may feel challenged by the need for dual-tasking. Kneebone and colleagues1 have developed an innovative assessment tool that coordinates technical and communication components of clinical performance. The IPPI consists of various clinical scenarios, each linking a bench top model with a fully briefed standardized patient (SP) to simulate a realistic clinical scenario. The trainee must perform the required technical skill while the SP provides communication and interpersonal challenges (e.g., angry or anxious patient). While this innovative assessment tool allows for the integrated assessment of technical and communication skills, there is limited data regarding its validity and reliability.

Methods: Sixteen fourth year medical students and 16 first year surgical residents participated in 4 IPPI scenarios (i.e. wound closure on arm of intoxicated patient). The participants' performances on both communication skills with the SP and technical skills on the bench top model were videotaped and scored by two blinded independent raters on previously validated assessment tools: a checklist scale (assessing specific technical actions), a Global Rating Scale of performance (GRS) and a communication scale (assessing empathy, coherence, verbal and non-verbal communication skills). To determine whether the IPPI could discriminate between different levels of trainees, we conducted a 2 (student by resident) by 4 (cases) mixed design analysis of variance on all three assessment scales.

Results: Both the checklist and the communication scales showed acceptable levels of interrater reliability (r=.84 for the checklist and r=.61 for the communication scale). The residents performed significantly better than the medical students on the checklist scale of technical skills (mean scores 73.9% vs. 59.6%, p<.05), on the GRS (mean scores 19.3 vs. 15.4 out of 25, p<.01), and on the "coherence" subscale of the communication scale (mean scores 3.9 vs. 3.4 out of 5, p<.05). The residents and medical students did not differ from each other on the "empathy," "verbal communication" and "non-verbal communication" subscales of the communication scale.

Discussion/Conclusion: The implementation of IPPI assessments during surgical residency may serve to highlight the importance of developing adequate communication and interpersonal skills. In this study, the IPPI demonstrated construct validity and moderate reliability, an essential step prior to the implementation of IPPI into summative assessments. It discriminated well between medical students and junior surgical residents in terms of their technical skills, general performance, and their coherence in explaining the procedure to patients. Interestingly, the IPPI assessment also highlighted certain aspects of residents' communication skills (empathy, verbal and non-verbal communication) that are not superior to those of medical students, bringing to light a potential gap in the surgical residency curriculum.


Using portfolio learning, peer assessment and feedback in performance assessment of clinicians: Feasibility and acceptance

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Research Question: We studied the introduction of three doctor performance assessment systems as well as their feasibility, acceptance and educational impact for the formative assessment of physician performance in eight hospitals in the Netherlands. The study extended previous work by combining peer assessment, portfolio learning, and provision of feedback guided by a skilled facilitator.

Context: Performance assessment in clinical practice is increasingly central in professional self-regulation and quality improvement in many healthcare systems. There is general agreement that a complex construct such as physician performance should be assessed using multiple methods supplemented with provision of constructive feedback. Still, there is little research into the evidence base of the different assessment methods. More than 100 clinicians from different specialties supported by 42 facilitators within a convenient sample of eight hospitals in the Netherlands participated in the study. All eight hospitals each had a project leader.

Methods: We used qualitative and quantitative methods to evaluate the introduction, feasibility, acceptance and educational impact of 3 different physician performance systems, consisting of (i) portfolio learning, (ii) one of three peer assessment instruments (namely, Violato's Multiple-Source Feedback, Ramsey's Professional Associate Rating, or the Appraisal and Assessment Instrument), and (iii) supplemented with feedback provision by a facilitator. We conducted telephone interviews and conferences with facilitators and project leaders in the hospitals to gain insights into success and fail factors of acceptance. We requested facilitators to fill in a checklist to examine feasibility of the different elements of the applied assessment system. We are also currently examining the experiences of clinicians by a postal questionnaire.

Results: All eight project leaders responded to our request for a telephone interview. Seventy-four percent of facilitators returned their checklists and eighty-two percent of clinicians returned the questionnaire. Factors related to failure of performance assessments included lack of time and concerns about confidentiality of the data. The average time required to carry out one assessment appeared to be a little over 6 hours.
Communication (78%), collaboration (74%) and management (71%) were most frequently discussed in the assessment interviews. The least discussed professional competency was health advocacy which was discussed in 35% of the interviews. Clinicians preferred the peer assessment approach to include feedback and narrative comments from co-workers and other respondents. More than 89% of volunteer clinicians would recommend the performance assessments to colleagues and 66% expected their professional performance to improve as a result of the formative assessment.

**Conclusion:** This study demonstrates that formative performance assessment based on portfolio learning and peer assessment supplemented with facilitated feedback is highly accepted by doctors provided that confidentiality is guaranteed and time investments are clear and reasonable. The perceived impact of the assessment is comparable to earlier studies showing that two-thirds of the participating specialists expected their professional performance to improve. Assessing doctor performance using systems of peer assessment or multisource feedback is gaining widespread recognition in different healthcare systems. Health educators and other stakeholders in professional development should include facilitated, qualitative feedback including actionable feedback from peers during doctor assessment.

**2K/RP3**

**The reliability of the mini-CEX for summative assessment has not been adequately clarified**

Darryl McGill* (The Canberra Hospital, Yamba Drive, 2605 Garran, Canberra ACT, Australia)

**Research Question:** What is the reliability of the assessment methods used by the UK NHS to measure the clinical competence of foundation year doctors?

**Aim:** Undertake a systematic review to establish the concise reliability of the assessment methods, firstly for the mini-Clinical Evaluation Exercise (mini-CEX).

**Context:** The reliability of the multiple assessment methods and sources of assessment is highly relevant because these are used to provide evidence of competence for “high-stakes” summative assessment for unconditional registration to practice medicine. Although claims of an evidence-base for the reliability of these assessments are repeatedly made, there is no systematic review documenting this claim or evaluating study quality.

**Methods:** Sources for searching included traditional electronic databases MEDLINE, EMBASE, PsycINFO, ERIC, CINAHL, and the EBM Reviews from OVID, and an extensive ‘grey’ literature search and other sources. Search strategies were specific for the mini-CEX using text words and thesaurus. A sensitivity analysis for a context-restricted search on clinical and professional competence gave over 2,500 articles and did not add further papers. Citation selection criteria included all languages from the beginning of each database. Studies with specific reliability measurements underwent a study quality evaluation. The available articles lead to a revision of the inclusion criteria in a second round of selection process to include any paper with a reliability measure and a population of any medical trainee. Study quality and information extraction using a modified appraisal sheet, data abstraction sheets helped to identify categories of reliability evidence, population and context, study design, statistical methods, and discussion points. Tabulation of reliability methods used allowed comparison with all methods available.

**Results:** The specific search found 28 articles; excluded 5 by abstract; retrieved 23 for full-text screening; and selected 9 articles for inclusion. All studies claimed to test reliability and the methods used included: 5 used reproducibility coefficients (Coefficient alpha); 2 used ANOVA for reliability over time; 5 used inter-rater variability; 3 included SEM; 3 included CI; and 3 used generalisability theory. A meta-analysis of any reliability measure could not be performed because of heterogeneity in the population; process; analytic methods; and study design. An analysis of the potential for bias indicates methodological factors could lead to unmeasured bias introducing error into the reliability estimates. For example, the studies have inappropriately assumed that the scores for the items on the mini-CEX are normally distributed with an independent distribution across the full scale (all studies); that the rankings for each item are made independently from the other items (8 studies); that assessor variation is negligible (many acknowledged this but neglected this bias and have not undertaken a sensitivity analysis as to the potential impact and only one used a design format to measure it); that inter- and intra-item association and variance is not influenced by inclusion of multiple scores by the same individuals (assessed and assessors); that the range of scores for each individual assessor is very narrow suggesting that the scoring may be criterion based; and the impact of missing values was ignored without any sensitivity analysis (2 major studies). Only one study was of sufficient quality and unbiased to be included in a systematic review.

**Conclusion:** The primary research was not sufficiently free from bias to provide reliable estimates of reliability for the mini-CEX. Early studies with major design and analysis problems indicated that they were “subject to various potential biases and should be repeated in a controlled setting with more sophisticated analyses”. A later study with more sophisticated design and analysis, confirmed that the identified biases have an impact and place in doubt the reliability of the mini-CEX for summative assessment because of rater variation and individual influences on item rating.

**2K/RP4**

**Physician versus non-physician assessment of clinical competence using an Objective Structured Clinical Examination**

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**Research Question:** Is there a difference between physician and non-physician raters in the assessment of clinical competence?

**Context:** A high-stakes assessment, using a fourteen station Objective Structured Clinical Examination, was undertaken to evaluate the clinical competency of thirty-nine International Medical Graduates. One physician rater was assigned to evaluate each case. All candidate/standardized patient interactions were assessed using a case-specific checklist and a global score to evaluate overall performance. All interactions were videotaped using an unobtrusive, built-in audio and video recording system.

**Methods:** For the physician versus non-physician rater study, all videotaped interactions for fifteen randomly selected candidates were scored by one physician and two non-physician raters. The physician rater was not an examiner in the original high-stakes assessment. The physician rater trained both non-physician raters. For each station, the physician rater reviewed the case-specific checklist, demonstrated any physical assessment procedures required, and outlined a scoring rubric for the global score. Each checklist item was scored using a ‘yes’ or ‘no’ format. The global score was rated on a five-point scale. Three scores were calculated: checklist, global, and total (checklist plus global). For the statistical analysis, physician rater data from the original high-stakes assessment were pooled with the scores obtained from the videotape physician rater.
An intra-class coefficient (ICC) was used to calculate inter-rater reliability and Generalizability analyses using a two-facet crossed design was used to calculate the variance components for the physician and non-physician rater data.

**Results:** The ICC for the checklist scores range from 0.06 to 0.87 for the pooled physician raters (PR) and 0.61 to 0.95 for the non-physician (NP) raters. Global ICC results range from zero to 0.63 for the PR and 0.03 to 0.67 for the NP raters. The ICC on the total scores range from 0.04 to 0.82 for the PR and 0.54 to 0.94 for the NP raters. Generalizability results for the PR data revealed non-zero percent variance in the rater facet, which indicates there are differences between the raters scores. The differences are most apparent on the global score (9.8%) in comparison to the checklist score (2.7%) and total score (5.3%). Generalizability results for the NP raters data revealed non-zero variance in the case and case by rater facets. For the case facet, the differences are most striking on the global score (9.5%) in comparison to the total score (1.5%) and checklist score (0.9%).

**Conclusion:** The ICC results revealed higher coefficients and a narrower range of the coefficients for the non-physician checklist scores, which is representative of the standardized training provided. The ICC results are lower for the global scale, which indicates less reliability of the global format for both the physician and non-physician raters, thus reflecting the absence of a structured scoring rubric for the global rating. Generalizability analyses revealed a non-zero variance on the rater facet for the physician scores and non-zero variance for the case and case by rater facets for the non-physician scores. These results emphasize the importance of standardized training for raters and the requirement for extensive case by case training for non-physician raters. The non-physician results demonstrated more consistency using the checklist format due to the standardized training. Both the physician and non-physician scores were influenced by the absence of a structured scoring rubric for the global rating. Emphasis on rubric development and case-specific training could result in the more reliable evaluation of performance-based assessment by non-physician raters when cost and availability of physician raters is an issue.

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**2L/SC1**

Levels and predictors of stress among medical students in Alexandria, Egypt  
Soha Rashed Mostafa*, Ahmed Mokhtar Bassiouny, Mostafa Hassan El Shafei, Amir Hamdy El Tarhony (Faculty of Medicine, Alexandria University, Community Medicine Department, Alexandria 00203, Egypt)

**Background:** This study was conducted to measure the prevalence of psychological morbidity among undergraduate medical students in Alexandria Medical School, identify predictors of stress, and propose appropriate interventions.

**Summary of work:** A cross-sectional, questionnaire-based survey was carried out. The psychological morbidity was assessed using the 30-item General Health Questionnaire. A questionnaire was used to assess sources of stress and their severity.

**Summary of results:** The overall prevalence of stress was high (85.2%). Distress was experienced by medical students in all academic years. Principal stressors were related to academic pressures and psycho-social/quality of life issues rather than to personal problems. Significant predictors of stress included: female sex; concerns over choice of medical career; dissatisfaction with current teaching methods, possibility of future incompetence; feeling that medical profession has failed; curriculum overload; nature and subjectivity/unfairness of examinations; effect on private life with lack of time for recreation, personal hobbies, social relationships, or sports; fear of dealing with patients; inability to deal with death or suffering; and lack of supportive home atmosphere/environment.

**Conclusion:** The high level of psychological morbidity warrants need for student support and stress management interventions. Curricular contents, teaching and student assessment approaches need to be evaluated and improved.

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**2L/SC2**

Social anxiety in medical students: Impacts on communication skills  
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**Background:** Undergraduate medical education utilises small group workshops for teaching clinical communication. During these a student’s ability to communicate is observed by others. Individuals with high levels of social anxiety may avoid such workshops. This study aimed to provide evidence of the levels of social anxiety within the undergraduate medical student population and assess the impact on ability to communicate with patients.

**Summary of work:** Medical undergraduates (n = 247) completed the Social Interaction Anxiety Scale, the Social Phobia Scale and a short version of the Communication Skills Attitude Scale. Social anxiety levels were lower in medical students compared to groups studied by Mattick and Clarke (Behavior Research and Therapy 1998; 36) including psychology students and a community sample (t-tests, P = 0.001). Female students with higher levels of social anxiety were more likely to have a negative attitude towards communication skills teaching (r = 0.146, n = 145, P = 0.04). A second study repeated the initial survey and added data on self reported communication skills and the relationship with OSCE grades.

**Conclusions/Take-home message:** Important evidence was obtained regarding the relationship between levels of social anxiety, self reported and assessed communication skills and attitudes towards communication skills teaching.

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**2L/SC3**

High anxiety in medical students may adversely affect their attitudes towards patient care  
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**Background:** Medical students’ success in undergraduate assessments may not be a good predictor of performance in clinical practice. We have identified factors relevant to medical education which may influence the quality of patient care and used these to develop a longitudinal cohort-based research programme. We report data relating to anxiety and the development of negative attitudes towards end of life care.

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**Short Communications**

2L Stress and the student
**Summary of work:** 301 students entering years 1 & 4 of a 6 year undergraduate programme in 2007 completed validated questionnaire surveys about learning styles, empathy, emotional wellbeing, attitudes towards end of life care and death anxiety.

**Summary of results:** 20% of students were classified as “anxious” using anxiety - depression and death - anxiety scores. This was unrelated to gender or experience of personal loss. “Anxious” students were more likely to hold negative views about caring for dying patients and to record higher depression and personal distress scores.

**Conclusions:** Anxiety and depression in medical students may be associated with the development of adverse attitudes towards aspects of clinical care.

**Take-home message:** Identifying anxious students can inform the development of appropriate educational input with beneficial effects on future clinical practice.

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**Background:** Although anxiety is one of the most studied subjects, there is limited information available on students’ anxiety about communication with standardized patients. The main purpose of this study was to measure and compare medical students’ anxiety levels according to sex and curricular language before entering standardized patient encounters.

**Summary of work:** 194 first-year medical students participated in this study. Students were asked to complete the Turkish form of the Spielberger State Trait Anxiety Inventory (STAI). STAI is a 20 item self-report questionnaire in which each item is scored one to four. Higher scores indicate a higher level of anxiety. The ratings were collected and the anxiety scores were obtained. Data were analysed by employing Two-Way Anova for independent samples.

**Summary of results:** The anxiety scores on the STAI and analysis of variance showed no significant differences between both sex and curricular language (Fsex=2.072 p=0.152; Flanguage=0.429 p=0.513; Fsex*language=0.115 p=0.735).

**Conclusions:** This insignificant difference is probably the result of assessing first-year medical students who communicated with standardized patients for the first time.

**Take-home message:** Most of the studies about the anxiety of communicating are related to personal development not sex or curricular language.

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**2M/SC1**

**Behaviors of highly professional resident physicians**

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**Background:** Unprofessional behaviors in medical school predict high stakes consequences for practicing physicians, yet little is known about relationships between specific behaviors and professionalism during residency.

**Summary of work:** We conducted a comparative study of 148 first year internal medicine residents at Mayo Clinic from July 1, 2004 through June 30, 2007 to identify behaviors that distinguished highly professional residents from their peers. Professionalism was determined by multiple observation-based assessments by peers, senior residents, faculty, medical students, and allied health over 1 year. Highly professional residents were defined as those with total professionalism scores in the top 20% of assessments. Residents with scores in the lower 80% served as comparisions. We compared residents’ In-Training Examination (ITE) scores, Mini-Clinical Evaluation Exercise (mini-CEX) scores, and percentage of completed evaluations.

**Summary of results:** The mean total professionalism score among highly professional residents was 4.40 compared to 4.02 among comparison residents on a 5-point scale (p<.001). In multivariate analysis, residents with professionalism scores in the top 20% achieved higher scores on the ITE (OR 1.07, 95% CI 1.01-1.14; p=.046) and mini-CEX (OR 4.64, 95% CI 1.23-17.48; p=.02), and completed a greater percentage of evaluations (OR 1.07, 95% CI 1.01-1.13; p=.02) than residents with lower professionalism scores.

**Conclusions/Take-home messages:** Observation-based assessments of professionalism are associated with residents’ knowledge, clinical skills, and behaviors. These factors may be tracked during residency to monitor professionalism.

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**2M/SC2**

**Aspirations and expectations of medical students**

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**Background:** In Liverpool, all medical students have a “personal tutor” who is a member of academic staff who is expected to be the first point of contact for the student in case of difficulty, and to support them as they settle in to University. Since 1993 we have been asking the students “What makes a good personal tutor?” Since 2006 we have also been asking medical students at each stage of their programme, “What defines professionalism?”

**Summary of work:** The expectations of students concerning their personal tutors were assessed using a questionnaire delivered over the 3 years before the institution of a reformed PBL-based curriculum, and again three years afterwards.

**Summary of results:** Irrespective of the style of curriculum, students regarded the personal qualities of their personal tutors more important than what they actually did. Through the auspices of the Centre for Excellence in Professionalism in Liverpool we have also been establishing which elements of professionalism students regard as most important. Using a combination of Q-sort techniques, focus groups and interviews, we have observed a change over the years of the programme. In the early years of the programme students regard professionalism in terms of competencies. Following graduation, new doctors regard personal qualities as being much more important.
Conclusions/Take-home messages: There are striking similarities between the terms highlighted as most important by students in each of the studies. The qualities which students expect of their personal tutors in undergraduate medical school match those to which junior doctors aspire once they qualify.

2M/SC3
Medical students' perceptions of personal and professional development using a novel self-repertoire grid approach
Janine Carroll*, Jo Hart, Caroline Boggis, Isobel Braidman* (The University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom)
Background: We developed a novel “participant-centred” approach based on a self repertory grid, to reveal constructs used by students to analyse their own development over their first two years.
Summary of work: At the beginning and end of year 1 and 2, students (N = 69) gave 5 descriptors of “a good medical student” and the opposite. They rated themselves on a 6 point scale between them. At the beginning of the year 345 “ideal” descriptors were generated. Fifty were randomly selected and sorted into themes, by self-selected medical students. Seven themed constructs were thereby defined by concept mapping. We then determined the frequency with which students used each construct and the proportion who used a construct at least once.
Summary of results: At the beginning of year 1, Personal and Professional Conduct, Committed Work Ethic and Time and Self Management (28%, 25% and 22%) were used most frequently. Team Work, (8%) Learning Skills (8%) Personal Welfare (7%), and Personal Development/reflection (2%) were used less frequently. At the end of years 1 and 2, only Personal Development/reflection (6%) increased significantly (p<0.05, Wilcoxon's test). Self rating for Time and Self Management, Committed Work Ethic, and Personal and Professional Conduct (p<0.05) were all significantly nearer the “ideal” after the first year.
Conclusion/Take-home messages: Our approach indicated the most salient constructs and could detect changes in perceptions of professional development in a population of students.

2M/SC4
Medical students' professionalism dilemma situations: The whats and hows of behaviour explanations
Lynn V Knight*, Charlotte E Rees (Division of Medical Education, School of Medicine, Cardiff University, Room 158, Upper Ground Floor, B-C link corridor, Heath Park, Cardiff, CF14 4XN, United Kingdom)
Background: Students' professionalism is paramount. While their oral explanations of professionalism lapses have been explored, these verbal explanations focused on hypothetical rather than enacted behaviours. The stories we tell are ‘verbal actions’ that achieve social functions (e.g. identity formation, impression management). This study aims to explore the types of professionalism dilemmas medical students experience and how they explain their behaviours.
Summary of work: We are conducting group and individual discussions across all cohorts at three medical schools (England, Wales and Australia). Data have been collected at one School (England) and analyses are currently underway: a thematic analysis (the whats) of students’ personal incident narratives, and an analysis of students’ behavioural explanations using Malle’s F.Ex coding scheme (the hows).
Summary of results: Preliminary thematic analysis reveals that students experience numerous professionalism dilemmas within and outside the school environment. Perceptions about what constitutes a dilemma seems to shift across cohorts, possibly reflecting the inculcation of a professional identity. Further results from the F.Ex coded data will be ready in August 2008.
Conclusions/Take-home messages: An understanding of the diversity of dilemma situations experienced by medical students (the whats) and the psychosocial and linguistic aspects of their explanations (the hows) is important to help develop professionalism assessments.

2M/SC5
A mixed methods study of student definitions of medical professionalism, and perceptions of where it is learned, throughout their undergraduate careers
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Background: Medical educators must reassess professionalism curricula in light of evolving developmental definitions, meeting contemporary undergraduates' learning needs. We know how we are teaching professionalism; but how is it learned? We explore undergraduate medical students' definitions and learning experiences.
Summary of work: Tailored questionnaires asked students about best learning (quantitative), definitions of professionalism and suggestions for curricular improvement (qualitative). Ninety (69%) Year One, fifty-four (49%) Year Two, and fifty-seven (53%) Year Three students responded. Descriptive statistics summarized 'best learning' data. Focus group (n1=5, n2=6) and qualitative questionnaire information was analyzed using cross-case categorical aggregation, seeking themes in student definitions and curricular suggestions.
Summary of results: Core concepts of professionalism are stable but interpretations changed with increased seniority. Students rated case-based and clinical courses highest for professionalism learning, congruent with assertions that they learn best from experience, observation, and discussion. Year One students believed they had considerable knowledge of professionalism but wanted directive teaching; Year Three students found directive teaching counterproductive, congruent with internalization of professional values and increasing reliance on self-regulation.
Conclusions/Take-home messages: (1) Learning doesn't always correlate with teaching. (2) Rules substitute until values become internalized. (3) Convert behaviours to values using helical curricula. (4) Involve students in teaching and evaluation.
2N/SC1
The development of a national blueprint for competences of medical teachers
W M Molenaar*, A Zanting, P van Beukelen, W de Grave, J A Baane, J A Bustraan, R Engbers, Th E Fick, A Jacobs, J M Vervoorn (University Medical Center Groningen, PO Box 196, Groningen 9700 AD, Netherlands)

Summary of work: A task force representing all Dutch medical, dental and veterinary medicine schools designed a blueprint of competences for medical teachers. Two dimensions were distinguished: 1. Teacher’s tasks divided in 6 domains (development – organization – execution – coaching – assessment – evaluation) with 4-5 subdomains each. 2. Three organizational levels (micro: teaching itself; meso: coordinating parts of programs; macro: coordinating whole programs). For each of the subdomains at the 3 organizational levels competences were described as desirable behavior.

Summary of results: A blueprint of competences for medical teachers is available. It is applicable in different institutions and can be worked out in more detail for the local situation.

Conclusions: The blueprint can facilitate interinstitutional comparison of teacher qualifications and promote teachers’ mobility; it can be used by different groups, e.g. individual teachers, their trainers and human resource managers; it can also be used as a quick scan of the quality level of institutional teaching staff as a whole.

2N/SC2
Teachers’ conceptions of their roles in a (veterinary) medical curriculum
T B B Boerboom*, S T T Hubers, D H J M Dolmans, A J J A Scherpbier, P van Beukelen (Utrecht University, Faculty of Veterinary Medicine, Yaledaan 1, Utrecht 3584CL, Netherlands)

Background: Individual teaching performances still play a minor role in career development of teachers in medical education. To change this it is necessary to develop criteria that can be used to assess teachers’ performances. To achieve this, insight is needed in what roles are important in the perception of teachers and whether they feel competent in these roles.

Summary of work: We used a teaching competency framework developed for a student centered curriculum containing 5 teaching roles e.g. the person as teacher and the facilitator of learning processes (Tigelaar 2004). Based on this framework a questionnaire, developed with an expert panel, was used to ask the teachers at the Faculty of Veterinary Medicine in Utrecht (N=251) about their conceptions of their teaching roles.

Summary of results: The respondents state that every role is important in their work and that they are feeling competent in fulfilling these roles. Differences between several groups of teachers (discipline, educational training) are mainly found regarding these self-perceived competences.

Conclusions/Take-home messages: Criteria for assessment of teacher performance need to be based on all 5 teaching roles. Further research is necessary to find out how these different roles can be assessed.

2N/SC3
The twelve roles of the teacher: perception of Iranian clinical teachers
Nasibeh Vatankhah*, Mohammad Ekhameh, Hamid R Baradaran, Rokhsareh Aghili (Medical Education & Development Centre, Iran University of Medical Sciences, Tehran 14155-5983, Iran)

Background: Medical education has evolved substantially over the past decade. During recent years the exception of the community has been changed dramatically about roles of physicians.

Summary of work: A translated form of International Medical Association for Medical Education (AMEE) questionnaire used to measure the twelve roles of the clinical teachers. The questionnaire was administered to forty-two teachers who engage in medical students’ training in Iran University of Medical Sciences. The questionnaire assessed the clinical teacher’s perception about the importance of twelve roles, current personal commitment, and comparing their preferred personal future commitment to each role.

Conclusions/Take-home messages: Creating a medical school culture of professionalism requires not only student focus, but faculty focus as well. Faculty development in professionalism topics can improve student perceptions of faculty attitudes and behaviors.
Summary of results: Learning facilitator such as supporting students’ learning in a problem based manner (mean=2.2) and resource developer (mean=2.5) had little importance to the medical school teaching programme. Almost all items were considerable for participants in their future commitment.

Conclusions: The present study was the first report of Iranian clinical teachers’ perception of their role in the education process using a self reported standard-questionnaire.

Take-home message: It is suggested that the role of teachers in Iranian medical schools should be taken into account for better educational planning in the future.

2N/SC4
Self-identification of PhD students with the teacher’s role
Jadwiga Mirecka* (Jagiellonian University Medical College, Department of Medical Education, str. Kopernika 19 E/1, Krakow 31-501, Poland)

Background: An ability to teach others is one of the competences expected nowadays from graduates of PhD studies. Many PhD programs include courses preparing students for the teacher’s role. The aim of the study was to check how PhD students perceive themselves as teachers, what are their fears and how the course can help them.

Summary of work: A survey included 93 PhD students from the 1st and 3rd years of studies, representing: medicine, dentistry, pharmacy, public health, laboratory medicine, psychology and nursing. Students were asked to indicate on a 3 grade scale whether they would like to be academic teachers and asked about the positive and negative aspects of being a teacher, about their fears and problems so far encountered.

Summary of results: It was found that an essentially positive attitude of PhD students towards their future role as teachers seemed to decrease in parallel with their own teaching experience. The main anxieties were related to: a burden of students’ assessment, lack of self-confidence, time consumption, conflict of duties and inadequate reward.

Conclusion/Take-home message: At least some of the listed problems can be diminished by a properly structured pedagogic course.

2N/SC5
Attributes of excellent consultant role models: Relevance and presence in pediatric specialty training
Reinoud Gemke, Salmann Sana, Hanneke van der Wijngaart, Scheltus van Luijk, Albert Scherpbier* (VU University Medical Centre, Department of Pediatrics, Po Box 7057, Amsterdam 1007 MB, Netherlands)

Background: Effective role models are important in medical education, yet little is known about the characteristics of physicians serving as role models and the match of these characteristics with requirements of specialty registrars (SpRs). Moreover, the relevance of role model attributes may change with increasing seniority of SpRs.

Summary of work: Based on the literature a 30 item questionnaire comprising 5 domains (Personality, Clinical skills, Teaching skills, Research skills and Others) was used to identify characteristics of clinicians as role models. Two national cohorts of first and last (5th) year pediatric SpRs assessed the relevance of each item and the extent to which these were present in their consultant-teachers.

Summary of results: Substantial discrepancies between the relevance and the presence of attributes for role models were found in all domains in 1st and 5th year SpRs. Interestingly, in 6 of 7 items of Teaching skills and in only 2 items of other domains, significant differences between 1st and 5th year registrars were found.

Conclusion/Take-home messages: Many attributes of excellent role models are related to modifiable behaviour which, when strengths and weaknesses are identified, can be acquired and may help to enhance clinical training and faculty-staff development.

2N/SC6
What competencies are required for clinical supervisors and heads of specialist training programs?
R O B Gans*, C den Rooyen*, V Schellhout-van Deventer*, J H Hoekstra (The Royal Dutch Medical Association’s Committee for Modernization of the Specialist Training Programs, KNMG colleges, Mercatorlaan 1200, Utrecht 3528 BL, Netherlands)

Background: The Royal Dutch Medical Association accepted the CanMeds framework as a general outline for all postgraduate medical training in the Netherlands. The framework describes the essential roles and key competencies for all specialist physicians. At this moment most specialist training programs are completely rewritten based on these new principles. The 7 CanMeds domains must be incorporated in each part of a program. This requires a new professional attitude for the trainee where self reflection on individual progress is essential. Feedback on the program and teachers are an important part of the learning process. In this respect feedback on the competencies for clinical supervisors and directors of the whole program are accepted as an integral part of the new era.

Summary of work: Most clinical training is done in a setting characterized by learning in daily medical activities with an integrated practice of many competencies. This situation differs from the learning environment of the medical student where competencies are learned more separately by teachers focused on well defined parts of a curriculum. Therefore, not all the roles of a medical teacher as described by Harden and Crosby are applicable to doctors responsible for clinical training. After an extensive search we collected published descriptions of competencies with matching indicators. Using the focus process we retrieved relevant items for clinical supervisors and heads of specialist training programs. As for the trainees the competencies are grouped in the 7 CanMeds domains. The supervisors and training directors will show these competencies in their roles as: 1, role model; 2, teacher; 3, guard of progress and assessor, and 4, creator of an effective teaching environment.

Conclusion/Take-home message: Within the CanMeds framework it is feasible to develop competencies and instruments to measure the effectiveness of clinical supervisors and heads of specialist training programs.
Workshop

20 Getting published

John Spencer1*, Kevin W Eva2* (1Newcastle University, UK; 2McMaster University, MDCL 3522, McMaster University, Hamilton Ontario L8N 3Z5, Canada)

Background: Survival in academia and advancement in training depend, at least in part, on publication, ‘publish or perish’ providing a mantra that is possibly more accurate now than ever before. The positive side of this is that publication is the lifeblood of academic life, providing the main medium for dissemination of ideas and advancement of knowledge, both of which are defining features of the scientific process. The last few years have seen a significant increase in submissions to health professional education journals, making publishing ever more competitive. Adding further to the challenge is that such journals are slowly ‘raising the bar’ in terms of standards for publication.

Aim: With this in mind the goals of this workshop will be to provide authors (or potential authors) with a better understanding of what makes a good paper, where the common pitfalls lie with respect to writing and submitting papers, and what goes on ‘behind the scenes’ of the publication process.

Who should attend: Anyone who writes, or is intending to write, papers for publication.

Level of workshop: All

Workshop

2P Developing a mentoring program: a new form of faculty development

Meenakshy Aiyer1*, Gwen Lombard2*, Janet Riddle1* (1University of Illinois, Peoria, Illinois 32610, United States; 2University of Florida, Department of Neurosurgery, Health Sciences Center, 1600 SW Archer Road, Gainesville Florida)

Background: Since the time of Odysseus, mentoring has been recognized as an essential element for the development of learners and young faculty. Numerous studies in business and medicine have demonstrated the professional and personal benefits of mentoring.

Goal: The goal of this session is to provide medical educators with the tools needed to create a mentoring program for junior faculty and residents at their own institution.

Objectives: 1. Discuss the importance of mentoring in career development; 2. Describe mentoring and portfolios; 3. Discuss what makes successful mentors and mentoring programs; 4. Formulate a plan for development of a mentoring program

Workshop format: An interactive format with small group discussions.

Content: 1. Overview of mentoring programs including resources, curricular design, implementation, and evaluation/outcomes. (20 minutes); 2. In small groups, participants will analyze two case studies using a worksheet. (15 minutes for each); 3. Small groups will share case study analysis and identify themes that could guide the implementation of a mentoring program. (10 minutes); 4. Participants in small groups will outline how they will implement such a program at their institution (20 minutes); 5. Closure and Evaluation (10 minutes).

Intended audience: Faculty, educators and administrators

Level of workshop: Intermediate

Workshop

2Q Challenges of debriefing high-fidelity simulations: transferring competencies to on-the-job performance

Anthony Errichetti (Texas A&M HSC COM, Scott and White Hospital and New York College of Osteopathic Medicine, 2401 South 31st Street, Temple 76508, United States)

Background: This interactive workshop will present a systematic, theory-based model of debriefing, the process used to review and discuss simulated patient encounters. The major goal of simulation training is to facilitate the transfer of competencies from training to the workplace. Debriefing is the essential bridge between simulation training and on-the-job performance. The presenters will demonstrate a debriefing model that includes learner self-assessment, receiving feedback and debriefer inquiry into the learners’ activities and motivations. They will show how the “debriefing mindset” becomes part of the learners’ repertoire of skills, enabling them to ultimately self-assess their own performance and actively respond to medical and environmental situations during future encounters in actual healthcare situations.

Intended outcomes: Participants will understand learning theories underlying simulation, patient training and debriefing, learn debriefing techniques and learn to use video during the debriefing process.

Structure: Presentation of debriefing theories and debriefing model (30 minutes); Exercises: Participants will view a standardized patient encounter (video) and a medical team patient simulation encounter (video) and discuss debriefing strategies (50 minutes); Question and answer (10 minutes).

Who should attend: Clerkship and Residency Program Directors, Healthcare Educators, Medical Educators working with Standardized Patients or Clinical Simulation

Level of workshop: Intermediate to Advanced.
**Workshop 2R**  
Teaching Quality Improvement, systems and practice-based learning: successful examples from training programs

**Eric S Holmboe**, Lisa N Conforti*, Brian Hess*, Sarah Hood, Lorna A Lynn (American Board of Internal Medicine, 510 Walnut Street, Suite 1700, Philadelphia 19106, United States)

**Background:** Quality improvement (QI), systems science and practice-based learning are core competencies required of all physicians. In this interactive workshop, we will explore successful, evidence-based strategies to teach and evaluate these competencies in postgraduate training programs. We will specifically review experience with a web-based self assessment tool, practice improvement modules (PIMs). Developed by the American Board of Internal Medicine, PIMs use chart abstraction, patient surveys, and a practice-system survey to help trainees use data from their own practices to develop and report on a QI plan to improve competence and patient care. Over 20% of US internal medicine residencies have used ten different chronic disease and preventive care PIMs.

**Intended outcomes:** Familiarize participants with effective educational and assessment tools, share lessons learned in US use of PIMs, explore possibilities for international use of modules in training programs.

**Structure:** Review of current evidence-based tools, demonstration of PIMs by faculty with hands-on experience by participants, small group discussion of data from modules completed by US programs and the quality gaps identified, group discussion of potential strengths and weaknesses of various tools for international use.

**Who should attend:** Training program directors and other clinical faculty

**Level of workshop:** Appropriate for all levels.

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**Workshop 2S**  
Simulation as preparation for program accreditation

Deborah Danoff, Lucinda Whitman*, Margaret Kennedy* (The Royal College of Physicians & Surgeons of Canada, 774 Echo Drive, Ottawa, ON K1S 5N8, Canada)

**Background:** The Royal College of Physicians & Surgeons of Canada (RCPSC) is mandated to accredit more than 700 postgraduate (residency) programs. This regular peer review process is conducted by teams of medical educators and clinicians. To assure fairness and uniformity of the process, all accreditors participate in training sessions which include a simulation of the review process using actual documentation.

**Intended outcomes:** By the end of the session, participants will: (a) understand the components of the accreditation process; (b) experience the elements of participating in the accreditation process; (c) describe the application of this simulation to their own accreditation process.

**Structure:** This interactive session is led by experts responsible for oversight of the RCPSC accreditation process.

**Session agenda:** Overview of the RCPSC accreditation process (formal presentation) 15 minutes; Simulation of accreditation session (small groups) 45 minutes; Debriefing (small groups) lessons learned, application to other accreditation activities, resources necessary to develop and sustain a simulation program 20 minutes; Final comments 10 minutes.

**Who should attend:** Accreditation organization staff, residency program directors, medical educators, individuals interested in developing accreditation programs.

**Level of workshop:** Beginner/Intermediate

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**Workshop 2T**  
Turning the kaleidoscope: exploring education for professionalism

Faith Hill*, Kevin Galbraith*, Anja Timm* (School of Medicine, University of Southampton, Division of Medical Education, Boldrewood Campus, Highfield, Southampton SO16 7PX, United Kingdom)

**Background:** In the School of Medicine at the University of Southampton we have developed a kaleidoscopic model that revolves around three areas of influence on medical professionalism. The three are personal development, clinical practice and the individual's relationship to the organisations that employ and regulate them. We have used this model to map the provision of learning and teaching of professional values, attitudes and behaviours for medical students and we are developing our medical curriculum in response to this approach.

**Intended outcomes:** The workshop will explore different models of professionalism and will consider the relationship between professionalism and ‘fitness to practise’. Through viewing these issues from different perspectives, participants will gain knowledge and skills relating to the learning and teaching of professionalism, with particular reference to medical undergraduates.

**Structure:** The workshop will be highly interactive and will explore participants' views and experience in the following areas: Models of professionalism: different views and perspectives; Teaching professional attitudes: sharing challenges, opportunities and examples; Assessing professionalism: what is desirable and what is feasible?

**Who should attend:** Anyone with responsibility for introducing or developing education for professionalism with medical and other healthcare students.

**Level:** Beginners and intermediate.
Background: As communication experts and educators who mediate, teach and model sophisticated communication skills with our patients, clients and students, we ourselves are not always comfortable applying these skills and techniques in managing our own collegial conflict. Without effective models or training, tensions between colleagues can become increasingly problematic. The choice to approach or avoid conflict is inextricably linked to our experience, confidence and perceived competence in resolving conflict.

Intended outcomes: Reflect on one's own response to conflict; Examine the personal and professional issues that precipitate conflict; Greater understanding of attribution theory and pro-social versus anti-social responses; Observe and debrief a simulated collegial conflict; Gain knowledge of the complex communication skills required in approaching, addressing and resolving challenging collegial conflict; Active problem solving exercises.

Structure: Interactive exercises which promote reflection and exchange of ideas; Problem solving exercises; Collegial dispute simulation; Active voluntary participation and facilitated discussion in a safe, collegial environment; Question and answer opportunities.

Who should attend/workshop level: Intended for professional practitioners, faculty and educators across all health care disciplines, interested in resolving collegial conflict within their professional settings.

Level of workshop: Beginner through to advanced levels.

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Workshop

**2V The professionalism of teaching**

L Randol Barker (Division of General Internal Medicine, Johns Hopkins Bayview Medical Center, 5200 Eastern Avenue, MFL Bldg, Center Tower, Suite 2300, Baltimore, MD 21224, USA)

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 and practiced through tutor-trainee communication in the hidden and informal curriculum; (3) Their own strengths and potentials as learners and practitioners of the POT.

Structure: Overview of the Core competencies for the Professionalism of Teaching; Illustrative vignettes, with participant input. World Café Exercise: Orientation; in pairs: (1) Share reflections on personal experiences with the POT; (2) Identify strengths and learning edges in one's POT. Groups of 4: Identify core themes from POT reflections. Consensus-building: Whole Group: Using themes, list ways to enhance the learning/practicing POT. Closure: Each participant: Write down plan for enhancing one's POT. Materials: Slides from presentation, Definitions, Annotated Reading List.

Who should attend: Clinical tutors.

Level of workshop: Intermediate.

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Posters

**2W Communication skills / Continuum of education**

2W/P1 Communication with a self-diagnosed patient

Eeva Pyöälä* (Research & Development Unit for Medical Education, P.O. Box 63 (Haartmaninkatu 8), University of Helsinki, Helsinki 00014, Finland)

Background: Today, the patients often seek information on the internet before a consultation and propose a diagnosis to the doctor. This paper studies the students' performance at an OSCE station focusing on this type of communication.

Summary of work: In an 8-station-OSCE, one station focused on communication skills. There, the students encountered an active patient who proposed to the doctor a web-based diagnosis of fibromyalgia. The topic of well-informed and self-diagnosed patients had been discussed during the communication skills studies, but the students had not practiced this type of communication with standardized patients.

Summary of results: The overall level of the students' OSCE performance was good. Most students (83%) listened to and dealt with the patient's web-based diagnosis proposal in an adequate and professional way. However, in comparison to the earlier OSCE stations focusing on communication skills, relatively few students (39%) offered the well-informed patient an opportunity to ask further questions.

Conclusions/Take-home messages: The OSCE-station showed that the students were good at receiving a patient's self-diagnosis. Nevertheless, they seemed to limit the patient's activity by not giving her room to ask questions. In order to further improve the students' performance, this type of encounter should be systematically practiced in the communication skills program.
2W/P2
The course “Introduction to Clinical Medicine” - a new teaching concept for medical interviewing and medical history taking

M Sennekamp, K Gilbert, H M Schafer, S Kujumdshiev, F M Gerlach (Institute for General Practice, Johann Wolfgang Goethe University, Theodor-Stern Kai 7, Frankfurt am Main 60590, Germany)

Background: The Institute for General Practice has developed a new concept for the preliminary medical course ‘Introduction to Clinical Medicine’.

Summary of work: Seven modules were developed to provide students with a standardized and well-grounded knowledge of the basic techniques involved in medical interviewing and history taking. In preparation, 30 lecturers were trained and received a ‘toolbox’, containing teaching and presentation materials for the course. The concept was implemented for 400 students (30 groups) in 2007. The course was evaluated on several levels. Students and lecturers evaluated the individual modules and the course as a whole with particular respect to practicability, subjective learning progress and overall satisfaction. In order to assess the effect of this new concept, two groups were examined for their progress in medical history taking.

Summary of results: Evaluation results showed that both students and lecturers assessed the course as extremely helpful in virtually all respects. They also made useful suggestions for improvement. Results will be presented at the congress.

Conclusions: The positive results support the development of the new concept and its adoption as a preliminary clinical communication course in the future.

Take-home messages: A well structured concept and standardized teaching materials are good supports for communication training within the regular study course.

2W/P3
Communication and interpersonal skills according to the period of training

Yang Hee Kim*, Hee Jeong Son, HyeRin Roh (Kangwon National University Hospital, 17-1 Hyoja 3 dong, Chuncheon-si 200-701, Republic of South Korea)

Background: We tried a 2 week communication training course in 2004, a 1 year course in 2005, and a 1 semester course in 2006 during curriculum development. The purpose of this study is to evaluate the status of communication skills of medical students according to the period of training.

Summary of work: We developed an 11 item-global rating list for assessing communication skills when students were examining the patient.

Summary of results: The reliability was 0.859 with 2 SPs and 1 station. We conducted the evaluation with 10 minute CPX about abdominal pain performed from 2002 to 2004 for assessing the 3rd year medical students at Kangwon National University after finishing 3rd year clerkship. A total of 164 videos were available. Two expert professors evaluated independently and analyzed the difference according to the training period.

Conclusions: The basic history taking skill and attitude of the students who trained longer was better. However, active listening, expressing empathy, easy explaining and nonverbal communication was no different. The long term course was effective for achieving communication skills.

Take-home messages: Long term communication skill training focusing on active listening, empathy, patient education and nonverbal communication is recommended.

2W/P4
Improving communication skills in pre-medical and nursing students by continuous one-to-one practice with nursery school children

Y Terasima* (The University of Tokushima Graduate School, Research Center for Education of Health Bioscience, Institute of Health Bioscience, Tokushima 770-8503, Japan)

Background: Communication skills (CS) is an essential clinical competency. Due to the extraordinary increase in the use of the Internet, mobile phones and email, Japanese youngsters have recently shown poor CS.

Summary of work: To improve basic CS, we introduced a new program ‘Human Communication’ in the 1st grade curricula of medical and nursing schools. In this program, students first received three 3-hour CS sessions on-campus. Afterwards, each student visited a nursery school for 3 hours once a week for 1 year to meet a selected child as a partner. Most students exhibited some problems communicating with partners, but overcame them with minimal interventions from faculty members. Students had then to write a weekly reflection and two letters: one to the partner’s parents and one to him/herself.

Conclusions: A survey of children’s parents and the students, together with a review of their weekly reflections, indicated levels of satisfaction of 80% and 100% respectively.

Take-home message: The one-to-one practice at nursery school contributes to improving communication skills in future medical professionals by fostering not only their communication but also their self-confidence and self-efficacy.

2W/P5
Linking knowledge with skills in health education training: Effects on nurses’ performance and patients’ satisfaction

Nadia AlJishi*, Raja Bandaranayake, Hassam Hamdy (Aramco, PO Box 9404, Dhahran 31311, Saudi Arabia)

Background: Linking contextual knowledge with skills in teaching communication skills was one of the dilemmas that have been raised in health professions education research for the communication skills to be transferred after training.

Summary of work: This study attempted to measure the effect of teaching nurses communication skills with a context related knowledge or context free knowledge on their performance in giving health education in different health problems and the effect of that on patient satisfaction. Nurses in 26 health care centers in Qateef, Saudi Arabia were divided into two groups (N=26). One group was given hypertension training by combining the context of hypertension as a disease and the clinical skill of providing health education. In contrast, the second group acted as a control group which had been trained on the same skills of providing health education. In 2002, the nurses were given hypertension training by combining the context of hypertension as a disease and the clinical skill of providing health education. In contrast, the second group acted as a control group which had been trained on the same skills of providing health education.

Conclusions: The nurses who received training show an improvement in performance after training when dealing with hypertensive patients and when dealing with asthma patients. Patients satisfaction also had improved after training the nurses. Linking knowledge with communication skills in education is of great importance for the performance of the health care providers to be improved and for the patients’ satisfaction to be increased.

Take-home message: Communication skills should be taught within the contextual knowledge.
2W/P6
Survey of communication skills among medical graduates: guide for teaching changes
Wiraj Wannaputra*, Non Sovanna, Thanin Chattapiban (Faculty of Medicine, Naresuan University, Department of Community, Family, and Occupational Medicine, Phitsanulok 65000, Thailand)

Background: Communication skills is indicated as a core competency in medical education worldwide, and also popular in Thai medical curriculum; in Naresuan University, it was introduced into year IV. Evaluation on how medical graduates practice their communication is valuable to support and develop the undergraduate training program.

Summary of work: During the Graduation Ceremony in 2006, 8 months after completing education, a survey was conducted to assess how well junior doctors practise communication with their patients during the internship program. Self-administered questionnaires were completed by all 76 medical graduates who finished the clinical years from two separate hospitals.

Summary of results: They strongly agreed with the importance of communication, but felt lacking in good preparation during the undergraduate years. They were good at exploring the reasons for patients’ consultation and symptoms, but poor for assessing patients’ satisfaction and appropriate interruption. Communication with physicians and with IPD patients was stated as “successful”, but not with foreign patients and difficult situations. Assertiveness in communication with medical personnel is different between genders and also some communication outcomes between teaching hospitals.

Conclusions: Teaching communication skills is still a challenging area in which to develop learning programs for our students.

Take-home messages: Graduates’ experience on communication reflects training needs for the undergraduate.

2W/P7
Associations between students’ performances in the medical communication program and physician-patient interaction scores on the clinical performance examination
Young Mee Lee*, Soohyun Jeon, Byung Soo Kim (Department of Medical Education, College of Medicine, Korea University, 126-1 Anam 5-ga, Seongbuk-gu, Seoul 136-705, Republic of South Korea)

Background: Since 2006, Korea University Medical College has implemented the Medical Communication Skills Program for 3rd-year medical students. Overall, students were satisfied with the program, but it is not yet known about the effects of the communication skills program on students’ clinical performance. Hence, this study examined the relationship between students’ medical communication performance and their CPX scores, particularly students’ physician-patient interaction (PPI) performance.

Summary of work: Participants were 130 4th-year students who took both the Medical Communication Skills Program in 1996 and the CPX in 1997. This study hypothesized that students with high performance in the program would show better performance in the CPX, especially in PPI.

Summary of results: As anticipated, students’ performance levels of the medical communication skills program made significant differences on their PPI, physical examination, and CPX total scores. These differences were statistically significant even after controlling for the influences of students’ GPA.

Conclusions: This study has significant practical implications for medical communication education by demonstrating a possibility that students’ knowledge and skills acquired from the communication skills program can be transferred to their clinical performance.

Take-home messages: The present findings suggest a need to develop a high quality medical communication program which may foster students’ effective communications with patients.

2W/P8
Improved communication skills performance among final year medical students using multisession communication skills teaching
Kanokwan Siriruksa* (Medical Education Center, Khon Kaen Hospital, Ministry of Public Health, Srijan Road, Tambol Naimuang, Amphur Muang, Khon Kaen 40000, Thailand)

Background: There is evidence that most medical litigation resulted from miscommunication rather than medical malpractice. Although communication skills have been introduced, learning outcomes have never been assessed.

Summary of work: The aim of this study is to evaluate outcomes of multisession communication skills teaching (CST) among the final year medical students. CST consisted of 3 sessions of teaching throughout the year. The first session was a one-day workshop after the first 3-month clerkship. The learning activities included a 45-minute lecture and role plays. Five core skills were emphasised: initiation, listening/questioning, rapport, giving information and closure. Three months later a 2-hour lecture on essential counseling skills was given. The third session focused on active listening and was integrated into humanized healthcare course over a 5-month period.

Summary of results: We found that 80% of the students were satisfied with the workshop and thought the skills could be applied to their practices. Most students did well in initiation but the other core skills needed to be enhanced. There was no significant correlation between role play scores and clerkship performances. Most students (85%) showed improvement on OSCE.

Conclusions: In conclusion multisession CST was useful and could enhance students’ performance in communication skills.

2W/P9
The relationship between self-reported personality and empathy and communication skills performance
Celia Brown*, Michelle Qume, Connie Wiskin, John Skelton, Roger Holder, Richard Lilford (The University of Birmingham, Public Health and Epidemiology, Edgbaston, Birmingham B15 2TT, United Kingdom)

Background: Personality and empathy have been identified as possible predictors of doctors’ communication skills, which are increasingly used as a criterion of a ‘good’ doctor. The aim of this study is to assess the relationship between the ‘Big 5’ personality traits and empathy and communication skills/attitudes assessments during an OSCE examination in a sample of third year medical students.

Summary of work: A cross-sectional study of 290 third year medical students was undertaken. Data were collected on: personality using the International Personality Item Pool; empathy using the Jefferson Scale of Physician Empathy; communication and attitudes/ professionalism scores on a focused history OSCE station; and personal characteristics (age and gender).

Conclusions: There is some evidence of a relationship between empathy and the personality factor of agreeableness. However none of the personality factors or empathy were related to performance in the OSCE.

Take-home messages: No evidence of the validity of the Jefferson Scale of Physician Empathy was found. Questionnaire-based personality tests do not identify students who may have problems with communication skills during their medical training.
Evaluation of a subinternship programme in an undergraduate medical curriculum

Denise O’Mara* (Royal College of Surgeons in Ireland, 123 St Stephen’s Green, Dublin 2, Ireland)

Background: The internship is a critical time for junior doctors, and has been described as a ‘rite of passage’ (Blackwell 1986). There is evidence that interns experience high levels of work related stress (Firth-Cozens 1987). In a review of programmes in the USA, completion of a SI is a pre-requisite for graduation in 75% of schools (Sidlow 2001).

Summary of work: In the final year of a 5-year programme 190 students completed a 2-week SI prior to graduation. Graduates and clinicians were surveyed to evaluate their preparedness for the working environment at 2 time points; on completion of the programme and at 12 weeks into the intern year.

Conclusions: To ease the transition from students to interns who are fit for purpose, a structured curriculum is required which supports the subintern, optimising experiential learning and facilitates competency in the skills needed for effective clinical practice.

What is important for a new doctor? Comparing final year medical students’ views with those of doctors at the end of F1, SpRs and consultants

David Matheson*, Catherine Matheson (Medical Education Unit, University of Nottingham, Queens Medical Centre, Nottingham NG7 2UH, United Kingdom)

Background: The introduction of the Foundation Programme has stimulated discussion in the UK of the preparedness for practice of newly qualified medical graduates.

Summary of work: This work surveyed final year medical students on a ‘preparation for House Officer’ course, doctors nearing the end of their First Foundation Year [F1], registrars and consultants across the North section of the East Midlands Healthcare Workforce Deanery in England. The survey was based on Tomorrow’s Doctors, the UK GMC’s statement on what a new medical graduate must know and be able to do on completion of their training.

Summary of results: This is work in progress but initial results indicate highly significant differences between the perceptions by the final year students of the importance of almost all the areas of Tomorrow’s Doctors and those of the doctors at the end of F1, the SpRs and consultants.

Conclusions: There appears to be a mismatch between the students’ expectations of being a new doctor and the lived reality according to the other three groups, except in respect of personal development and working environment where there was something approaching consensus.

Did the quality of work depend on GPAX?

Komol Praphasit* (Prapokklao Medical Education Center, Prapokklao Hospital, Leubnern Road, Muang District, Chanthaburi 22000, Thailand)

Background: One of the indicators reflecting competent graduates was cumulative grade point average (GPAX). But in a real situation in the rural hospital it might not be so. This study aims to define the correlation between GPAX and the quality of work after graduation.

Summary of work: Forty-one graduates were assessed on quality of work by the director of the hospital. The tools for assessment were questionnaires containing clinical skills, procedural skills, medical ethics, doctor-patient relationship, responsibility and team work. Each category was scored 1-4 points.

Summary of results: The mean GPAX was 3.27. Nine, twenty-seven and five graduates had good (>3.50), fair (3.00-3.49) and poor (<3.00) GPAX. The mean quality score was 3.17±0.35 (min.=2,max.=4). The good GPAX group had a high score in procedural skills, the fair GPAX group had a high score in medical ethics and team work. The poor GPAX group had a high score in clinical skill, doctor-patient relationship and responsibility.

Conclusions: The overall quality of work in our graduates was good and the quality of work did not depend on GPAX.

Take-home message: Keep in mind that the graduates had more competencies than we expected. The poor GPAX did not imply poor quality of work.

Running a development course for newly appointed specialists

Christopher Vassilas*, Peter Spurgeon, Hugh Flanagan (Birmingham & Solihull Mental Health Trust, Ashcroft Centre, The Moorings, Lodge Road, Hockley Village, Birmingham B18 5SD, United Kingdom)

Background: A programme is described which was developed to help newly appointed specialists cope better with the difficulties that this new role poses. The course was run in a large mental health trust which had been formed by the merger of two trusts 3 years previously. There had been concerns expressed that newly appointed specialists were floundering when it came to understanding their new role.

Summary of work: The course itself was based on the principles of Action in Learning which are described further. The course ran over a period of 10 months and 12 newly appointed specialists were invited to attend. Details of how this was implemented are described.

Conclusions: The course evaluation suggested that participants valued the course and that it had met many of the objectives initially laid out. Course attendance was good and the group decided to continue meeting on a less formal basis.

Take-home messages: It is possible to smooth the path from trainee to newly appointed specialist within a validated teaching and educational structure.

Clinical skill performance among medical postgraduates

Panjit Wannapira*, Wiroj Wannapira (Buddhachinaraj Hospital, 90 Srithummatripidok Rd. A.Muang, Phitsanulok 65000, Thailand)

Background: According to Thai Medical Council Competencies Criterion, medical graduates should be able to perform thirty basic and seventeen essential complex clinical procedures consecutively. Postgraduate experience and confidence were crucial for curriculum development, training needs and learning plan.
Summary of work: A self-administered mailed questionnaire survey was sent to 176 medical graduates from Naresuan University in 2004-2006 during January and March 2007. Descriptive statistic was used.

Summary of results: Ninety-eight questionnaires were returned (54.8%). Most of them (77.5%) worked in community and general hospitals. Of 30 basic and 17 essential complex clinical procedures, 86.8% and 52.9% were rated high and highest confidence respectively. Focused only in those who graduated in 2005 and 2006, experience which expressed by frequency of numbers of performance per month, high frequency/average frequency/low frequency (at least 50% of them performed>5 times/month, 1-5 times/month and never done respectively) were 4/17/5 and 0/11/4 in basic and essential complex clinical procedures respectively.

Conclusions: Although most of the medical graduates rated themselves as high confidence, some did not. Experience in practicing clinical procedures was not so high, even in basic procedures.

Take-home messages: This information provided important clues for curriculum development and adjusting the learning plan. Causes of lack of confidence should be further explored.

2W/P15
Problems of new graduates in medical practice
Wasant Dansawang*, Saang Dansawang (Buddhachinaraj Hospital School of Medicine, 90 Srithammatripidok Road, Ampur Maung, Phitsanulok 65000, Thailand)

Background: Curriculum development to achieve knowledge and performance for the new graduate doctors is very important. Problems and difficulties in their real medical practice should be minimized for the well-prepared graduates. This study aims to explore the problems encountered by new graduates from Narasuan-Bhuddachinaraj Medical School in year 2007.

Summary of work: A descriptive analysis from the questionnaires of all graduates after they had practiced in a general hospital for 9-10 months in fourteen categories of problems listed.

Summary of results: Fifty-five graduates responded to the questionnaires (100%). The top three categories of problems were patient management, self study and medical investigation respectively. When they faced problems, the best ways to solve them depending on the kind of problems. Most of them consulted senior doctors and the satisfaction rate was 80-85%.

Conclusions: The new graduates needed to be prepared with good critical thinking for management, investigation and self study skills for lifelong learning. The results from this study could provide useful feedback information to improve the curriculum and learning resources.

Take-home messages: Good feedback information can help us to develop better prepared graduates for their real medical practice.

2W/P16
Bridging the gap between undergraduate and postgraduate working life – the Southend experience
J Sharpe*, Mike Roberts (Southend University Hospital, Education Centre, Prittlewell Chase, Westcliff on Sea SS0 0RY, United Kingdom)

Background: There is concern over the preparedness of newly qualified doctors for their postgraduate role (Wall 2006). The UK GMC recommended undergraduate work based shadowing periods to address this problem. We previously piloted then implemented post graduation pre-employment shadowing periods to enhance the relevance of shadowing (Berridge 2007). In this paper we describe the shadowing programme developed at Southend Hospital following three years’ experience involving 100 newly graduated doctors.

Summary of work: There are three core programme elements. Mandatory GMC/NHS induction topics e.g. health and safety, a clinical skills programme, and a period of hands on shadowing. This involves graduates spending time with the outgoing trainee and working as a junior team member.

Summary of results: Feedback from trainees and senior healthcare staff is overwhelmingly positive. Benefits have included greater social cohesion within the group promoting better team working, improved patient safety and greater confidence amongst the new doctors. Problems include funding, accommodation and indemnity but these have been individually addressed.

Conclusions: The diverse origin of newly qualified doctors allocated to hospitals is a consequence of the new UK national recruitment programme. A national pre-employment shadowing scheme would provide an introductory period to unfamiliar surroundings and work practises to ease the transition to working life.

2W/P17
Medical meetings for the medical degree final year student
M Castelo-Branco*, J M Calheiros, M Afonso (Universidade da Beira Interior, Faculdade de Ciências da Saúde, Alameda Infante D. Henrique, Covilha 6200-001, Portugal)

Background: Credited medical meetings are thought to be good opportunities for medical doctors to improve their knowledge. All around the year there are in Portugal several medical meetings, symposiums and congresses, promoted by the scientific and the specialties associations, and by several hospitals. We believe that the medical meetings are good opportunities for learning for the last years, pre-clinical, medical student.

Summary of work: Trying to stimulate the students’ participation in those meetings, the Health Sciences Faculty of The University of Beira Interior (Faculdade de Ciências da Saúde) developed a method (SISCRED) of giving score points to the students that participate in pre-credited medical meetings. In Portugal the CME system doesn’t exist. Overcoming this difficulty the Faculty organized a system to evaluate the meetings in order to decide about the inclusion in the credited list. The students are informed of the credited meetings list with anticipation. We present the SISCRED system and data.

Take-home message: Credited Medical Meetings are good learning opportunities for medical undergraduate students.
2X/P1

Student perspectives of assessment by TEMM model in physiology
Reem Rachel Abraham*, Subramanya Upadhya, Sharmila Torke, K Ramnarayan (Melaka Manipal Medical College, (Manipal Campus), International Centre for Health Sciences, Manipal 576 104, India)

**Background:** Assessment is the process by which the teacher and the student gain knowledge about student progress. Assessment systems should aim at evaluating the desired learning outcomes.

**Summary of work:** At Melaka Manipal Medical College, (Manipal Campus), Manipal, India, the TEMM model (consisting of 4 assessment methods: Triple Jump Test, Essay incorporating critical thinking questions, Multi-station Integrated Practical Examination, and Multiple choice questions) was introduced to 30 refresher students in the fourth block of the academic year. At the end of the block, a questionnaire was distributed to ask the students to rank the different assessments in the order of their preference with respect to seven items.

**Conclusion:** Analysis of the results showed that not a single type of assessment was ranked highest for all the seven items.

**Take-home message:** The present study proved the earlier observation that a single assessment does not fulfill all aspects of assessment and that there is a need for an evaluating system with multiple ways of assessment.

2X/P2

Physician assistants: UK and international standards
J V Parle, N M Ross* (University of Birmingham Medical School, Edgbaston, Birmingham B152TT, United Kingdom)

**Background:** The Physician Assistant (PA) profession has been established in the US for decades. It has much to offer other health care systems. In the UK, grass roots pressure from clinicians and a search by the department of health for new ways of working have resulted in UK adoption.

**Summary of work:** This paper outlines the processes of local/national development and the setting of national standards for PAs in the Competence and Curriculum Framework. It discusses the variation in institutional reading which any set of written standards allow. The major focus is on the recognised necessity for a national assessment as the only means of ensuring common standards. It argues that national assessment need not create a de facto national curriculum and discusses the issue of the relationship between national and institutional assessment in individual PA programmes.

**Take-home message:** Standard setting is vital for service and public confidence in a new profession and can only be fully realised through national educational frameworks and national assessment. Although the PA profession is in its infancy outside the US, now is the time to co-operate internationally on standard setting. Previous experience in establishing international standards for established clinical professions has been mixed; it is essential to set standards early in the development of a new profession.

2X/P3

Comparison of two different approaches evaluating 3 years examinees’ attitudes towards key feature questions
J H Reißenweber*, S Schmidt, M Hofmann, M Brehmer, K Peters, A Roeder, M Rützler, K Büker (Medical Faculty of Witten/Herdecke University, Student Dean’s Office, Alfred-Herrhausen-Straße 50, Witten D-58448, Germany)

**Background:** At the medical faculty of Witten/Herdecke university in winter term 2007/2008 combined key feature examinations came into operation for 3rd year students in the disciplines dermatology, ophthalmology, otolaryngology and urology for the first time.

**Summary of work:** 21 days after the examination consisting of short menu question formats an online questionnaire (seven questions) was sent to the examinees which was evaluated in comparison to the written subjective comments given by examinees immediately after the test. Significant differences between more unstructured immediate written evaluations and more concise online evaluations can be demonstrated. For example some of the students even stated online that they would have desired to answer more questions within this examination.

**Conclusions:** 1. In average online evaluations provided more positive results than immediate evaluations possibly due to the examinees’ novel experience; 2. Key feature questions even in the examinees’ opinion seem to be a promising approach and could be a complement for Modified Essay Questions (MEQ); 3. The combination of key feature formats with notebooks seems to optimize this format.

**Take-home message:** Online evaluations of novel types of examinations by examinees after a certain time period seem to be more appropriate to obtain a precise feedback than immediate evaluations.

2X/P4

Integral evaluation of the student: the usage of “Multiple Education Evaluation Process”
M Barrios, G Trigo, P Echegoyen, D Bonino, J Matz (Universidad Maimonides, Buenos Aires, Argentina)

**Background:** Written evaluations such as multiple choice, true or false, etc, have demonstrated to be valid, reliable, acceptable and with a high impact in education but these methods do not evaluate clinical reasoning or the abilities to develop certain skills.

**Summary of work:** To remedy this, the Script (the script concordance test) is a tool designed to evaluate clinical reasoning and it places examinees in authentic clinical situations where they have to interpret data in order to make decisions, while the OSCE (objective structured clinical exam) evaluates clinical proficiency. At Maimónides University we use these three evaluation instruments separately, but we have never applied these evaluation methods in a combined form. The aim was to design a global evaluation technique (“Multiple Education Evaluation Process”) based on the experience in using different evaluation tools with second and third year students of Medicine at the Maimónides University.

**Summary of results:** To evaluate second year Neumonology we used a written exam and also the OSCE. Of 38 students, 74% passed the written exam and 58% passed the OSCE. 16% passed the written exam but not the OSCE and all the students who passed the CE also passed the written exam.
To evaluate third year Nephrology we used the written exam and the Script. Of 28 students, 64% passed the written exam and 75% passed the Script. 18% passed the written exam but did not pass the Script, and 29% passed the Script but did not pass the written exam.

Conclusion: As we had already supposed, there was no relationship between the different types of exams. We think that by using the “Multiple Education Evaluation Process” we will have a better possibility to evaluate in detail the knowledge, abilities and reasoning skills of our students.

2X/P5
Reliability of computer based testing compared to paper-based testing
N R Bos*, M van der Weerd (AMC/UvA, Meibergdreef 15, Amsterdam 1105 AZ, Netherlands)

Background: The ‘Klinische Lijn (KL)’ exam is the final exam students have to pass before they can start their internship. Organising the KL exam is a complex logistical process, since all students have to take the test and almost all medical specialties are involved. To simplify this process a pilot was started to digitalize the KL test. However, before doing so, further research is needed on the effect of a computer-based test (CBT) compared to the original paper test.

Summary of work: The pilot started with a small group of students who had to take the KL test. The students were divided into two groups. To the first group the first half of the test was presented on the computer and the second half on paper. To the second group it was presented the other way around. The layout of the CBT and paper-version were the same, no additional media were used. We compared the results of the two groups and the two different ways of testing.

Summary of results: No significant differences were found between testing on paper or computer based testing. During our presentation we give further insight in the results.

Take-home messages: Can you just change a test from paper to digital? Or are there hidden factors to be considered?

2X/P6
The assessment of knowledge competence by patient report (writing essay)
Paworamon Sribussara* (Buddhachinaraj Hospital, School of Medicine, 90 Sritamtripidok Road, Muang, Phitsanulok 65000, Thailand)

Background: Patient reports (writing essay) are a part of assessment for medical students. It is believed that the quality of reports is correlated with knowledge and problem-solving/reasoning ability. Summary of work: We analyzed scores of 3th year students in internal medicine rotation, and compared scores between patient reports (6 reports, rubric score) and MCQ (150 questions). t-score was used in each assessment method and grading into A to D+ (4 to 1.5point sequentially).

Summary of results: There were 60 students in this study (6 rotations, 10 students/rotation). Difference of reports and MCQ grading points in each student ranged from +2 to -1.5 points. 36 students had difference of ± 0.5 points, 23 had ±1 to ± 1.5 points and 1 had ± 2 points. Reports points were less than MCQ points in 25 students, more in 21 students and no difference in 14 students.

Conclusion/Take-home message: Patient report score from 6 reports cannot evaluate the knowledge of students precisely. It should be a small part or minor role in grading and not used as pass/fail decision in knowledge competence.

2X/P7
Developing quality questions for the final year MBBS certifying written examination at Aga Khan University (AKU)
Shazia Sadaf*, Sadaf Khan, Syeda Kauser Ali, Hasnain Zafar, Amanullah Memon, Rukhsana W Zuberi (Aga Khan University, Stadium Road, Karachi 74800, Pakistan)

Purpose: This study reports the experience of developing quality questions for the Final Year MBBS Certifying Written Examination at Aga Khan University (AKU).

Background: The certifying exam (CE) contributes 50% towards the final grade while 50% comes from the end of clerkship (EoC) examination. A concern amongst faculty was the recent trend of negative correlation between the two scores.

Summary of work: To find out reasons for this trend, Surgery exam papers from 2002 to 2006 were reviewed to analyze the overall quality of the question paper. This review identified the need to develop a large pool of good valid and reliable new questions to enable thorough assessment of essential objectives. A one day retreat to enable faculty members to develop and critique quality questions through multidisciplinary reviews was organized adapting the Universities Medical Assessment Partnerships initiative for quality assurance of items.

Summary of results: Concerted effort from 55 faculty members, including question developers, resulted in a total of 110 new reviewed questions according to the “Standard MCQ review Checklist”. These questions were accepted for the Question Bank by completing the “MCQ Hierarchy Face Sheet” making banking and retrieval of questions easy and user-friendly.

Take-home message: Multidisciplinary reviews facilitate the process of developing a valid and reliable question bank and prove to be a unique learning experience for faculty in developing good question writing skills.

2X/P8
Do the exams that the committees considered have higher quality?
K Sawasdichai* (Prapokklao Medical Education Center, Prapokklao Hospital Leabneon Road, Muang Province, Chanthaburi 22000, Thailand)

Background: The examination committees of Prapokklao medical education center have considered the MCQ exams before assessing students since 2006. The aim of this study was to compare difficulty index (p) and discrimination index (r) of the exams between those that have been considered and those that have not been considered by the examination committees.

Summary of work: The 550 MCQ exams of medicine (250) and Ob-Gyn (300) between 2005-2007 were reviewed. The p and r of the exams between group that passed and group that did not pass the committees were compared by Chi-square test and p<0.05 considered significant.

Summary of results: There were 300 exams (54.5%) that the examination committees considered. The acceptable difficulty index value (0.8<p<0.2) were more in the passed committee exams (64.3 vs 58.1%,p=0.007). The appropriate r value (>0.25) between groups were not different (32.3 vs 39.2%,p=.094). The appropriate p & r value exams were not different (21.1 vs 24.4%,p=0.342)
Conclusions: The examination committee consideration can improve p value of the exams but not r value.
Take-home message: All exams should be considered before testing and the examination committee competencies should be continuous quality improvement.

2X/P9
Impact of item-writing flaws in multiple-choice questions on student achievement in high-stakes assessments
Marie Tarrant*, James Ware (University of Hong Kong, 4/F, William M. W. Mong Block, Li Ka Shing Faculty of Medicine, 21 Sassoon Road, Pokfulam, Hong Kong)

Background: Multiple-choice questions (MCQs) are a common assessment method in health-science disciplines. This study reports the impact of item-writing flaws (IWFs) in MCQs on student achievement in high-stakes assessments.

Summary of work: MCQ items on 10 summative test papers administered to undergraduate nursing students were reviewed for 15 commonly occurring IWFs. For each paper, two scales were computed: a total scale representing the test as delivered and a standard scale reflecting a theoretical test with only unflawed items. The pass-fail results and students with >80% outcomes were recorded.

Summary of results: The proportion of flawed items on the 10 test papers ranged from 28%–75%; 47.3% of all items were flawed. Fewer examinees passed the standard scale than the total scale (748 vs. 779; 90.6% vs. 94.3%). Conversely, the proportion of examinees obtaining a score of ≥80% was higher on the standard scale than the total scale (173 vs. 120; 20.9% vs. 14.5%).

Conclusions: Flawed MCQ items were common in high-stakes nursing assessments. In contrast to previous research however, flawed items benefitted the test scores of borderline students and test scores of high-achieving students were adversely affected.

Take-home message: Greater effort must be placed on improving the quality of MCQs in assessments. It is important that teachers are provided with adequate training in writing high-quality test items and that all tests and examinations are subjected to adequate review both prior to and after administration.

2X/P10
Judging essays: assessment reliability and validity
Lorna Olckers*, Suellen Shay (University of Cape Town, School of Public Health and Family Medicine, Health Sciences Faculty, Anzio Road, Observatory, Cape Town 7925, South Africa)

Background: This poster presentation addresses the problem of reliability in marking first year Health Science student essays. It is an exploration of assessment with particular focus on what influences markers, and the validity or soundness of the marking process.

Summary of work: The study methodology includes interviews, focus groups and the observation of moderation events. The results are framed within an interpretive theoretical perspective, drawing on the work of Hans-Georg Gadamer and Etienne Wenger, to explain how different factors influence markers.

Summary of results: The results are illustrated as concentric circles of influence, including:
- Textual factors - the written product itself and the writer;
- Contextual factors - the individual marker, the marking team or community of practice, and the educational ethos.

Conclusions: Evidence from the study suggests that there is no easy technical solution to strengthening validity. Validity is best reflected as a process with a commitment to marker self-awareness as well as opportunities for dialogue and debate between markers.

Take-home messages: Many factors influence markers as they go about assessing their students' work, and it is important to be aware of and open about these influences if we are serious about the reliability and validity of the assessment process.

2X/P11
From the eMEQ to the MCECS (Multiple-Choice Evolving Case Scenario): description of its evolution and of student preferences
Erle C H Lim*, Raymond C S Seet, Vernon M S Oh, Marion Aw, Boon-Lock Chia, Daniel Y T Goh, Seng-Hock Quak, Jimmy B W Teo, Benjamin K C Ong, Lawrence K Y Ho (Yong Loo Lin School of Medicine, National University of Singapore, Department of Medicine, c/o Division of Neurology, National University Hospital, 5 Lower Kent Ridge Road, Singapore 119074, Singapore)

Background: Our university introduced an online-MEQ examination (eMEQ) in 2001, after which it has evolved into the MCECS, an online examination featuring 12 MCQs covering the main specialties.

Summary of work: We surveyed final-year students about their attitudes to eMEQ and MCECS after an online-trial of both.

Summary of results: 80 (43 male, 37 female) out of 91 students completed the survey (response 87.9%). 72 (90%) enjoyed the evolving case-based-format of the MEQ, 32 (40%) were confident that they could excel in any MEQ-based examination. 46 (57.4%) wanted more computer-based testing (CBT). 58 (72.5%) preferred MCECS to eMEQ, 16 (20%) felt that it was more difficult to answer MCQs than short-answer questions (SAQ), but 68 (85%) felt that SAQs were more ambiguous than MCQs. 46 (57.5%) revealed that MCQs allowed for guesswork when they lacked knowledge. 48 (60%) had difficulty expressing themselves in essay and short-answer questions. 70 (87.5%) preferred the limited-choices of MCQs over open-ended questions. 66 (82.4%) felt the MEQ to be a reliable format for testing their medical knowledge. 60 (65%) of students felt that the time saved by switching from eMEQ to MCECS was better used in covering a wider range of topics.

Conclusion: Our students favoured MCECS over eMEQ. CBT is feasible in a high-stakes examination. MCECS allows us to set questions on a wider range of topics.

2X/P12
How do students profit from assessment without marks? Development of a questionnaire
Hanna Sophia Kastner, Julia Klawohn, Katrin Brauns (Charité Universitätsmedizin Berlin, Assessment Bereich, Charitéplatz 1, Berlin 10117, Germany)

Background: The Progress Test Medicine (PTM) is an unusal assessment tool. Students must attend the test but can't fail. No-one apart from the student himself will receive his/her personal results, implying that there is no extrinsic motivation to do well. Our aim was to find a way of examining why and how students are motivated to complete tests that aren't subject to failing or passing.
2X/P13
Importance of the judge in determining the pass point with the Ebel method

G Khayat, E Nemer, S Rassi, F Haddad, M Nasr*, A Yazigi (Saint-Joseph Medical School, Ashrafieh, Beirut 165207, Lebanon)

**Background:** The field of assessment relies on three cutoff score methods (Angoff, Ebel, Nedelsky) to determine the pass point on multiple choice examinations. Selecting the judges is a vital step; more important than their number are their characteristics. Specifically, a mix of professionals is advantageous. Since 2000, our medical school has been using the Ebel method to determine the pass point in MCQ exams, with a multi-specialty jury. This presentation aims to evaluate whether the judge specialty impacts the cutoff score.

**Summary of work:** Before each exam, the pass point is set by a jury composed of three types of judges: physicians of the concerned specialty (PCS), family medicine physicians (FMP), and physicians of non-related specialty (PNS). The correlation coefficient between the three groups was determined for two consecutive years.

**Results/Conclusions:**

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**Take-home messages:** The constant negative correlation between specialist (PCS) and family physicians implies that both should be present in the jury, whereas the impact of physicians of non-related specialty (PNS) is heterogeneous from test to test and from year to year, making their contribution to the score setting debatable.

2X/P14
Integrated judgement method for standard setting for certification examination

Scott Arbet* (NCCPA, 12000 Findley Road, #200, Duluth, GA 30097, United States)

**Background:** Standard setting bodies would like to have as much useful information as possible about the ‘candidate’ who is at or near a pass/fail point when setting a passing standard. Our study will have standard setting judges’ rating the actual content of test items along with the empirical examinee performance to help validate those ratings in terms of what examinees CAN DO. This paper compares the generalist approach to standard setting to a specialist approach, using a slight modification on a method known as the integrated judgment procedure (Jaeger and Mills, 2001). The integrated judgment procedure (IJP) requires a panel of standard-setting judges to evaluate actual responses completed by examinees on small clusters of items. The judges evaluate the clusters and holistically rate the performance as in several ordered categories such as: 1 = “well below qualified”; 2 = “approaching qualified”; 3 = “just above qualified”; and 4 = “clearly above qualified”. These performance-based ratings are then statistically matched - individually or in aggregate - to the empirical score scale to obtain the cut score.

**Summary of work:** In late Spring 2008, approximately 15 standard setting judges will participate in the data collection portion of the study. A separate group of approximately 30 policy makers will be randomly assigned to review the two outcomes. Quantitative and qualitative results will be shared.

**Conclusions:** It is anticipated that the “richer” method of qualifying and quantifying what candidates CAN DO via the integrated judgment procedures gives more confidence in setting standards. This method can also be applied to any combination of selected- or in aggregate - to the empirical score scale to obtain the cut score.

**Summ**ary of preliminary results:

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**Take-home message:** The teachers need a forum for pedagogical discussions and sharing ideas for developing new forms of assessments and teaching to support the students’ learning. The pattern of contradictions could serve as a tool in these discussions.

2X/P15
Contradictions in assessments – the teacher’s dilemma

Lena Boman*, Ingela Thorsson, Håkan Hult (LIME, Berzelius väg 3, Karolinska Institutet, Stockholm 171 77, Sweden)

**Background:** In the adjustment of higher education to the Bologna Process learning outcomes, teaching and assessments have been in focus in Sweden. The aim of this study was to explore teachers’ perceptions of assessments in a registered nurse programme at Karolinska Institutet.

**Summary of work:** Interviews were performed with ten teachers individually and in three focus groups, September 2007-January 2008. The interviews were semi structured and concerned the teachers’ perceptions of assessments in relation to teaching and learning. A content analysis of the data was performed and themes, similarities and differences in the interviews were identified and categorised.

**Summary of preliminary results:** The teachers’ perceptions could be illustrated as a pattern of contradictions of the function and form of assessments; summative and formative, a conflict between relevance and fairness, aiming for both learning and control and production or reproduction of knowledge.

**Take-home message:** The teachers need a forum for pedagogical discussions and sharing ideas for developing new forms of assessments and teaching to support the students’ learning. The pattern of contradictions could serve as a tool in these discussions.

2X/P16
The role of feedback in assessing written work: value for the receiver or release for the giver?

Janet MacDonald*, Lesley Pugsley* (School of Postgraduate Medical and Dental Education, Cardiff University, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

Feedback in medical education settings has, over time, been largely ignored and sometimes poorly executed. The educational benefits for learners, however, when feedback is provided in a constructive and supportive environment greatly enhances the quality of medical and medical education written work and identifies the purpose and priorities in educational feedback.

**Summary of work:** A pre-study was conducted to clarify some basic issues and to develop the final version of the questionnaire.

**Summary of results:** The first draft with many open questions was reduced to a final version with fewer and mainly closed questions.

**Conclusions:** We have developed a questionnaire that examines students’ attitudes towards the PTM as well as factors contributing to their motivation to use it as an evaluation instrument.

**Take-home messages:** For successful administration of formative, non-marked tests it is essential to understand students’ motivation concerning such tests. The developed questionnaire will be used in an online study in spring 2008 regarding this issue.
The impact of feedback on students is also considered, along with the multi-faceted components of learner understanding. Examples of structured guidelines are analysed in relation to feedback given to students.

2X/P17
Formative assessment tool for clerks in a large non-academic teaching hospital
Marsha Roos-Tiessen*, Marina Eckenhausen, Bart Bijnen (Forest Institute, Medical Centre Alkmaar, P.O. Box 501, Alkmaar 1800 AM, Netherlands)
Background: Portfolios are considered to improve development of competences, as they enable users to optimise their learning skills in practice. Clerks in our teaching hospital perceived insufficient opportunities to develop their competences as measured by Postgraduate Hospital Educational Environment Measure (PHEEM). Miniportfolio was therefore developed as a formative assessment tool. The CanMEDS-competences functional framework.
Summary of work: In this study the introduction process, usability and user satisfaction of the Miniportfolio was evaluated. In 2007 it was introduced to 30 consecutive clerks at the surgical department. Data were collected and analysed by means of a page-analysis, a questionnaire, the PHEEM, and results of the concluding exams.
Summary of results: Clerks considered the Miniportfolio as a satisfactory and functional tool for their professional development. Supervisors reported it to be a helpful instrument for their balanced final judgment. Minor positive changes were found in the grades for concluding exams and in the PHEEM.
Conclusions: Miniportfolio was readily accepted, proved to be a useful additional tool, and users reported a high degree of satisfaction. It is currently introduced, with minor adjustments, for other clerkships.
Take-home message: Miniportfolio is an easy and helpful tool for formative feedback during clerkships.

2X/P18
Students' perception towards portfolio in the clinical phase at the Faculty of Medicine, Chulalongkorn University
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Background: After piloting portfolio in the clinical phase of the undergraduate medical curriculum in 2005, the Faculty of Medicine, Chulalongkorn University decided to implement portfolio in all four clinical training centres in 2006. The content in the clinical phase portfolio is: case report and discussion, record of clinical experiences, professional experiences, extracurricular activities and student-selected components report. Most of the portfolio content is pre-marked by preceptors in the rotations.
Summary of work: As a part of Year 5 curriculum evaluation, questionnaires were distributed to all students (N = 183) with 12 items asking about the portfolio.
Summary of results: Only 19% of the respondents found portfolio beneficial. 71% felt that portfolio was unnecessary workload. However, 79% stated that they had to do more information search and self-study in order to complete case report in portfolio. Moreover, 59% claimed that they spent more time talking to patients as a result of portfolio.
Conclusions: Though most students were unsatisfied, the use of portfolio has caused a positive effect on their learning behaviours.

2X/P19
Student opinions of what makes a reflective portfolio work within Liverpool's medical curricula
R Fewtrell*, H M O'Sullivan (The University of Liverpool, Centre for Excellence in Developing Professionalism, School of Medical Education, Cedar House, Ashton Street, Liverpool L69 3GE, United Kingdom)
Background: Reflective portfolios have become common place within both undergraduate and postgraduate medical education. Reflective portfolios have been introduced throughout Liverpool's medical curricula. The design of this study is to explore student opinions and experience of reflective portfolios with an aim to improve these within the curricula.
Summary of work: Semi-structured focus groups have been carried out with all years currently using reflective portfolios within the curricula. These focus groups have been used to gauge the students' opinions of the reflective portfolio currently in use, portfolios in general and reflective practice.
Summary of results: The analysis of these focus groups is on-going; initial findings suggest that students in different stages of the course have different requirements from the reflective portfolio that they are currently using; the majority find that reflective practice is a rewarding method of enhancing their experiential learning. All of the focus groups found both positive and negative aspects of the reflective portfolio that they are currently using.
Conclusions: Students view reflective practice as a rewarding and useful addition to their learning and they can see both positive and negative aspects of portfolios. Recommendations will be made regarding the structuring and implementation of reflective portfolios.

2X/P20
Objective structured portfolio assessment for Personal and Professional Development (PPD) Course at Ankara University School of Medicine
Fulya Dokmeci, Meral Demiroren, Mehmet Ozen*, Ipek Gonullu, Aysen M A Kosan, M Fevzi Atacanli, Harun Balcooglu (Ankara University School of Medicine, Medical Education and Informatics Department, Cebeci, Ankara 06620, Turkey)
Background: Portfolio is defined as "a purposeful collection of student work that exhibits the student's efforts, progress and achievements in one or more areas" by Paulson et al (1991). At Ankara University School of Medicine, a comprehensive, structured portfolio was implemented in personal development and professionalism course.
Summary of work: Sessions of the course have been performed as workshops in small groups and after each workshop, students wrote their learning experiences as a critical reflection. Each group was facilitated by a co-trainer. They read the requirements and wrote their feedback. The students' progress and improvement was followed by their mid-term portfolio evaluation. They were given the chance of improving their reflection writings by the other trainers' feedback also. The final portfolio assessment had been standardized by using rubric which ensured consistency between the assessors also.
Conclusions: At the end of the semester the students’ success was 98%. Only one student has failed in the course and completed in make-up examination.

Take-home message: Although portfolio assessment is a challenging process, to use this method in courses like “PPD” makes the evaluation very effective and objective. The outputs gained by portfolio are also so valuable, that makes it worthy of consideration.

2Y/ P1

Experiences and attitudes towards teaching and performing digital rectal examination in final year students and first year doctors in Birmingham, UK

Satwinder Palia*, David Wall, Ellen Jones (Birmingham Heartlands Hospital, Undergraduate Dept, Education Centre, Heart of England NHS Foundation Trust, Bordesley Green, Birmingham B9 5SS, United Kingdom)

Background: Approximately 33% of rectal tumours are palpable by Digital Rectal Examination and “abnormal DRE has a positive predictive value for prostate cancer of up to 30%”. It is suggested that 25-75% of patients do not have DRE prior to admission or as an in-patient. There are a number of issues which may explain inadequate performance of DRE, eg: inadequate medical student education, inadequate numbers performed, embarrassment, lack of chaperone, female gender, and lack of confidence. The most appropriate method of teaching may be by using a rectal teaching associate. Alternatively, teaching DRE may be more appropriate using models or consented patients. Teaching of intimate examinations has been carried out on anesthetised patients, but around 24% of examinations were carried out without any written or oral consent. We need to understand why DRE is not being performed enough, what are the educational and deterrent factors and how they may be addressed in undergraduate education.

Summary of work: Questionnaires were devised, piloted then handed out to final year students and foundation year one doctors in Birmingham; 141 were returned.

Summary of results: The data have been collected and are being analysed using SPSS.

Conclusions: We hope to make recommendations for future undergraduate education in Birmingham.

2Y/ P2

Young adolescents as simulated patients: what is the benefit?

Pierre-André Michaud*, Carine Layat, Raphael Bonvin, Isabelle Jaeger (CHUV - Centre Hospitalier Universitaire Vaudois, Unité multidisciplinaire de santé des adolescents, Lausanne 1011, Switzerland)

Objective: To involve young adolescents (< 15 year old) as SP in teaching sessions for medical/nurse students and to explore the specificities of their recruitment/training.

Summary of work: The recruitment and training process involved principals of two schools, parents and adolescents. The program was approved by the IRB of the Medical Faculty.

Summary of results: In 2005, among 30 potential candidates, eight adolescents were selected on the basis of their school results, motivation, physical/mental health and improvisation skills. After a training period of ~10 hours, they were involved in sessions focusing on how to improve communication skills with adolescents (3rd & 4th year medical students). All sessions are supervised by senior staff experienced in adolescent health. SP do not only role-play but they give effective feedback to students/doctors/nurses (feelings, communication style, content). A short debriefing discussion with the senior staff is offered to each SP after each session, which allows them to express their feelings, potential burden and also to reflect on how to improve their performance.

Conclusion: It is possible to train young SP to effectively role-play and give feedback in an autonomous way.

2Y/ P3

Volunteer Standardized Patients (SP) evaluators: our experience

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Background: In 2001, the first SP Program at a Spanish University began. It was started with very scarce resources and many concerns on the part of the director’s team, teachers and students.

Summary of work: To describe the strengths and weaknesses of using volunteers as SP in OSCE evaluations. 78 people were recruited as SP. Most of them come from non-profit making organizations. Correct answers are recorded on checklists by the physicians and the standardized patient has to record and assess the communication and interpersonal skills checklist at the same time.

Summary of results: We have analysed 1168 communication and interpersonal skills student checklists evaluated by SP. The majority of the students (95-98%) greet and interview the patients in the correct way, but only 48% of the students try to explain to them their medical problem, or deal with any of their concerns, which are the next steps in the diagnostic process.

Conclusion: The volunteers as SP were a reliable and valid instrument for the OSCEs. We understood that volunteer as SP couldn’t be a permanent solution but in our case they were a basic component to begin the implementation of the new SPP and OSCE in a University which had not yet begun to use this methodology.

2Y/ P4

The actual situation of educational projects involved with simulated patients in schools of Occupational Therapy in Japan

Kaoru Inoue*, Nobuo Oshima, Chihiro Sasaki, Atsuko Tanimura, Yuku Ito, Hiroyuki Fujii, Masanobu Kinoshita, Masahiro Shigeta (Tokyo Metropolitan University, 7-2-10 Higashiogu Arakawa-ku, Tokyo 1168551, Japan)

Background: In Japan, programs involving collaboration with simulated patients (SP) draws Occupational Therapy (OT) teaching staff’s attention. The objective of this research is to study and analyze data of educational projects at schools of OT in Japan, particularly projects that have collaboration with SP.

Summary of work: A comprehensive literature review was carried out. We studied and analyzed different data regarding the authors’ background, and educational projects involving collaboration with simulated patients.
2Y/P5

How reliable are standardized patients for assessing procedural skills?

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Background: The purpose of this study is to investigate whether standardized patients (SP) can be used as a reliable examiner in procedural skill assessment.

Summary of work: Six SPs were selected on the basis of having at least 2 years of previous experience of SP. They had been trained for assessing procedural skills which consist of Foley catheterization and wound dressing for 4 hours. They were involved in evaluating 2 stations - 5 minute - OSCE of 55 second year medical students. For each assignment 2 faculty members and 2 standardized patients were designated as raters. The reliability of the faculty member and the standardized patients were compared and analysed by SPSS 14.0K.

Summary of results/Conclusion: There was no statistical difference between the score of faculty and SPs for procedural skill of 2nd year medical students.

Take-home messages: It is safe to conclude that standardized patients can be used as a reliable examiner in procedural skill education, if the standardized patients are given the appropriate training and education.

2Y/P6

Evaluation of simulated patient training program - a perspective from the participants

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Background: A simulated patient (SP) has been increasingly used in health care education in Japan. However, a systematic training program for SPs is rarely available. We have been delivering SP training courses since 2003. We described the content of the program in 2007 and reported the results of the questionnaire administered to the participants.

Summary of work: The training program consists of seven 2.5-hour sessions, and it is delivered separately. There were 28 participants and half of them attended all the sessions. They were asked to answer the questionnaire after each session.

Summary of results: All the participants answered the question “How do you rate this session” as “somewhat good” and “good” in a 4 point scale. What the participants thought was good about this program was realizing the importance as well as necessity of interpersonal communication for SP, learning to play a real role as a SP and so on. This program also made some participants anxious about whether they can be a real SP because they regarded playing a role and giving feedback too difficult for them.

Conclusion: This training program made participants understand a SP’s role. It also suggested that this program is a basic step to becoming a SP.

2Y/P7

Standardized patients for rectal exam

Matthias Siebeck*, Frank Fischer, Claudia Frey, Bärbel Schwald (Ludwig Maximilians University Munich, Department of Surgery - Innenstadt, Klinikum der Universitaet Muenchen, Nussbaumstrasse 20, Munich 80336, Germany)

Background: Our undergraduate medical curriculum had a deficiency in teaching the rectal exam. Research questions: Is there a reduction of inhibition and fear in the self-evaluation of students who have participated in a teaching unit with the standardised patient for rectal exam who gives feedback (SP), compared to students who have participated in a teaching unit with the rectal simulation model (RM)? Is there a sequential effect of these two simulations?

Summary of work: We investigated fear and inhibition in participants. We compared 2 groups in a randomised trial, group A (n = 19) had first SP and later RM, group B (n = 22) first RM and later SP.

Conclusions: Teaching the rectal exam with SP led to a significant reduction of fear and inhibition in the participants whereas the RM had no effect. RM was perceived as less problematic for the participants than SP. The sequence RM-SP was more effective than the sequence SP-RM for the reduction of fear and inhibition.

Take-home messages: Standardised patients for rectal exam who give feedback are a very helpful instrument for teaching complex skills in the taboo zone. When SP is combined with RM, the sequence of the simulations matters.

2Y/P8

Perceived and assessed value of a cardiovascular pharmacology patient simulation experience toward learning

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Background: The availability of human patient simulation models (HPS) has allowed medical school faculty to expand the repertoire of approaches to teaching beyond simply the lecture format.

Summary of work: In the current IRB-approved study, self-perceived and assessed learning of health science (medical, pediatric and physician assistant) students from two successive matriculating classes (Group I and Group II) were compared. Group I students (n=289) were provided a one-hour class room lecture entitled “Cardiovascular Pharmacology – Vasodilators”; their learning was assessed one week later with three examination questions. Group II students (n=311) were also provided a one-hour HPS intervention modeling the clinical application of vasodilator drugs. Both before and after the HPS intervention, Group II students participated in a three question and an 8-point radar diagram instrument to self-assess their understanding of the basic concepts/learning objectives. The radar diagram instrument contained attributes such as “I understand the importance of baroreceptor reflex in response to vasodilators” and were rated using a Likert scale.

Summary of results: Analysis of both groups, based upon examination question performance and self-assessment, suggests significant (p<0.05) enhancement of learning (understanding) as a result of the HPS intervention.
2Y/P9
Using simulation in the Clinical Skills Centre to achieve competency in the practical procedures in a Critical Care Nursing Programme
Elize Archer* (University of Stellenbosch, Faculty of Health Sciences, Tygerberg Campus, Parow, Cape Town 7530, South Africa)

Background: The Critical Care Nursing Programme at the Faculty of Health Sciences (Stellenbosch University, South Africa) is a one-year programme. The practical component consists of practical procedures and case presentations. Students have limited time available in the clinical areas to reach competency.

Summary of work: A case study design was used. By completing the majority of the practical procedures in simulation more time would be available in the clinical area for the students to do case presentations. Most of the practical procedures required of the students were taught in simulation. The study focuses on describing how the tutors and students involved had experienced the use of simulation as well as how it impacted on the available teaching time in the clinical settings.

Summary of results: The study is still in progress, but preliminary results show that students enjoyed the time spent learning in simulation. The students’ clinical logbooks indicated that more time was utilized for case presentations than the previous group.

Conclusions: The use of simulation will be used to an even bigger extent in this programme in future. There are areas that one can improve for example having more time available for students to practice in simulation under the supervision of a clinical tutor.

Take-home message: Students valued the use of simulation to teach the practical procedures as part of a Critical Care Nursing Programme.

2Y/P10
The educational purpose of a clinical skills center: filling the learning gaps
A P Salgueira, J Cerqueira, N Sousa, M J Costa (University of Minho, School of Health Sciences, Campus da Gualtar, Braga 4710-057, Portugal)

Background: Clinical Skills Centers (CSC) are used for high quality training and reliable assessment of clinical skills. Systematic analysis of empirical data on the CSC’s effectiveness is needed to adjust CSC programmes.

Summary of work: A CSC was developed as a supplementary resource to provide voluntary training sessions of different specialties, to students of a 6 year undergraduate medical program. Systematic collection of data started at the first encounter, with a pre and post questionnaire. The questionnaires are self-reports on previous knowledge and practice of gestures and on the degree of confidence in their present performance.

Summary of results: By the end of the academic year, we expect over 300 encounters. Current data (n=184) from participants spanning 5 curricular years reveal: a) most participants apply because of insufficient confidence in performance; b) the overwhelming majority of students doing clerkships (4th-6th year) state that they know of the gestures to be practiced; c) pre-session confidence in performance of the gestures is rated marginally (3-4 points on a scale of 1-7); d) statistically significant increases in performance confidence are observed after the training.

Conclusions: Clerkships leave confidence gaps in the training of medical skills.

Take-home messages: CSCs are potentially useful in filling confidence gaps in student clinical performance.

2Y/P11
Students’ views and teachers’ opinions on effective teaching skills for undergraduate skills training
R J Duivivier*, M J C Martens, J van Dalen, A J J A Scherbicer, C P M van der Vleuten (Skillslab, Faculty of Health Medicine and Life Sciences, Maastricht University, PO Box 616, Maastricht 6200 MD, Netherlands)

Background: Evidence for effective teaching skills in undergraduate clinical skills centres (Skillslabs) is lacking. What teaching skills are effective in supporting the acquisition of physical examination skills in undergraduate medical education?

Summary of work: The study was carried out at the Skillslab of the Faculty of Health, Medicine and Life Sciences at Maastricht University. A considerable part of the 6-year medical curriculum consists of skills trainings. Nine teachers (1/3 of staff of Maastricht University Skillslab) were interviewed in a structured way. A topic grid was used to ensure comparability. Students’ views were explored by conducting six focus groups with twenty-nine randomly selected students. Recorded interviews and focus groups were transcribed and analysed independently by three researchers.

Conclusions: Students and teachers agreed on the importance of the ideal teacher being ‘approachable’ and ‘flexible’. Other effective teaching skills include: affinity for teaching, ability to adapt to varying conditions, comprehension of students’ context, use of humour, providing feedback and linking physical examination skills training to clinical situations.

Take-home messages: Students and teachers have similar views on effective teaching skills in supporting the acquisition of physical examination skills. Differences include teacher behaviour that will decrease students’ motivation or impede their learning. These results could prove valuable for faculty development programmes.

2Y/P12
The importance of peripheral venous access training early in the course
J M Pêgo*, A Salgueira, N Sousa, M J Costa (Life and Health Sciences Research Institute (ICVS), School of Health Sciences, University of Minho, Campus de Gualtar, Braga 4710-057 Braga, Portugal)

Background: Gaining peripheral venous access is an essential outcome for undergraduate medical students. Therefore, the undergraduate curriculum should contemplate opportunities for practice under effective teaching approaches.

Summary of work: An innovative practicing module on management of peripheral venous access (puncture for blood sampling and catheterization) was designed. An introductory lecture and video demonstration (30 min) precede practice on peers with the appropriate informed consent. The module is supervised by an anesthesiologist. Additional practicing opportunities are available, in which students, voluntarily, can practice under supervision. Individual level of confidence in this outcome was gathered pre-post session.

Summary of results: Observational records and preliminary data (n=7) show little confidence before the sessions (86% ≤ 4; 7 point Likert scale questionnaire); an overall improvement after the session (71.5%≥5). 100% of students manage the technique and would recommend the module to others.
**Conclusions:** Students can gain expertise in peripheral venous access with a short practicing activity. Additionally, it is an educational experiencing of 'standing in patients' shoes' of the procedure that creates the sense of responsibility and empathy for patient suffering.

**Take-home messages:** The module can easily be adapted by other medical schools.

### 2Z/P1

#### Undergraduate medical education: training program for basic clinical in surgery

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**Background:** Clinical skills must be to the fore of medical occupation, especially in surgery, where the mastery of basic skills is of great importance for the young learner. The acquisition of basic clinical skills during surgery clerkships has been shown to be inadequate.

**Summary of work:** The program consists of one-week training in basic clinical skills in surgery and a three-week clerkship on surgical ward. In their skills training, a maximum of 6 students per group rotate through 12 modules with various teaching methods as skills lab training, simulation and role play in order to enlarge their clinical competence. On the ward, students learn to integrate their acquired skills in clinical skills under supervision.

**Summary of results:** From January to March 2008, the first 134 students participated in the program. On a 6-point Likert Scale (1 = very good, 6 = unsatisfactory), they rated overall training as good (Average 1.84), skills training as very good (Aver. 1.20) and clerkship on the ward as good (Aver. 2.43).

**Conclusions:** The training program helps students acquire basic clinical skills in a safe and enjoyable environment as shown in students’ evaluation.

### 2Z/P2

#### The measuring of reflective thinking: a pilot study in Thai medical students

*Lucksamee Haura* (Hatyai Medical Education Centre, 182 Rathakarn Road, Hatyai, Songkla 90110, Thailand)

**Background:** Many courses in the medical curriculum have the tendency to promote reflective thinking, but there is a scarcity of studies in Thai medical students.

**Aim:** To examine the level of reflection in medical students using the instrument developed by Kember et al. (2000).

**Summary of work:** The subjects were 24 6th year medical students of 2007 academic year at Sappasitthiprasong Medical Center. The scenario based short essay question examination of 20 items concerning common clinical problems in pediatrics was performed one week prior to the end of the academic year. All subjects had already completed 8 weeks pediatric and 4 weeks emergency unit clerkship turn. The items were grouped into 3 domains; problem identification, verification and prioritization as the prerequisite for an initial plan of management. Minimal passing level was 85 from total score of 100.

**Summary of results:** (% pass, n=24) problem identification: 100%; verification: 54.16%; prioritization: 58.33%.

**Conclusion:** The critical thinking evaluation results were not satisfactory.

**Take-home messages:** To reach clinical practice achievement of medical student, critical thinking, especially problem verification and problem prioritization, should be emphasized and trained more throughout clinical teaching processes and should be balanced along with medical knowledge.

### 2Z/P3

#### Should reflection be assessed? The student perspective

*Martina Kelly* (*Dept of General Practice, School of Medicine University College Cork, Brookfield Health Sciences Complex, Cork, Ireland*)

**Background:** Reflection is widely advocated as a professional skill and is increasingly incorporated into medical education curricula, as such it is likely to be assessed. Yet little is known about what students think about reflection and how it should be assessed.

**Summary of work:** After engaging in reflective practice for one academic year, a group of third year medical students were surveyed to gauge their opinions on the value of reflection. Results were correlated with basic demographics and learning style (Index of Learning Styles, Feldman & Soloman).
Summary of results: Out of a class of 129, a response rate of 66% was obtained. 54% of students valued writing reflections and 25% reported that they would continue the process even if no marks were awarded. The main barrier to reflective practice was the process of writing it down — many reported this was an activity they engaged in mentally. Many students felt that assessment would detract from the honesty of their reflections. A open relationship between assessor and student was considered fundamental to the learning process. Students with a reflecting style showed no preference towards reflection. Older students were more likely to value reflection. Peer assessment was not acceptable for this group of students.

Take-home messages: If reflection is to be assessed, considerable engagement with students is essential to ensure it remains a valid exercise.

2Z/P4
A single, collective midterm feedback can stimulate students’ reflective attitude
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Background: Both portfolios and one-to-one mentoring seem to stimulate reflective thinking attitude, but they imply a heavy workload to be managed. We studied the outcome of a single, collective midterm feedback to students about their fulfilment of the mandate, in a Clinical Methodology curriculum.

Method: Subjects: 3rd year medical students writing portfolio reports during a six months long medical clerkship. Expected learning outcome: enhance the attitude to reflective thinking by the use of portfolios. Sixty two students wrote 56 reports in the first three months. Twenty students composed 105 reports in the second ones. The single midterm feedback was provided in a classroom meeting after the evaluation of the first 56 reports. The 161 reports were scored independently by two evaluators using AnSWR (CDC Atlanta) and a original 25 codes scale.

Summary of Results: Forty-six out of 97 students (47,4%) wrote portfolio reports. Sixty-seven out of 161 reports (41,6%) were codified as fulfilling the mandate, with a significant increase (5% vs 22.5%, t2p<0.01) in the post-feedback group, together with an increased number of reports (mean reports/student: 2,15 vs 5.25; t-test p< 0.01).

Conclusion: Medical students show a scarce reflective thinking attitude. A single collective midterm feedback proved to be effective in increasing the comprehension of a reflective mandate.

2Z/P5
The effect of a short term course of problem solving on self-concept of nursing students at Shiraz Faculty of Nursing and Midwifery
Marzieh Moattari*, Ali Soltani, R Masood Moosavinasab, Alineza Ayatollahi (Shiraz University of Medical Sciences, PO Box 71345-1359, Shiraz 71936-13119, Iran)

Background: Nurses today not only require specific knowledge and skills but also the ability for problem solving, decision making and judgment. This quasi experimental study was performed to determine the effect of an short problem solving course on students’ self concept.

Summary of work: Subjects were 54 volunteer nursing students. They filled out “Carl Rogers’s self-concept inventory”. This inventory has been developed to measure students’ individual attitude toward “actual self” and “ideal self”. In the second stage, the subjects were randomly divided into two groups (each group=27). Then the experimental group participated in the designed intervention program. To facilitate the groups’ dynamics, interaction, brainstorming and discussion, they were divided into 3 small groups. The intervention program was performed in 6 different sessions based on D’zurilla and Goldried problem solving method.

Summary of results: The finding revealed that the course positively affected the self-concept of the experiment group. Comparing the pre to post self-concept changes of the 2 groups a significant difference was found.

Conclusion: In general, implementation of the problem-solving course was a successful experience that resulted in the improvement of self-concept. Therefore, this kind of education on problem solving is highly recommended in various nursing domains (education, research, and clinic).

2Z/P6
Fourteen diagnosis types linked to each one of the subjects in the curriculum
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Background: The aim of a Medical School is that students learn how to take care of patients; for this it is essential to make a diagnosis. The question is: can the Clinical Reasoning that leads to Diagnosis be a competency in all subjects?

Summary of work: In our curriculum, the competencies of all subjects, preclinical and clinical, are oriented to diagnosis. We found out the different types of diagnosis that can be done and linked them with at least one subject:

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<tr>
<th>Diagnosis</th>
<th>Subject</th>
<th>Diagnosis</th>
<th>Subject</th>
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<tbody>
<tr>
<td>Morphologic, macroscopic</td>
<td>Gross anatomy</td>
<td>Genetic</td>
<td>Genetic</td>
</tr>
<tr>
<td>Morphologic, microscopic</td>
<td>Histology, pathology</td>
<td>Communitarian</td>
<td>Public Health</td>
</tr>
<tr>
<td>Morphologic, development</td>
<td>Development biology</td>
<td>Clinical more likely</td>
<td>Clinical sciences</td>
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<tr>
<td>Functional, organic</td>
<td>Physiology</td>
<td>Differential</td>
<td>Clinical sciences</td>
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<td>Functional, biochemical</td>
<td>Biochemistry</td>
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<td>Functional, molecular</td>
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This table is very useful for the preclinical sciences but is not absolute; each subject can be linked with more than one.

Conclusion: The diagnosis ability is a key feature of the clinical practice; therefore educators must provide students the opportunity to learn it from the preclinical years, according to the course content.

Take-home messages: The learning of Clinical Reasoning that leads to reach a diagnosis must be a competency in all subjects.


Evaluation of clinical reasoning skills of students in PBL-based-integrated medical curriculum
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Background: The present study was undertaken to evaluate the level of clinical reasoning of students following the PBL-based-integrated curriculum of Ankara University School of Medicine.

Summary of work: The study was conducted with 156 third year (64%) and 98 fifth year (72%) students. Clinical Reasoning problems (CRP) developed by Groves (2002) were used in the study.

Summary of results: Reliability (Cronbach Alpha) of CRPs was found to be 0.76. Average total score of CRP was determined as 159.69 ± 36.19 (max. 344.00). Average CRP scores of 5th year students was found to be higher than 3rd year students' (p<.001). Average score of each clinical problem (CP) was observed to be higher in 5th year students than 3rd year except for 2 CP (p<.05). Approximately three quarters of students generated at least one powerful hypothesis for seven CPs. It was observed that the CPs in which students succeeded the least in generating powerful hypotheses were the ones that the lowest clinical reasoning process performances were scored. Hypothesis generating rates of 5th year students were higher than 3rd year students except for two CPs (p=.000).

Conclusions: Results of the present study support that CRP is a reliable instrument in discriminating CR performances of students at different levels of medical education.

Do medical students learn from bedside learning? A study into the contribution of bedside learning in the development of clinical decision making ability and the acquisition of factual knowledge
Takuya Saiki* (Nagoya University, Dept of General Medicine, Nagoya 466-0063, Japan)

Background: As the contribution of bedside learning to the development of their clinical decision making ability (CDMA) in harmless and harmful disease and the acquisition of knowledge are unknown, two research questions were studied. 1. What's the difference in the knowledge increase and the CDMA increase? 2. What part of the change in CDMA score is influenced by the score on harmful diseases and harmful diseases?

Summary of work: The test includes a knowledge section and a CDMA section composed of a harmless and harmful subsection. It was sat by 44 fourth year students starting their bedside learning and 33 fifth year students finished their bedside learning. The mean score (MS) was analyzed by the t-test and the Effect Size (ES).

Summary of results: There were statistically significant increases on both sections of the knowledge and the CDMA (ES: 0.999-CDMA, 1.24-knowledge). Also the fifth year students' CDMA-MS in the harmless and harmful subsections were higher than those of the fourth year students, which were statistically significant (ES:0.957-harmless, 0.666-harmful).

Conclusion: Students' CDMA increased, but less than the knowledge increase. This CDMA increase was more affected by the increase of the harmless subsection than by that of the harmful subsection.

Take-home message: Further study should be addressed to analyze the main factors of CDMA development.

Validity of the Script Concordance Test: a pilot study in the Middle East
F Haddad*, D Gaspard, E Nemr, R Moussa, M Nasr, S Abou-Jaoude (Hotel-Dieu de France Hospital, Bvd Alfred Naccache, Beirut 165207, Lebanon)

Background: The Script Concordance test (SC) test is an assessment tool that measures clinical reasoning in the context of uncertainty. It has been proven valid and reliable in Europe and North America, but no studies are available for the Middle East. This presentation aims to evaluate the reliability and validity of the SC test in internal medicine in a previously untested environment: Lebanon in the Middle East.

Summary of work: A 120 items SC test was administered to participants from the internal medicine department in a university hospital. Two levels of experience were tested: residents (n = 21) and third year medical students (n = 25). Scores between groups were compared by analysis of variance. Reliability analysis was studied with Cronbach alpha coefficient.

Summary of results/Conclusions: Mean global scores were 57.86 +/- 5.77 for students, 62.12 +/- 5.58 for residents. The difference between the two groups was statistically significant (P=0.0153). Cronbach alpha was 0.69 for the test.

Take-home messages: In this previously untested learning environment, the SC test proved to be able to discriminate various levels of experience in internal medicine. Further studies to assess the stability of the test across different parts of the world would be interesting.

Diagnostic reasoning teaching – an analysis of expert teacher utterances in a clinical setting
G J McColl*, D Clarke (University of Melbourne, Medical Education Unit, FMDHS, Parkville 3050, Australia)

Background: A model of novice diagnostic reasoning has recently been published which divides the reasoning task into three phases – data acquisition (DA), problem representation (PR) and hypothesis generation and refinement (HG) phase. The study was designed to determine if the utterances of clinical teachers acknowledge this model of diagnostic reasoning.

Summary of work: Tutorials were led by a teacher, who had won the teacher of the year award, with a group of clinical medical students and a simulated patient who delivered a script that was deliberately diagnostically inconclusive. Each session was videotaped and analysed using Studiocode video analysis software. Coding first attributed each utterance to the teacher, student or patient. The teacher utterances were then further coded to the phases of diagnostic reasoning process (DA, PR and HG).

Summary of results: Six expert teachers participated in the tutorials (3 physicians and 3 surgeons). The teachers, on average, spoke for 56% (range 43-64%) of the tutorial. Of the teacher utterances 55% were coded to the HG phase, 31% to the DA phase and 3% to the PR phase.

Conclusions: his study confirms that expert teachers apply a model of novice diagnostic reasoning but spend least time discussing the PR phase of the model. This may compromise diagnostic reasoning teaching outcomes and therefore further research is required in this area.
2Z/P11

Construction and validation of a scale to measure EBM competencies of undergraduate medical students
Tai-Young Yoon*, Jinkyung Ko, Jaehyun Park (Kyung Hee University School of Medicine, 1 Hoegi-dong, Dongdaemun-gu, Seoul 130-701, Republic of South Korea)

Background: The purpose of the study was to develop a scale to measure medical students' knowledge of, attitude towards and practice of EBM. Based on the results of a literature review, 4 dimensions were identified: 1) Knowledge 2) Pursuit 3) Reluctance, 4) Practice.

Summary of work: The purposes of this study were multiple: 1) to develop an EBM competency scale; 2) to compare the effectiveness of teaching students' knowledge, attitude, and practice of EBM; 3) to determine if the scale is reliable, valid, and fit for purpose.

Summary of results: The new scale retained 11 items for Knowledge (Cronbach's α=.918), another 11 items for Pursuit (α=.874), 7 items for Reluctance (α=.708) and 9 items for practice (α=.731).

Conclusion: The EBM competency scale was validated.

2Z/P12

Should clinical practice guidelines be an integral part of medical education?
Radim Licenik*, Daniela Jelenova, Tomas Kuhn, Pavel Kurfurst, Adela Michalcova, Jarmila Potomkova, Katerina Ivanova (Palacky University Faculty of Medicine, Tr. Svobody, Olomouc 771 26, Czech Republic)

Background: Clinical practice guidelines (CPG) are defined as ‘systematically developed statements to assist practitioner and patient decision about appropriate health care for specific clinical circumstances.’ Guidelines are developed for a variety of purposes such as to assist physicians and patients in their decision-making to disseminate best practice based on systematically appraised scientific evidence to improve quality of care and outcomes for patients; to decrease inappropriate health care to decrease practice variation; to decrease costs and improve cost-effectiveness.

One of the tasks of the Centre for Clinical Practice Guidelines of Department of Social Medicine and Health Policy of Palacky University Medical Faculty is to involve medical students in CPG development, implementation and the evaluation process. We use high quality evidence-based CPG in undergraduate medical education for these reasons.

Summary of work: We established an educational programme focused on CPGs. A newly developed workshop on CPG critical appraisal has been implemented since March 2008. The users of the clinical practice guidelines are health care professionals, patients and other stakeholders. This is why they should be an integral part of medical education. There are two reasons for this: one is to learn about CPGs and the other is to learn from them.

2Z/P13

Randomised controlled crossover trial of lecture and tutorial versus problem based learning for evidence based teaching and learning in medical students
J Johnstone*, G Venning (University of Hong Kong, Department of Community Medicine, Li Ka Shing Faculty of Medicine, 21 Sassoon Road, Hong Kong, People's Republic of China)

Background: As part of an ongoing process of teaching and learning quality improvement we undertook a randomised controlled crossover trial to compare the effectiveness of problem based learning (PBL) versus ‘usual’ teaching for evidence based medicine (EBP) in Year-2 MBBS students at the Li Ka Shing Faculty of Medicine, The University of Hong Kong.

Summary of work: Students were randomly assigned to 13 PBL groups and then by group to either PBL (small group approximately 10 students) or usual teaching (large group approximately 20-30 students). Students were alternatively allocated by PBL or usual teaching by system block. A previously validated questionnaire was used to assess pre-post changes in students' attitudes towards EBP, future use of EBP, EBP knowledge, and personal application and use of EBP. Tutorial satisfaction was assessed at the end of each block. Focus group interviews were conducted to explore acceptability, feasibility and perceived usefulness.

Summary of results: We found significant pre-post differences in 'EBP knowledge' and 'attitudes towards EBP' and between group differences in tutorial satisfaction scores with students preferring the small groups with more tutor involvement. Focus group sessions confirmed the students' preference for small group learning and a directed tutor led approach.

Conclusion: Evidence based medicine teaching is best conducted through structured tutorials supported by a clinically relevant patient scenario.

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2AA/P1

Internationalising the curriculum
Alyson Quinn, Malcolm Harris* (Postgraduate Dental Education Unit, Warwick Medical School, University of Warwick, Gibbet Hill Road, Coventry CV4 7AL, United Kingdom)

Background: This poster explores the teaching and learning implications of internationalising a postgraduate dental education programme from the UK into Singapore and Dubai.

Summary of work: Comparative case study research into how the programme affects professional practice and perceptions of academic study across the three international contexts was carried out.
**Summary of results:** Results from the research show that while professional practice is enhanced, respondents also reported that the programme had more of an impact on their personal development, particularly in the areas of critical thinking skills, reading and verbal discussion.

**Conclusions:** This research is informing planning and development of the curriculum for future cohorts of students in the UK and internationally.

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**2AA/P2**

A system of assessment and induction for GPs who have not worked in UK General Practice for 3 years or more

Mary Beech* (Wales Deanery, Cardiff University, 8th Floor, Neuadd Meirionydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

**Background:** UK Primary Care Organisations must be assured that GPs given unconditional inclusion on the Medical Performers List (MPL) are safe to practice independently. Increasing numbers of GPs who have either not worked in UK general practice for the preceding 3 years, or never done so are seeking entry to the GP workforce. Funding for induction in general practice is limited. The Wales Deanery has developed a system of formative assessment that ensures fair and equitable access to funding.

**Summary of work:** (1) Funding available for up to 9 induction places per year. (2) Eligible applicants referred to the Deanery for assessment + interview. (3) 2 assessment centres held per year. (4) Candidates scores are ranked; report prepared for the PCO indicating likelihood of the candidate achieving safe independent practice after 6 months’ induction.

**Summary of results:** 10 GPs have been assessed; 6 received funding for induction.

**Conclusions:** Experience to date has revealed huge diversity in the scope of these needs.

**Take-home messages:** (1) Increasing demand for induction means that a robust, equitable system is needed to ensure only those most likely to achieve safe independent practice after 6 months are given funding. (2) LHBs are empowered to make logical, defensible decisions in the interests of patient safety.

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**2AA/P3**

Going to Africa? A guide for structuring International health electives

Jeanie Kanashiro*, Gwen Hollaar* (Office of International Surgery, University of Calgary, Peter Lougheed Centre, 3500 - 26th Avenue N.E., Calgary T1Y 6J4, Canada)

**Background:** More and more medical students/residents are seeking an international health experience in a low-income country as a clinical “elective” during training. Objectives for such international health electives (IHEs) are often vague and poorly defined. Furthermore, trainee evaluation cannot be non-specific, as international preceptors are unfamiliar with desired educational outcomes of the trainee’s program. Typically, the student/resident joins an international preceptor in anticipation of contributing some medical service to an existing impoverished health care system while gaining exposure to a high volume of clinical experience, usually in tropical medicine. After the IHE, trainees are quite reflective of the many enriching educational experiences they have gained, however these learning outcomes are not all captured in their IHE evaluation.

**Summary of work:** Due to these challenges, a guide has been created for structuring postgraduate IHEs based on CanMEDS competencies*. Residents are asked pre-elective questions to first develop practical, relevant IHE objectives. Afterwards, the guide assists the resident, preceptor and program to expound upon the resident’s learning with respect to each CanMEDS role (Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar, Professional).

**Conclusion/Take-home message:** The use of this guide will direct and explicate the immense educational opportunities, challenges and outcomes that residents experience while working in international health settings.


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**2AA/P4**

Propaedeutic before clinical practise courses: a chance to create a modulated course in the curriculum of the medical faculty of Witten/Herdecke due to the first steps of “Bologna Process”

S K Schmidt*, S Balzereit, A Roeder, D Tauschel, K Büker, M Hofmann (University of Witten/Herdecke, Faculty of Medicine, Alfred-Herrhausen-Str. 50, Witten 58448, Germany)

**Background:** At the medical faculty of Witten/Herdecke University, all students beginning from the 2nd year on receive their main medical education during special clinical periods. The theoretical units are mostly held as clinical lectures. After some student-classes had passed this, we realized that a more precise introduction into the clinical themes is needed. For a better student involvement, 3rd year students were asked about what they would have needed during their clinical periods in order to have more benefit.

**Summary of work:** Due to this evaluation, propaedeutic periods fitting the special clinical topics were implemented. For example, all 2nd year students now have a suture-practice course before their surgery-training. Belonging together, these propaedeutics build a frame around the practical units. Adapting to this, basic medical themes are also included.

**Conclusion:** This construction has now run through for several clinical subjects. The students evaluated that they have had a good professional advancement in the clinic, containing the relevant practical skills.

**Take-home message:** This version makes it possible to modulate the curriculum because theoretical and practice parts are added together in a period of about 6-8 weeks. That might be a first step to build up a curriculum anticipating the “Bologna Process”.

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**2AA/P5**

Predictors of success to match in the 2007 cohort of international medical graduates in the 1st iteration

Sandra Banner*, Elina Hayes (Canadian Resident Matching Service, 171 Nepean Street, Suite 300, Ottawa, Ontario K2P 0B4, Canada)

**Background:** Physician resource planning has been challenging in Canada throughout the past decade. The role of International Medical Graduates (IMGs) and their contributions to the national physician supply has be essential to Canada. Many IMGs lack the required preparation, knowledge and skills or have limited access to assessments, training opportunities and support.
It is, therefore, important to study factors that may predict success to match and enter postgraduate training for individual IMGs applying for the CaRMS match.

**Summary of work:** A limited database of 768 International Medical Graduates who applied to the CaRMS 2007 Match was used. The study evaluated whether match rates are associated with a number of identified predictors of success.

**Significance:** The results showed that medical schools with graduation dates of 1998 or later were generally in the first graduating class as an index of medical school expansion. Health system indicator information at the country-level (including, healthcare worker density, total expenditure on health as a percentage of gross domestic product, access to healthcare) were obtained from WHO and Eurostat sources. We assessed how medical school expansion differed by health and education system indicators of countries within and outside the European Union (EU).

**Conclusions:** In this study, **include factors** were predictive of success to match for IMGs for residency programs. Limitations to this study are acknowledged.

**2AA/P6**

**Language proficiency, social learning and medical competence among international medical graduates**

**Stefan Kutzsche** (Ullevaal University Hospital, Dept. of Pediatrics, Kirkevn. 166, Oslo 0407, Norway)

**Background:** International medical graduates (IMGs) are part of the medical workforce in many countries. Weakness in language acquisition of physicians with a medical degree and medical practice from countries that are not part of the European Economic Area (EEA), can be mistaken for poor professional competence or may endanger the safety and quality of health care provision.

**Purpose:** To review basic scientific theories of multicultural education and education for migrants to measure aspects of professional outcomes of the physicians concerned.

**Summary of results:** The zone of proximal development determines activities that are just beyond the level of what IMGs can do alone (Vygotsky, Bruner). Learning medicine requires an entry into a distinctive reality system because social learning actually leads to cognitive development (Cummins). IMGs without experience in the national context might need mentors and “scaffolded” instruction to provide this context of social interaction (Krashen). The “dual-iceberg” metaphor (Cummins) illustrates that system-based practice integrates medical knowledge, communication and language proficiency.

**Conclusion:** Contextualized language use is the basis for implementing and executing medical competence.

**Take-home message:** Interaction of mentoring and contextual language acquisition of the “new” language helps IMGs to be sensitive to provide health care with quality assurance in the national context.

**2AA/P7**

**Medical school expansion in Europe**

**Danette McKinley**, Carole Bede, Amy Opalek, Onyebuchi A. Arah, John Boulet (Foundation for Advancement of International Medical Education and Research, 3624 Market Street, 4th Floor, Philadelphia PA, United States)

**Background:** The Foundation for Advancement of International Medical Education and Research (FAIMER) maintains the International Medical Education Directory (IMED). Graduation years as listed in the IMED database were used to classify schools by first graduating class as an index of medical school expansion. Health system indicator information at the country-level (including, healthcare worker density, total expenditure on health as a percentage of gross domestic product, access to healthcare) were obtained from WHO and Eurostat sources. We assessed how medical school expansion differed by health and education system indicators of countries within and outside the European Union (EU).

**Summary of results:** The results showed that medical schools with graduation dates of 1998 or later were generally in countries with lower physician, nurse, and dentist density and lower percentages of tertiary level graduates in health. For countries in the EU, expansion occurred where total expenditure on health was slightly higher. For countries outside the EU, expansion occurred where total expenditure on health was slightly lower.

**Take-home message:** It would be important to determine to what extent medical school expansion addresses local needs for additional healthcare workers.
Courses in medical languages – a way to facilitate international exchanges
Valérie Landais, Hanna Brauner, Anastasia Pharris, Alfvén Tobias (Dept of Learning, Informatics, Management and Ethics (LIME), Karolinska Institutet, Berzelius väg 3, Stockholm S-17177, Sweden)

Background: Karolinska Institutet (KI) and many other medical schools promote study abroad programmes as part of their education. We have previously shown that there is a strong interest in foreign medical language courses among students at KI*. To our knowledge, such courses do not yet exist in Europe.

Summary of work: Courses in medical English and French have been developed and given during spring 2008. They were created by both experienced teachers and clinicians and contained several interactive pedagogical methods.

Summary of results: The courses were very popular, with three applicants for each available place (totally 22). Participants were students at different study programmes and clinicians. Follow-up questionnaires showed that all students who took part in the courses wanted to study and/or work in a country where the language they studied is spoken. Fifty percent thought that the course would be very helpful and 50% helpful (5 and 4 respectively on a scale from 1 to 5) during their planned study exchange.

Conclusions: Courses in medical languages facilitate opportunities for students who want to study abroad and will hopefully enable a better usage of the time spent in the new environment.

*(presented at AMEE 2007)

Promoting academic leadership of Ghanian physicians
Patricia B Mullan*, Timothy Johnson (University of Michigan Medical School, 1500 East Medical Center, G1116 Towsley Center, Ann Arbor 48105, United States)

Background: An emerging strategy for countries resolving to stem the migration of physicians takes the form of focused faculty development programs, collaboratively developed between countries. This descriptive study presents the findings of a faculty development program designed to train Ghanian physicians to enhance their academic leadership skills and skills in family planning.

Summary of work: A three-week program was designed for 25 physicians from Ghana. At the end of training, faculty rated the impact of the training. The survey also included retrospective pre-post questions, in which physicians rated their skills before completing the course, as well as their skills after completing the program.

Summary of results: Most (87%) participants “agreed”/“strongly agreed” the program increased their knowledge and academic skills. A greater percentage of participants (92%) “agreed/strongly agreed” the program enhanced their knowledge and skills in medical family practice techniques. In retrospective pre-post program comparisons, the greatest magnitude of change occurred in identifying sources for philanthropy and capacity building, identifying models for faculty development, understanding the use of clinical simulation centers, recognizing the use and value of educational portfolios, and using effective methods for evaluation and feedback.

Conclusions: The results suggest that focused faculty development programs can enhance Ghanian physicians’ perceived academic leadership and family planning.
SS1/1
Developing a competency-based curriculum from undergraduate studies to continuous professional development in a Faculty of Medicine: a motivating project
M Chaput*, A Boucher, B Millette, R Lalande (Centre de Pédagogie appliquée en Sciences de la Santé, Université de Montréal, 660 Dunlop, Montreal H3V 2W4, Canada)

Background: Training residents to CanMEDS roles is mandatory in our Faculty. We reviewed our PBL method and adopted a competency-based approach (CBA) for undergraduate and postgraduate levels.

Summary of development: This project became the focus of a strategic developmental plan and the source of a large scope of initiatives: 1. Set up of the seven Competency Councils, made of teaching family physicians, specialists, medical students and other health professionals, responsible for clarifying each role description, elaborating an integrative model for the development of the competency and selecting appropriate training/assessment tools to each level; 2. Creation of a Central Committee, regrouping the presidents of each council, Faculty representatives and a specialist educator who supervises, standardizes and coordinates the progress of the seven councils; 3. Training of more than 80 clinical teachers from various programs to our CBA who became active leaders for their own department and contributed to the elaboration of a bank of pedagogical resources. This project brought together professors for the curriculum renewal.

What will be presented: We present a conceptual map of the process and offer a portfolio of our realizations. Our ongoing experience relies on commitment from the direction team, global strategy, longitudinal planning of educational content, leadership and involvement/training of clinical teachers.

SS1/2
Creating a certificate course in health professional teaching and education
K Leslie, I Silver*, D Richardson, J McCaffrey, S Wagner, A Dionne, S Reeves (Centre for Faculty Development, Faculty of Medicine, University of Toronto, 30 Bond Street, Toronto MSB 1WB, Canada)

Background: Faculty development programs are often challenged by sustaining the motivation of faculty to attend faculty development programs longitudinally. One solution is to create a program where faculty can earn a credential that they can document in their teaching dossier and join a cohort of similarly minded teachers.

Summary of development: The Centre for Faculty Development in the Faculty of Medicine at the University of Toronto initiated a 40 hour certificate course in teaching and education in 2003-04. The course consists of an education journal club held monthly in an academic year and a selection of workshops held over a two year period. Currently, 105 faculty have completed this program. Program evaluation results, both short and long term, have been very positive.

What will be presented: A poster will highlight the various components of this program including the list and description of workshops, journal club session themes, short and long term evaluation data and advertising and marketing information. The reading list for the journal club sessions, instructions for journal club leaders and faculty participants, and a copy of the certificate will also be provided.

Take-home messages: Offering credentials within your faculty development program can enhance attendance, the motivation of faculty and ultimately the quality of teaching at medical schools. Socialization in a longitudinal journal club cohort appears to have a long term impact.

SS1/3
Search, be found, and be Number 1: strategies to optimize your website for search engines
Paul E Burrows*, Suzanne S Stensaas* (University of Utah, 101 So Wasatch Dr 215EB, Office of Information Technology, Salt Lake City, Utah 84112, United States)

Have you tried using a search engine to see where your publicly available, “open access” website ranks? Are you findable? Are you 58th in search results? Would you rather be in the top 10 results (non-sponsored), even Number 1? Since 2001, we carefully designed a website to demonstrate procedures for the Neurological Exam, using narrative descriptions and 253 digital video clips. (http://library.med.utah.edu/neurologicexam). Our web analytics tools showed our site visitations growing month-by-month, year-by-year. What had we done to deserve this? We will share our secrets to become successfully found on the enormous World Wide Web. At the same time we’ll shamefully admit to our huge mistakes in the original site design. Through illustrations of our page designs, you will quickly see best practices for search engine optimization of your own website…and the worst errors to make. Included are “before” and “after” search results based on “before” and “after” page re-designs. Take away the proven top tips for making your website findable by students, faculty, educators, researchers, and the public. Recognize how different search engines (Google, Yahoo, MSN, AOL, etc.) rank you. Focus your efforts on the most important search engine (based on your web page’s analytics). Become Number 1!

SS1/4
How to introduce students to the new learning environment: induction to Medical School
Jonathan C Darling*, Quen O Tang, Aarti Patel, Jennifer C McCarthy, Katharine L Burwaltur (University of Leeds, Academic Unit of Paediatrics and Child Health, St James’s University Hospital, LS9 7TF Leeds, United Kingdom)

Background: There is nothing in the medical education literature on induction of students into Medical School, and this perhaps reflects a perception that it is not an important part of the curriculum. We will explain why it is important, and give some suggestions on how to design an induction programme.

Summary of development: We have designed a 5 day introductory programme for our MBChB course, which is matched to the whole course. This has been run for several years.

What will be presented: We will outline a practical approach to designing an induction programme, including ideas for what works well, and our own ‘LOCH NAE’ acronym, which can be used to assist design of any course. This consists of the following: Learners; Objectives; Content; How (Methods); Needs (Resources); Assessment; Evaluation. We will compare our programme to preparations to introduce students to the new learning environment: induction to Medical School.

Take-home messages: Time spent in a carefully designed induction programme is time well spent. Use of a systematic approach improves design of any course.
This symposium will examine five European education initiatives that provide a window into the range of educational activities in medical education in Europe. These reflect some of the current trends in medical education and raise important questions about future practice. Each of the five initiatives will be introduced by a speaker followed by five minutes for questions and answers. At the conclusion of the session there will be 10 minutes allocated for a general discussion.

1430 Introduction to the session: Vincenzo Costigliola (EMA) (Chairperson)
1435 The Bologna Process: Madalena Patricio (Faculty of Medicine, University of Lisbon) and Olle ten Cate (University Medical Centre, Utrecht)
1450 Student led initiatives in medical education: A European Core Curriculum in Medicine: Jan Hilger (IFMSA), Souad de Roos (EMS)
1505 The WHO’s strengthening health system focus requires competent health professionals: Galina Perfilieva (World Health Organisation)
1520 The Avicenna Directory of Medical Schools: Hans Karle (WFME)
1535 eLearning Standards in Europe: Terry Poulton (MedBiquitous Europe)
1550 General discussion

3B Teaching, learning and assessment of professionalism

3B/SC1 Constructive criticism or popularity contest: what students think of peer assessing professionalism
Jayne Garner* (University of Liverpool, CETL, Cedar House, Ashton Street, Liverpool L69 3GE, United Kingdom)

Background: The peer assessment of professionalism has generated wide discussion in medical education over the past 5 years. While large scale studies have been undertaken in the US, little work has been done on student attitudes to assessing the professionalism of peers in the UK.

Summary of work: An online voluntary anonymous survey hosted by the University of Liverpool was circulated to medical students at 6 UK medical schools. The survey asked students about their attitudes to assessing their peer’s professionalism and how comfortable they would feel doing this.

Summary of results/Conclusions: 500 responses were received, with the majority of students agreeing that peer assessment could help them reflect on their professional behaviours. Respondents said they would feel comfortable assessing their peers and receiving feedback on their professional behaviours. Comments from respondents also identified key issues regarding training, support and feeding back peer assessment.

Take-home messages: Respondents were positive overall about assessing their peer’s professionalism, and how this could help them reflect on their practice. However they did have concerns about how assessment information would be used and how it could impact upon student relationships. Recommendations from students about peer assessing professionalism will complete this presentation.

3B/SC2 Evaluation of a new data collection process for assessment can be used to review student professionalism
Max Field*, Nana Sartania, Andy Jenkins, Susan Fyfe and Barry Clark (Wolfson Medical School Building, University Avenue, University of Glasgow, G12 8QQ, United Kingdom)

Aims: To improve assessment by encouraging student involvement, increase the efficiency of returns and investigate students’ professionalism.

Summary of work: Previously on completion of each 10 clinical attachments in year 4/5, supervisors complete a written record of the students’ assessment (~5000/year) consisting of 10 parameters and an overall mark. An electronic system was generated to facilitate transfer of data from supervisors to the Medical School, which was also made available to students to log their own record. This program identified discrepancies between staff and student returns, which are reviewed by faculty staff.

Summary of results: Previously, 73% of returns arrived within two weeks, which improved to 92% & 99% from supervisors and students respectively, by using electronic transfer. In twelve months nine students failed to reach the required overall assessment standard. In each, rapid identification was facilitated by returns from student, staff or both. Some parameters and descriptors were inappropriate leading to form redesign, and some discrepancies (<2%) resulted from inaccurate form filling which training should correct.

Conclusion: Efficiency of assessment can be improved by involving students and the increase in awareness leads to a further improvement. Students are honest in returning agreed overall marks and a modified assessment process has been developed following the study.

3B/SC3 Instilling professionalism – interns’ perceptions on formal ethics curriculum for undergraduate students
K Meer Mustafa Hussain*, A Nalini (The Tamilnadu Dr. MGR Medical University, 69, Anna Salai, Guindy, Chennai 600032, India)

Background: The purpose of our study is to analyse the learning experience regarding medical ethics by medical students in order to facilitate the planning of formal curriculum in ethics.
**Summary of work:** A survey was conducted in four teaching hospitals in Tamilnadu, India. Data were collected from students undergoing internship after completing four and a half years of MBBS course. A structured questionnaire was used. 184 interns responded.

**Summary of results:** 64% of the responders felt that they had opportunity to learn about ethics during the course, mainly in the specialities of Forensic Medicine and Community Medicine. 75% said that there is a need for a formal curriculum in ethics. The survey highlighted the need for a formal curriculum in medical ethics and the importance of ‘hidden curriculum’ in instilling professionalism.

**Conclusion:** The influence of role models and the impact of hidden curriculum were emphasized.

**Take-home message:** The survey highlighted the need for a formal curriculum in medical ethics and the importance of ‘hidden curriculum’ in instilling professionalism.

### 3B/SC4

**An evaluation of a piloted intervention on the Emotional Intelligence (EI) and psychological well being of 3rd year undergraduate medical students**

*Peter Leadbetter*, Helen O’Sullivan (University of Liverpool, Centre for Excellence in Developing Professionalism (CETL), 4th Floor Cedar House, Liverpool L69 3GE, United Kingdom)

**Background:** In order to enhance the relevance and effectiveness of our year 1 Personal and Professional Development course we worked with representatives from service user and carer groups and other health and social care professionals. We devised 8 case scenarios, intended to develop both understanding about professional roles and a more holistic approach to patients.

**Summary of work:** Qualitative data was collected from evaluation forms and student focus groups and analysed thematically. Findings were then compared with previous course evaluations.

**Summary of results:** The case scenario format enabled students to apply knowledge to real situations and to reflect on the reality of life with a chronic illness. In addition, the course enabled students to improve their understanding of different areas of health and social care and about the roles and responsibilities of different health professionals.

**Conclusions:** This is an innovative and effective method of learning about holistic approaches to patient care and professional roles.

**Take-home messages:** This is a model for good practice in developing educational partnerships with service user and carer groups.

### 3B/SC5

**Service user and carer involvement in Personal and Professional Development: does it help students?**

*Shelley Fielden*, Christopher Carney, Sue Kilminster, Aduke Onafowokan (University of Leeds, Medical Education Unit, Level 7 Worsley Building, Clarendon Way, Leeds LS2 9NL, United Kingdom)

**Background:** In order to enhance the relevance and effectiveness of our year 1 Personal and Professional Development course we worked with representatives from service user and carer groups and other health and social care professionals. We devised 8 case scenarios, intended to develop both understanding about professional roles and a more holistic approach to patients.

**Summary of results:** The case scenario format enabled students to apply knowledge to real situations and to reflect on the reality of life with a chronic illness. In addition, the course enabled students to improve their understanding of different areas of health and social care and about the roles and responsibilities of different health professionals.

**Conclusions:** This is an innovative and effective method of learning about holistic approaches to patient care and professional roles.

**Take-home messages:** This is a model for good practice in developing educational partnerships with service user and carer groups.

### 3C Implementing e-learning

**3C/SC1**

**Encouraging students to take the “e-nitiative”**

*Nick Short*, RVC Students (Royal Veterinary College, Royal College Street, London NW1 0TU, United Kingdom)

**Background:** The veterinary student of today has grown up surrounded by all things electronic. These “digital natives” are often more adept and confident at using e-learning than their teachers. In response to this trend, the RVC has adopted an approach of “learning from the learners” when trying to maximize the potential of using web 2.0 tools to support teaching.

**Summary of work:** The RVC has established student focus groups in each academic year to identify student needs. Students have then been supported to develop the resources they have requested. This has resulted in a wide range of excellent new developments including a Facebook induction site, audio lecturing recording, student videos and a student driven wiki.

**Conclusion/Take-home messages:** Students are an often underutilized resource in the provision of e-learning. Involving them in the planning and development process ensures that e-learning is based upon appropriate and accessible technologies.
3C/SC2
Is an open source VLE best suited for enhancing the student experience?
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Background: St. George's had to consider whether to play safe with a corporate Virtual Learning Environment (VLE), or risk embedding a new open-source VLE (Moodle), with limited penetration in the HE sector but with greater potential for local adaptation to student needs. Moodle was chosen, because it was believed its open-source flexibility was well suited to integration with other applications.

Summary of work: The first step was to customise Moodle to institutional requirements; branding, design and creation of course templates for case-based learning. Attention then switched to customising the VLE to meet student needs. Internal and external applications were embedded in those areas of the curriculum where students would expect to find them i.e. the 'one-stop-shop'. These included learning resources, live classroom, voice tools and the personal portfolio.

Conclusions: The advantages of using an open source VLE were 2-fold. Firstly it was easier for technical developers to integrate external applications; by comparison, corporate VLEs are relatively impenetrable 'black boxes'. Secondly, the worldwide community of Moodle developers can contribute their own experiences and developments.

Take-home message: The institution and its students have gained a VLE which is customisable, flexible, robust and cost effective, qualities which arise directly from its open source origins.

3C/SC3
AIRDIP - making quality assured learning and teaching resources more readily available
Suzanne Hardy*, John Moss, Phil Cross (Intute) (Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine, 16/17 Framlington Place, Newcastle University, Newcastle upon Tyne NE2 4HH, United Kingdom)

Background: Navigating the range of databases, library catalogues and project websites to source good electronic learning and teaching resources can be a time consuming and confusing process.

Summary of work: The Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine has been working closely with a number of other Subject Centres (SCs) and with Intute, (a free online service providing access to the very best Web resources for education and research), to embed searches, and rationalise business processes in the Academy/Intute Resource Database Integration Project (AIRDIP). AIRDIP ensures that enhanced educational metadata about resources suitable for learning and teaching is easily findable from a number of differing access points with subject specific descriptions and reviews. Embedded searches of enhanced Intute/SC catalogues are now available as 'local' searches on a select number of SC websites. These can be expanded out to include other SC metadata about the same resource (such as reviews), Higher Education Academy generic related resources, plus associated research resources from Intute.

Conclusions/Take-home messages: Providing easier access to quality assured electronic resources may enhance the quality of teaching materials, by making access easier to up-to-date and quality assured material for time-pushed lecturers.

3C/SC4
PASTEL: a novel method to judge the quality of medical E-learning material
Project Members of the University Medical Centers of Groningen, Nijmegen and Leiden, the Netherlands (Presenter: J Goris) (University medical center of Groningen, Hanzeplein 1, Groningen 9713RB, Netherlands)

Background: E-learning is hot and the amount of E-learning material available is growing fast. The quality of the material however varies. In a project funded by the Dutch Educational Innovations Foundation (SURF), the University Medical Centers of Groningen, Nijmegen and Leiden developed a method to assess the quality of medical E-learning modules.

Summary of work: Two questionnaires were developed to assess each E-learning module. With the first questionnaire the quality of the medical content is assessed. The second questionnaire is used to assess the educational quality. A pilot was conducted and the questionnaires were revised. A procedure has been developed by which every E-learning module is judged by two experts on medical content (medical specialists) and one expert on education (educationalist). The three judgements combined offer a weighed judgement of fitness.

Summary of results: A novel method to judge the quality of E-learning modules.

Conclusions: The PASTEL method offers a way to make a well-founded choice when considering using an E-learning module in medical education.

Take-home messages: E-learning offers great possibilities to educate students and doctors, but not all E-learning is suitable. Take a look at our quality assessment to make the right choices.

3C/SC5
Effective on-line teaching
Tim McMahon*, Hemal Thakore (University of Limerick, Graduate Medical School, Limerick Co. Limerick, Ireland)

Background: There is a considerable body of literature on what constitutes effective teaching. There is a lesser but still substantial body on how to structure online learning. What is often lacking, however, is a comprehensive synthesis whereby the principles of effective face-to-face teaching are applied in a Virtual Learning Environment (VLE). Further, the literature on online learning often discusses very specific and context laden examples. Those teachers who are not themselves e-learning experts often find it difficult to derive generalised principles to guide the online teaching activity that has become an expected part of their professional duties as educators.

Summary of work: The authors have combined the essential lessons from both sets of research literature with practical insights gained from the design of learning objects and the use of a structured VLE (Blackboard) in order to show how established maxims for effective teaching can be applied to on-line learning in a way that uses the potential of modern communications technology to implement learning strategies that, according to the best available research, is most likely to prompt higher order (deep) learning.

Conclusions: While the principles of good teaching remain the same on- or off-line, student behaviour is not. The application of these principles must take account of both the potential of the technology and what the research tells us is the way students are likely to respond when engaged in e-learning.

Take-home message: It is possible to structure learning activities to maximise deep learning.
3D/SC6
Digital content in the academic medicine environment - exemplars from both sides of the pond
Chara Balasubramaniam*, Gabrielle Campbell**, Angela Miller***, Ahrash Bissel†, Terry Poulton* (St George’s University of London, Association of American Medical Colleges, Northern Ontario School of Medicine, and Creative Commons Learn, e-Learning Unit, Centre for Medical and Healthcare Education, St George’s, University of London, Cranmer Terrace, Tooting, London SW17 0RE, United Kingdom)

Background: Uncertainty about Intellectual Property (IP) rights, such as Copyright, is a major hurdle to academic institutions that try to create and share digital-content. This is particularly prominent in medicine due to the anonymity expected when the content includes patient-related clinical information. In addition, laws governing copyright and patient privacy differ from country-to-country, making the process of sharing even more confusing.

Summary of work: Organisations in North America and Europe established a collaboration to review the current state of copyright and IP laws in their respective countries and also to propose ways to tackle this issue ‘globally’. Results showed differences in approaches taken to address copyright. Also, national laws governing this issue differed from country-to-country. However, there were similarities and approaches to move forward together too.

Conclusions: Although this is a confusing issue, there are ways, such as the adoption of Creative Commons licenses, by which institutions can prepare and protect themselves with respect to IP in digital-content.

Take-home message: This isn’t something to put on the ‘backburner’ any longer - it is a ‘real’ issue that threatens academic collaboration. Provided the right steps are taken, it may still be possible to facilitate digital-content sharing between medical schools, regardless of geographic location.

3D/SC1
Adapting and implementing PACES as a tool for undergraduate assessment
N Low-Beer*, M Lupton, J Warner, M Blair, A Almaraz Serrano, P Booton, J Higham* (Imperial College School of Medicine, Chelsea and Westminster Hospital, 369 Fulham Road, London SW10 9NH, United Kingdom)

Background: The OSCE is commonly used to assess clinical competence in undergraduate medicine in the UK. The need for a more clinically authentic method has been acknowledged.

Summary of work: PACES (Practical Assessment of Clinical Examination Skills) has been successfully implemented as an assessment tool for postgraduates. The PACES format was adapted and introduced as a series of summative end of year assessments for 5th year medical students at Imperial College, London. The assessments consisted of four distinct 15 minute stations.

Summary of results: Feedback from students, internal and external examiners suggests that PACES is an appropriate tool for undergraduate assessment, which has some advantages over the OSCE.

3D/SC2
Resuscitation skills – A little bit of knowledge goes a long way – Comparing the results of an OSCE versus an OSCA resuscitation question
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Background: Resuscitation skills are taught throughout the undergraduate medical curriculum in Edinburgh, progressing from basic to advanced skills through the five years of the programme.

Summary of work: In 2007, in place of a more traditional OSCE format, the Year 3 resuscitation question was integrated into an online clinical assessment (OSCA). Results from this OSCA assessment were poor, with many students failing to pass compared to a high pass rate when students were examined practically. In order to address this, changes were made to the teaching, and in June 2008, we will assess the students’ both using an OSCA and OSCE format in order to identify any possible gap between the knowledge underpinning these skills and the practical application of them.

Conclusion: There is a significant gap between students’ practical application of resuscitation skills and their ability to demonstrate the underlying theory behind them. A comparison of results from the OSCE and OSCA this year will show whether changes to teaching are helping to address this imbalance.

Take-home messages: (1) Students need to be encouraged to link relevant theoretical knowledge with practical skills teaching; (2) They also need to be motivated to seek out appropriate clinical opportunities to help bridge knowledge and skills gap.

3D/SC3
Construct validity of three clinical performance assessments
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Background: Although preceptors’ ratings, objective structured clinical examinations (OSCE) scored by standardized patients (SP), and the National Board of Medical Examiners (NBME) subject exam scores are frequently used to assess clinical performance, construct validity of these measures remain to be established.

Summary of work: 589 students taking the inpatient medicine clerkship in 2003-2007 participated in the study. Structural equation modeling (SEM) techniques confirmed the three measures assessed three domains: 4-aspect clinical skills rated by SPs, medical knowledge rated by preceptors and the NBME score, and 7-item clinical performance rated by preceptors. The three domains correlated modestly with each other (.39 - .58). Knowledge base was the most predictive trait of the preceptors’ overall rating (R2 = .62), whereas history taking was the counterpart of the mean OSCE score (R2 = .66). A combination of the preceptors’ ratings and OSCE scores accounted for only 53% of the NBME score.
**Conclusions:** Construct validity of the three measures was supported modestly by each other. Low correlations between the same aspects of clinical performance assessed by preceptors and SPs need further investigation. **Take-home messages:** The multitrait-multimethod approach to clerkship assessment is needed. Clerkship preceptors need to differentiate their judgment on students’ performance.

### 3D/SC4

**Modification of an OSCE station (communication skills) moves student learning from theory to practice**

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**Background:** Our second-year medical students perform an OSCE (one station on doctor-patient-communication) before their first clerkship. In addition to structured training, students can visit our skills-lab to prepare for the exam. There they extensively use simulation-mannequins, but steadily avoid our simulated-patient (SP) studios (also at their disposal).

**Summary of work:** In a randomized trial (n=240), we asked students to videotape their SP-OSCE-encounter in advance of the exam and to repeat this record at will (best-video group). This video replaced the communication station, but was rated following equal criteria. The control-group (live-performers) received the same training opportunities (use of the SP-studios with video-recording).

**Summary of results:** Students preferred the new examination approach. Both, best-video-group and live-performers, invested on average 3 hours voluntary study-time in advance of the OSCE. The best-video-cohort put significantly more emphasis on training with SPs (mean duration 75 minutes vs. 29 minutes), while the live-performers invested more time into the study of communication checklists (112 minutes vs. 61 minutes). Both groups reported about 40 minutes of role-play with colleagues outside the skills-lab. No significant difference was found in the performance-ratings (video vs. live).

**Take-home message:** OSCEs move students’ learning from theory to practice, but the use of presumably well accepted portfolio-like videos, replacing OSCE-stations might shift students’ learning to practice even more.

### 3D/SC5

**Transferable skills: not a mythical beast**

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**Background:** Clinical skills examinations are often designed to test generic skills but some researchers suggest that the evidence for the existence of transferable skills is weak.

**Summary of work:** We set out to explore whether transferable skills made a contribution to undergraduate student performance in a clinical skills examination. We constructed correlated trait-correlated method models to describe the performance of two consecutive year groups of undergraduate medical students in their clinical skills examinations.

**Conclusions:** Content-specific skills made the greater contribution to the two models of student performance but transferable skills made an important but smaller contribution.

**Take-home messages:** Both content-specific skills and transferable skills contribute to performance in the clinical skills examination. This challenges current thinking and has important implications for medical educators.

### 3D/SC6

**Evaluation of two approaches to skills based assessment: Objective Structured Clinical Examinations and the Integrated Procedural Performance Instrument**

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**Background:** Assessment of clinical skills is a critical element of undergraduate medical education. We compared a traditional approach to procedural skills assessment – the Objective Structured Clinical Examination (OSCE) with the Integrated Performance Procedural Instrument (IPPI). In both approaches, students work through ‘stations’ or ‘scenarios’ undertaking defined tasks. In the IPPI, all tasks are contextualised requiring students to demonstrate technical, communication and other professional skills. The aim of this study was to explore students’ responses to these two approaches.

**Summary of work:** Third-year medical students participated in a formative OSCE and the IPPI. Group interviews were conducted with students. Data were analysed thematically.

**Summary of results:** Students found both experiences valuable. Preference for the OSCE was associated with a forthcoming clerkship. In the IPPI, all tasks were contextualised requiring students to demonstrate technical, communication and other professional skills as required in clinical practice.

**Conclusions/Take-home messages:** Designing scenario-based assessments is more likely to result in students expressing preferences for learning in a style commensurate with values that underpin the General Medical Council’s expectations of new graduates and the United Kingdom’s National Health Service. We would encourage curriculum developers to consider the influence their approach to assessment has on student learning.

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**3E Reforming a curriculum**

### 3E/SC1

**Power, glory and diseases of the medical curriculum**

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*Karen Mattick*, Ian Dennis, Paul Bradley, John Bligh (Peninsula College of Medicine and Dentistry, St. Luke’s Campus, Heavitree Road, Exeter EX1 2LU, United Kingdom)

**Background:** Current trends in the design of the undergraduate medical curriculum strongly advocate the implementation of three key educational strategies, first proposed many decades ago, namely: reducing information overload (GMC, U.K., 1963; 1969; 1976), self-directed learning (Payne, 1983) and curriculum integration (Miller, 1961). Why did medical educators take so long to recognize the need for and significance of such educational strategies?
Strong leadership is required to ensure rational curriculum decision-making in medical schools. 

Take-home message: Strong leadership is required to ensure rational curriculum decision-making in medical schools.

3E/SC2
New curriculum at China Medical University: a pilot study
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Summary of work: We have investigated the impact of the new comprehensive integrated curriculum in medicine in China. This was accomplished by a mixed-methods approach including content analysis, interviews, surveys, and focus group discussions. The curriculum is centered and problem-based, and a challenge to the traditional medical curriculum lasting hundreds of years in China. The project has formed a climate of medical education reform and will help to advance and deepen medical educational reform in China.

Conclusion: With this program, we established for the first time a comprehensive integrated curriculum in China, which is student-centered and problem-based, and a challenge to the traditional medical curriculum lasting hundreds of years in China. The project has formed a climate of medical education reform and will help to advance and deepen medical educational reform in China.

3E/SC3
The determinants of students' engagement and persistence: the case of a PBL competency-oriented curriculum in medicine
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Summary of work: We investigated the impact of a competency-oriented curriculum on students' engagement and persistence in higher education. The project was supported by a mixed-method approach including content analysis, interviews, surveys, and focus group discussions. The new integrated curriculum is based on a case-based approach and emphasizes active learning. The results show that students' engagement and persistence are higher in the competency-oriented curriculum compared to the traditional didactic approach. The project has also demonstrated that innovative teaching methods, such as case-based learning, can improve students' engagement and persistence.

Conclusion: The competency-oriented curriculum has positively impacted students' engagement and persistence, and can be expanded to other medical schools.

3E/SC4
Fostering innovation in medical education: Mayo Clinic Arizona experience
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Background: Mayo Clinic Arizona has implemented an Education Innovation program (EI10) designed to foster and support new educational initiatives and to then inculcate successful initiatives into the fabric of educational activities at Mayo Clinic Arizona. Time to teach and a modest level of funding are essential to EI10 success.

Summary of work: The EI10 program has led to successful implementation of novel medical education curriculum and methods at Mayo Clinic Arizona. Time to teach and a modest level of funding are essential to EI10 success.

3E/SC5
Curriculum change and the power of students and examination
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Background: The Faculty of Medicine mandated curriculum reform by requiring all students to have a comprehensive integrated curriculum in medicine in Canada. This was achieved by selecting 21 proposals for funding support ranging from $600.00 US to $11,000 US. A credit of 10% time away from their clinical duties was utilized for completing the proposal. Among the projects that have successfully been incorporated include a longitudinal evidence-based medicine-training program (MERIT), a technology-based diabetes education curriculum has also been broadly applied successfully been incorporated include a longitudinal evidence-based medicine-training program (MERIT), which is now an integral aspect of MCA based residencies and fellowships. A technology-based diabetes education curriculum has also been broadly applied.

Summary of results: To date, of 58 submissions, 21 proposals have been selected for funding support ranging from $600.00 US to $11,000 US. A credit of 10% time away from their clinical duties was utilized for completing the proposal. Among the projects that have successfully been incorporated include a longitudinal evidence-based medicine-training program (MERIT), which is now an integral aspect of MCA based residencies and fellowships. A technology-based diabetes education curriculum has also been broadly applied successfully been incorporated include a longitudinal evidence-based medicine-training program (MERIT), which is now an integral aspect of MCA based residencies and fellowships.

Conclusion: The EI10 program has led to successful implementation of novel medical education curriculum and methods at Mayo Clinic Arizona. Time to teach and a modest level of funding are essential to EI10 success.

Summary of work: A selective review of the literature was undertaken to find explanations for the apparent decades of delay in implementing curriculum reforms incorporating the key educational strategies identified above. Such changes are required to address the long gestation period of significant changes needed in medical education. The determinants of students' engagement and persistence are higher in the competency-oriented curriculum compared to the traditional didactic approach. The project has also demonstrated that innovative teaching methods, such as case-based learning, can improve students' engagement and persistence.

Conclusion: This program has demonstrated that innovative teaching methods, such as case-based learning, can improve students' engagement and persistence.

Monday 1 September 2008
Summary of results: Students were challenge to work with faculty and develop a core liaison group (CLG). The CLG met weekly with the dean and the undergraduate dean to report issues and communicate change through a newsletter and meetings to give immediate feedback. Student representation on the course committees became more empowered. Another part of the solution involved mandatory examination item writing workshops for all faculty involved in the new curriculum prior to each course.

Conclusion: Real empowerment of students in the process of curricular renewal and the focus on critical faculty activity such as exam writing focuses on student need and on their learning objectives with increased student and faculty satisfaction.

3E/SC6
The effect of curriculum change in Ankara University School of Medicine on fifth year students' empathy scores
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Background: An integrated, student-centered curriculum, mostly composed of competency-based professional skills lessons and problem-based sessions, was started at Ankara University School of Medicine in 2002-2003.

Summary of work: The purpose of this study was to compare the empathy scores in medical students in the fifth year, who were educated with two different curricula (traditional vs student-centered). The research group consists of 194 fifth year students who were the last ones educated according to the traditional curriculum and 127 fifth year students from the new curriculum. The Jefferson Scale of Physician Empathy was used to measure the empathy scores of the students, which includes 20 items with a 7-point Likert scale. Mann Whitney-U test was used to compare the empathy scores of fifth year students in terms of both different curricula and gender.

Summary of results: The results showed that the fifth year students' empathy scores in two curricula were significantly different [U=10500, p=0.025], and there were no differences between male and female students' empathy scores in traditional [U=4559.5, p=0.876], and new curriculum [U=1620.5, p=0.224].

Conclusions: The curriculum change from a discipline-based, traditional one to integrated, student-centered type with a competency-based structure, provided a positive effect on the fifth year students' empathy scores.

3F/SC2
Development of a guideline for the use of a CanMEDS-based, computer supported multi-source feedback procedure in postgraduate medical education
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Background: Modernization of Dutch postgraduate medical education has led to the development and implementation of new competency based assessment methods, among with multi-source feedback (MSF).

Summary of work: A guideline was developed about MSF, based on the CanMEDS competency framework. The guideline is founded in international literature, initial experiences and expert opinions. These concerned the goals of MSF, the selection and approach of available sources, anonymity of sources, desired number of raters, appropriate surveys, timing and frequency of MSF and the minimal period of observation to reliably assess a registrar. The procedure and newly designed forms were piloted in three different hospitals.

Summary of results/Conclusions: The proposed procedure in our guideline has proven to be an acceptable and feasible method for formative assessment of specialist registrars. An email-based procedure with different surveys for each group of sources is strongly recommended. The procedure can be implemented on a relatively short term in different postgraduate training programmes and is supplementary to other competency based assessment methods. Further studies will be done on the educational impact of MSF.

Take-home message: When using an email based procedure and different surveys for each category of sources MSF is a feasible and acceptable formative assessment method.
3F/SC3

Supporting the poor prescriber through a 360 degree diagnostic questionnaire

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Background: Problems with junior doctor prescribing is a subject of national concern and has reached the national press. Assessment tools currently in use for such doctors do not look at prescribing in depth. A tool/system which could closely examine the prescribing performance of any doctor in difficulty would be useful for remedial purposes.

Summary of work: The content of a 360 degree diagnostic questionnaire on prescribing was developed through a literature review, comparison with national training documents, patient interviews and consultation with experts. A short pretesting exercise guided the format of the questionnaire which was then developmentally tested with potential participants/raters. The system consisted of the prescriber giving four questionnaires to a range of raters and completing one as self assessment. The collated scores and supporting comments were then used as the basis of a feedback discussion. The system was piloted with 28 junior doctors and fully evaluated.

Summary of results/Conclusions: The system was acceptable to those involved and can be implemented in a busy hospital environment. Despite identifying a small number of trainees with less than satisfactory scores, the system should be seen as diagnostic, not a robust assessment tool. It is successful in raising awareness of the various aspects of good prescribing and can provide valuable feedback.

Take-home message: The tool/system described can identify which aspects of the prescribing process are causing concern and inform remediation.

3F/SC4

The Learning by Teaching Project – opportunity for multisource feedback

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Background: The ACGME advocates use of multisource feedback for assessment. We piloted a project utilizing teaching as opportunity for multisource feedback to assess ACGME competencies.

Summary of work: The IWOCCS Program at Bronx-Lebanon Hospital trains residents in communication skills & cultural competence using interactive and peer-education models. The program piloted Learning by Teaching Project, whereby PGY-3 residents taught IWOCCS sessions to PGY-1 residents. Sample topics include basic communication, adolescent patient, psychosocial model of care, and giving bad news. Assessment strategy includes 1) Faculty Assessment Instrument – by faculty while mentoring residents through the teaching process; 2) Peer Assessment Instrument – by PGY-1 learners; 3) Self Assessment Instrument.

Summary of results: Twenty-eight residents participated in the Project. Faculty Assessment focused on preparation and implementation, and addressed Professionalism, Communication Skills and Problem-Based Learning & Improvement. Peer Assessment focused on session content and teaching ability, and addressed the same domains. Self Assessment provided opportunity for reflection on changes in knowledge, attitude and skills on particular topics; abilities to teach; and how teaching fostered self-directed learning.

Conclusions/Take-home messages: Teaching activities provide excellent opportunities for multisource feedback and assessment, and should be incorporated into residency training curricula.

3F/SC5

Candidate appeals against the results in the MRCPCH, a high stakes postgraduate examination, are increasing

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Background: Membership of the Royal College of Paediatrics and Child Health defines competency for entry into higher specialist training in UK, and is taken internationally. Candidates receive copies of the actual examiner marksheet for every station. Increasing numbers of appeals have demanded a structured Appeals process, with an Appeals Panel and quality assessment. Feedback is provided to all appellants.

Summary of work: We have analysed Appeals to the College for 3 years: 2005-2007.

Summary of results: Over 3 years and 9 diets of the Clinical Examination for MRCPH, of 4157 candidates, 134 (3%) have appealed against the final result. In 2005 and 2007 appeals were 2.0% and 5.0%, respectively (p<0.01). Successful appeals rose from 0% to 8.7%. Appeals relate to all stations of the structured examination assessing competency in communication, history taking, and clinical skills. 70% of appeals were borderline marks. Many related to dispute concerning the level of pass grade (Clear Pass and Pass). Reasons for successful appeal varied but often implicated examiner documentation on mark sheets.

Conclusions/Take-home messages: Candidates in high stakes exams are more likely to appeal and to appeal successfully. The importance of good examiner documentation is clear. A transparent, structured Appeals procedure is needed.

3F/SC6

Insight: self-awareness and improved clinical performance

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Background: The UK’s National Clinical Assessment Service (NCAS) assesses medical and dental practitioners referred by their employer/contractor because of performance concerns. The assessment is developmental. Practitioner insight is an important consideration for any subsequent action-planning and performance improvement. This presentation supports the concept of “self-awareness” in this regard and identifies how it can be assessed using existing NCAS assessment instruments.

Summary of work: We reviewed definitions of insight, excluding the psychiatric literature, and identified self-awareness, defined by Grant (2001) as "a predisposition to engage in acts of affective (emotional) and intellectual inquiry into how and why oneself and/or others behave, think and feel", as helpful in this setting. Self-awareness is a dynamic concept, amenable to development and has been shown to improve performance. We reviewed each assessment instrument for measures of self-awareness. Practitioner self-awareness could be assessed by: (i) personality profile scores; (ii) the behavioural assessor’s judgment (based on the personality profile, practitioner information/interview and referring body information); (iii) differences between performance ratings by the practitioner and their peers in multi-source feedback.
3G/SC1
Teaching EBM skills at undergraduate level in a Pakistani Medical School
Mobeen Iqbal* (Shifa College of Medicine, Pitrus Bukhari Road, H-8/4, Islamabad 00000, Pakistan)

**Summary of work:** The ‘Controlled Trials’ workshop on the pre-clinical block at the Shifa University was designed to make students aware of the importance of EBM. The workshop covers various aspects of systematic reviews, randomised controlled trials, meta-analyses and evidence-based practice. It is conducted by experienced faculty members who use real-life examples and case studies to illustrate the principles of EBM. The workshop aims to enhance students' understanding of evidence-based practice and its application in clinical decision-making.

**Conclusion:** The workshop received positive feedback from the participants. It was perceived as an effective tool for introducing EBM to medical students. The workshop helped students develop critical thinking skills and understanding of evidence-based practice. The workshop was also valuable in promoting self-directed learning and lifelong learning in undergraduate curricula of developing countries.

**Take-home message:** EBM can be an important way of promoting self-directed and lifelong learning in undergraduate curricula of developing countries.

3G/SC2
Bringing Evidence-Based Medicine to the bedside
Kevin Galbraith* (The University of Southampton, Division of Medical Education, School of Medicine, Boldrewood Campus, Southampton SO16 7PX, United Kingdom)

**Background:** Many medical schools have introduced evidence-based medicine (EBM) into their curriculum, though teaching critical appraisal skills often occurs in isolation. To facilitate students' learning of this outcome, critical thinking was designed as one of the ‘vertical axes’ of our curriculum. The EBM course was taught 2-3 hours weekly for 19 weeks in three campuses using telecommunication. The teaching methods employed were blended learning, lecture/workshops, large group presentation/discussion, student assessments included MCQs; assessment of clinical practice guideline (CPG) development; and peer assessment of teamwork. As a part of Year 5 curriculum, questionnaires were distributed to all students (N = 156) with items asking about the EBM course included.

**Summary of results:** The overall satisfaction score was average (mean = 6/10; SD = 1.9). 71% of the respondents acknowledged the significance of learning EBM with 59% agreeing that the practice of CPG development was beneficial. However, 60% felt that CPG development was too difficult. 40% preferred the practice of systematic review or meta-analysis.

**Conclusions:** Successful implementation depends on overcoming barriers. EBM for beginners’ workshops were effective in improving awareness, skills and attitudes of EBM in medical students. EBM can be an important way of promoting self-directed and lifelong learning in undergraduate curricula of developing countries.

**Take-home messages:** EBM should be taught in a clinical context. This presents challenges in curricular design, the sharing of which may inform the medical education community.

3G/SC3
Teaching Evidence-Based Medicine at the Faculty of Medicine, Chulalongkorn University
T Atikankul, I Spanuchart*, W Kulwichit, S Suwanwalaikorn, D Wangsaturaka (The Faculty of Medicine, Chulalongkorn University, 1873 Rama IV Road, Patumwan, Bangkok 10330, Thailand)

**Background:** Critical thinking is the 8th learning outcome of our undergraduate medical curriculum. To facilitate students' learning of this outcome, critical thinking was designed as one of the ‘vertical axes’ and was carefully integrated into the curriculum from Year 1-6 with evidence-based medicine (EBM) planned as a fifth-year course. The EBM course was taught 2-3 hours weekly for 19 weeks in three campuses using telecommunication. The teaching methods employed were workshops, large group presentation/discussion, student assessments included MCQs; assessment of clinical practice guideline (CPG) development; and peer assessment of teamwork. As a part of Year 5 curriculum, questionnaires were distributed to all students (N = 156) with items asking about the EBM course included.

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**Take-home messages:** EBM should be taught in a clinical context. This presents challenges in curricular design, the sharing of which may inform the medical education community.

3G/SC4
Generic Research Skills for Medicine – a vertical curriculum strand
Jim Alton*, Susie Whiten, Julie Struthers (University of St Andrews, School of Medicine, Bute Medical Buildings, St Andrews KY16 9TS, United Kingdom)

**Background:** Medical students from St Andrews graduate with a BSc Honours Degree in Medicine prior to completing their clinical training at a partner medical school. Every student is required to complete an Honours research dissertation, this being a major student-selected component in our integrated, systems-based curriculum.

**Summary of work:** We have developed a generic skills matrix to ensure that we provide students with the appropriate skills required to complete their research dissertation. These skills include an understanding of evidence based medicine, critical appraisal, information management and scientific writing. Opportunities to practice these skills are embedded across the 3 years of our curriculum and are integrated with the development of important professional attributes such as clinical reasoning.
3G/SC5
Teaching research skills to clinicians: have we got it right?
Sunny C D Collings* (Research and Postgraduate Office, University of Otago, Wellington, PO Box 7343, Wellington South 6000, New Zealand)

Background: Clinical research - that is, research based on questions derived from clinical observations - used to be the key to important discoveries in medicine. In many countries, medical and other health research has increasingly become the province of ‘expert’ researchers.

Summary of work: On the basis of key informant interviews with researchers, teaching clinicians and postgraduate medical trainees (registrars/residents), this short paper will reflect on the contemporary relationship between clinical practice and research practice, examining the influences shaping it, and raise questions about whether the current situation is supportive of developing a research-minded medical workforce for the future.

Conclusion: Clinical medicine may need to revisit its founding culture of enquiry if the call for ‘translational research’ is to lead to change. This may be a critical element of training the next generation of clinicians to be innovators, something that health policy-makers are calling for.

3G/SC6
Educational experiences of undergraduate research students and the relation with student outcomes
A D C Jaarsma*, E M Schaumans, D H J M Dolmans, A M M Muijtjens, P van Beukelen, A J J A Scherpier (Faculty of Veterinary Medicine, Yaleaan 1, PO box 80163, Utrecht 3508 TD, Netherlands)

Background: Many universities nowadays acknowledge the importance of scientific training of (bio)medical students. An instructional form that seems beneficial for increasing research competencies in students is the research internship. The present study is aimed at investigating the complex environment of a research internship. The research questions are: 1) How do undergraduate students experience their research internship, especially supervision quality, skill development, social and intellectual climate, infrastructure, and goals clarity? 2) How do these factors relate to the quality of research reports and overall satisfaction?

Summary of work: A questionnaire was constructed and administered to Year 5 veterinary students. Research reports were assessed by use of a rating scale. Regression analyses were performed with the factors mentioned in research question 1 as independent variables and the student’s research report and overall satisfaction as dependent variables.

Summary of results/Conclusions: Students scored high on all factors related to the research internship experience. High quality supervision and social climate were factors positively associated with the quality of the research internship.

Take-home messages: Supervisors and their department’s community play a crucial role in research education. Specific training of supervisors and improvement of the quality of the social climate is recommended to further improve the quality of the research internship.

3H/SC1
A closer look at effective faculty development in medical education

Background: The quality of medical teachers is crucial for the quality of medical education. Therefore, the importance of faculty development can hardly be overestimated. Teacher faculty can be organized in different ways, ranging from, for instance, a one-day workshop to a one-year-long coaching trajectory. In this study, successful faculty development is analyzed using a list of characteristics of effective faculty development, derived from Steinert et al. (2006) and Guskey (2003) and the levels of Kirkpatrick. Context factors are also taken into account. Results of this study should be useful for the development of future faculty development.

Summary of work: Faculty development specialists in the eight medical departments in the Netherlands were asked to nominate a promising practice in their department. Data about these practices and about relevant context factors were gathered using interviews and document analyses.

Summary of results/Conclusion: The effective practices can be described using the list derived from Steinert et al. and Guskey and the levels of Kirkpatrick. Specific medical context factors are important.

Take-home message: The checklist for effective faculty development can be a useful tool when designing faculty development if also the specific medical context is taken into consideration.

3H/SC2
Web-based seminars for faculty development of medical educators
Veronica E Michaelsen, Jack W Strandhoy* (Wake Forest University School of Medicine, Medical Center Blvd., Winston-Salem, North Carolina 27157-1083, United States)

Background: Training Medical School faculty in educational pedagogy and practice takes time and resources. While web-based seminars (webinars) have been successfully used in both business and technical continuing education, they are relatively new to medical education. We surveyed available webinars and how they are being used for medical school faculty development.

Take-home message: Identifying areas of the curriculum to practice research skills has helped inform the design and content of the curriculum map and also strengthen our research-teaching linkage.
3H/SC5

Trainee teachers' self reflection on their teacher role

F M Bos*, A W Sillius, W M Molenaar (University Medical Centre Groningen, Antonius Deusinglaan 1, Groningen 9713 AV, Netherlands)

Background: The need for doctors qualified in medical education is widely recognized. Therefore, we developed a teacher training program to obtain a qualification. We considered that a) training programs are most effective if they cater to the needs of the trainees and b) reflection by teachers improves their teaching. We assessed the needs and inclination to reflect in 16 teachers entering the program.

Summary of work: Assessment was done by an interview which included a reaction on eight verbal images depicting different teacher roles (promoter of critical thinking, fairy godmother, student among students, rescuer, adventurer, juggler of theory and practice, survivor, learning facilitator; cf MacDouagg and Drummond; Med. Ed. 2005). All interviews were recorded and transcribed and three assessors scored reflection (present/absent).

Summary of results: Eleven trainees reflected on their own role as teacher on 50% or more of the verbal images; the others gave only a general view on teaching. Conversely, each of the verbal images inspired reflection in 8 to 13 trainees.

Conclusion: At the start of the training program most, but not all, trainees could be induced to reflect on their teacher roles. The program should aim to develop reflection in the non-reflectors and intensify it in the reflectors.

3H/SC6

The impact of training and reflective practice on medical education

S R Greenwood*, P A Thorpe, S Atkinson (University of Bristol, TLHP Office, Centre for Medical Education, 39/41 St Michael's Hill, Bristol, BS2 8DZ, United Kingdom)

Background: Medical educator development programmes can be hotbeds of innovation, due to the encouragement teachers are given to reflect upon and improve their teaching practice. The resulting developments and enhancements, however, are rarely objectively studied, collated or disseminated. One way of doing this is through an analysis of the reflective assignments submitted by participants.

3H/SC3

Peer learning in faculty development

PBSC Collaborative Education Series Working Group (Presenters: Heather Armson, Allyn Walsh) (University of Calgary/McMaster University, UCMC Sunridge, 3465 26th Ave NE, Calgary, Alberta T1Y 6L4, Canada)

Background: A Canadian group is developing a series of evidence-based printed educational modules on faculty development topics, directed towards community based and rural teachers. Modules include learner-preceptor cases and evidence-based information summaries, and discuss strategies to enhance teaching in each content area. The interactive small group workshops provide opportunities to practice and receive feedback on implementation. Local teaching physicians are used as facilitators and are provided with a facilitation guide.

Summary of work: Five modules have been developed: Feedback; Medical Errors and Mistakes; Teaching on the Fly; The Learner in Difficulty and Evaluation of Learner Performance. To determine effectiveness, a study of the first module (Feedback) used commitment to change statements to assess proposed practice changes, immediately after the workshop and three months later.

Summary of results: The majority of participants made one or more commitment-to-change (CTC) statements after the workshop. At 3 months, the majority of preceptors reported they had implemented the CTC statements in their teaching practices.

Conclusions: Small group facilitated discussions around common teaching topics, which include practical strategies to improve teaching, appear to be successful.

Take-home message: Low-tech educational modules can provide effective faculty development for teachers who may not have ready access to teacher training.
3I Approaches to clinical teaching

3I/SC1 Introducing gynaecology teaching associates to the UK: pilot study
K Barry*, J V Parle*, D Morley, S Irani (University of Birmingham Medical School, Edgbaston, Birmingham B152TT, United Kingdom)

Background: Teaching by GTAs (gynaecology teaching associates) is a well established method for teaching medical students how to perform a respectful and competent pelvic examination in much of mainland Europe and North America. In the UK however, such initiatives are unusual.

Summary of work: We have recently piloted the use of GTAs among 3rd year medical students (n=34), in our 400 student entry medical course which has a high proportion (over 35%) of students from ethnic minorities.

Summary of results: Initial results are very promising with almost all students recording an improvement in their comfort with examining external female genitalia and performing an internal pelvic examination moving from ‘very uncomfortable’ to ‘comfortable’ or ‘very comfortable’. Free text comments were similarly positive e.g. ‘I now feel less intimidated about doing a pelvic examination’.

Conclusions/Take-home message: UK students, male and female (but especially the former), welcome the opportunity to develop intimate examination skills in a simulated low-pressure environment.

3I/SC2 Involvement of healthy people in teaching intimate examination to medical students
Vikram Jha*, Naomi Quinton, Jane Dent, Zeryab Setna, Janice Rymer (University of Leeds, Medical Education Unit, Level 7 Worsley Building, Leeds LS2 9NL, United Kingdom)

Background: Gynaecology teaching associates (GTAs) are women who teach pelvic examination while themselves being examined. In hospitals with a large ethnic minority population, students may have difficulty in consent for pelvic examinations. This study explored views of GTAs, students and staff on teaching of intimate examinations by healthy women, including social, religious and cultural influences that affect learning.

Summary of work: GTAs are well established at King’s College Medical School; Leeds Medical School does not use GTAs and rotates one-third of their students to Bradford during their gynaecology placements. The study employed focus groups, for students and faculty and semi-structured interviews for GTAs. Thematic content analysis was applied and various themes emerged from the data.

Summary of results: All groups perceived GTAs to have a valuable role in medical training. Differences in learning experiences due to cultural, religious and gender issues were discussed.

Conclusions: GTAs have a valuable role in medical training. However, reservations were expressed about the possible impact on the GTA’s own well-being.

Take-home message: The findings from this study will develop understanding on how intimate examinations may be taught and serve as a template for involving healthy people to teach clinical skills in medical education.

3I/SC3 Warwick Clinical Skills: a multi-layered interactive video tutorial
Vinod Patel, John Morrissey*, Stephen Brydges*, Jane Kidd (Warwick Medical School, Gibbet Hill Road, Coventry CV4 7AL, United Kingdom)

Background: Video tutorials are a well-established instrument for the teaching of clinical skills. However, in their traditional form they allow only minimal control. The perspective is either fly-on-the-wall or an expert commentary. It is difficult to pitch the commentary at an appropriate level for students in different years. The video must reflect local practice and be tightly linked to assessment.

Summary of work: We filmed a set of twenty videos of clinical examinations and histories with students contributing as actors and in critical review of the draft material. The videos can be used in several modes: fly-on-the-wall; alternative expert commentaries; caption overlays linked to the scripts used for teaching; cued questions to test understanding of what is happening on screen; and a clinical footnotes facility using cued images and audio files. Evaluation was by online questionnaires and student tracking.

Conclusions: The resource is widely used and appreciated. The next development will allow students to record their own consultations and post these for review. There is a need for a parallel set of clinical procedures videos using the same design.

Take-home messages: Students are very appreciative of bespoke products and of being fully engaged in the production process.

3I/SC4 Teaching physical examination with clinical reasoning: a trial of hypothesis-driven approach
Hiroshi Nishigori*, Roko Masuda, Makoto Kikukawa, Atsushi Kawashima, Junji Otaki, Rachel Yudkowsky, Georges Bordage (International Research Center for Medical Education, Tokyo University, 7-3-1, Hongo, Bunkyo-ku, Tokyo 113-0033, Japan)

Background: For medical students to learn physical examination, a common teaching method adopted in many medical schools is first to teach about 150 or so manoeuvres of each examination. Although students can master each of the examination skills through this learning process, it is not uncommon for them to have dissociation between performing manoeuvres and ascribing meaning to them in order to sort out a diagnosis.

Summary of work: The University of Bristol is in a unique position to be able to analyse the impact of training on medical education through assignments as it has had more than 500 participants to date and collects over 300 reflective assignments annually from participants on a Teaching and Learning for Health Professionals programme. A stratified random ten percent sample (200) of all assignments from the last 6 years are being analysed. In addition, 14 participants have been interviewed to obtain their perceptions of the impact of the course.

Conclusions: Participants report benefits in terms of better planning, confidence, organisational change, improved evaluation and feedback, trying new things and designs and learner centred education.

Take-home messages: The session will discuss the results and the methodology developed for thematic analysis. This methodology could be applied in various other settings to collate and disseminate reports from innovations.
3J/SC1

On becoming a highly efficient tutor: conclusion from three year research

Gin-Hong Lee*, Yu-Hua Lin, Chao-Shune Lin, Kuo-Eng Chow (Department of Clinical Psychology College of Medicine FU JEN Catholic University, 510 Chung Cheng Rd, Hsinchuang, Taipei County, Hsinchuang 24205, Taiwan)

**Background:** Due to methodological limitation, the literature scarcely delineates the PBL tutor’s internal thinking process and actual performance. This series of research aim at deeper understanding of how experienced tutors carry out their facilitating roles during the PBL process.

**Summary of work:** Guided by a cognitive psychology theoretical framework, this project adopted an innovative research method - Interpersonal Process Recall. During a three-year research, 8 experienced tutors were included, 40 valid tutorial sessions among 10 tutorial groups were videotaped, from which, 648 meaningful episodes were identified and transcribed. All tutors received in depth interview via watching video with interviewer respectively. Systematic qualitative analysis was undertaken according to research purposes.

**Summary of results:** The result put forward rich materials as to the timing of the tutors’ decision to make an intervention, the reasoning and beliefs that affect the tutors’ employment of certain intervention skills, and the specific skills that were employed for facilitating group discussion and group dynamics.

**Conclusions:** It seems that expert tutors are able to detect and make the best of the intervention opportunities through the use of versatile skills and strategies, which may be irreplaceable by non-expert tutors.

**Take-home messages:** What are the factors that influence the tutor’s cognition and his/her intervention? How to define an optimal intervention under certain context from students’ and tutors’ perspectives?

3J/SC2

PBL graduates assess their undergraduate medical education 6 years after graduation through interviews

Simon Wattmough*, David Taylor, Helen O’Sullivan (University of Liverpool, School of Medical Education, 4th floor Cedar House, Ashton Street, Liverpool L69 3GE, United Kingdom)

**Background:** In 1996 The University of Liverpool reformed its medical course from a traditional lecture-based course to an integrated PBL curriculum. A project has been underway since 2000 to evaluate this change.

**Summary of work:** This paper will summarise 25 interviews which took place with graduates in 2007 from the first cohort of the PBL curriculum who graduated in 2001 asking them to evaluate their undergraduate course.

**Summary of results/Conclusions:** Most learning for suturing takes place during unsupervised practice or during actual clinical procedures. To better support training of this fundamental skill, we developed a needle driver with embedded microelectromechanical sensors for tracking instrument motion. A unique feature of our approach is the use of digital video recordings, synchronized with the sensor signals, to parse surgical procedures into a series of actions based on task analysis.

**Summary of work:** We examined needle driver orientation and the timing of subtasks for indicators of performance variability and tissue trauma. Two surgeons and one novice performed 10 trials of completing a single suture with forceps in simulated tissue. Performance measures included start angle, degree of angular rotation, and stitch time.

**Summary of results/Conclusions:** While the novice showed much greater variability, each subject had a unique profile across these measures, suggesting that these sensors could be used to discern performance differences among trainees. We envision the parsed video and motion tracking signals as assessment and formative process feedback for needed individualized coaching.

**Take-home messages:** Using advanced lightweight miniature technology, we can now measure directly exactly how experts perform technical procedures, and are starting to develop self-guided tools for training these skills based on motor learning theory.

3J/SC5

Integrating objective motion sensor data with video in the characterization of manual skill in open suturing

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**Background:** While the novice showed much greater variability, each subject had a unique profile across these measures, suggesting that these sensors could be used to discern performance differences among trainees. We envision the parsed video and motion tracking signals as assessment and formative process feedback for needed individualized coaching.

**Take-home messages:** Using advanced lightweight miniature technology, we can now measure directly exactly how experts perform technical procedures, and are starting to develop self-guided tools for training these skills based on motor learning theory.
3J/SC3
The reliability and validity of the attitude scale towards problem based learning
S Turan*, Ö Demirel (Hacettepe University Faculty of Medicine, Hacettepe University Faculty of Medicine, Department of Medical Education and Informatics, Sihhiye, Ankara 06100, Turkey)

Background: In this study, the aim was to develop a scale to determine the attitudes of students towards problem based learning.

Summary of work: Data were gathered from two groups of students; the first group comprised 761 students from four medical schools and the second group comprised 810 students from one medical school. In the study, item-total correlation and difference of lower-upper group means based item analysis technique, t test, Kruskal Wallis variation analysis as well as factor analysis was used and Cronbach alpha coefficient was calculated.

Summary of results: The reliability of the scale was found to be high (alpha= 0.95). In addition, the scale's ability to distinguish students with different attitudes was found to be statistically significant (p<0.000). In factor analysis of both studies, positive and negative items of the scale were found to assemble in two separate dimensions and to explain the major part (61.32% in the first study, 58.87% in the second study) of the scale's total variance.

Conclusions: The results of the study indicate that the scale has good psychometric properties.

3J/SC4
Students’ basic science perception in a conventional and a problem-based curriculum
F Koens*, C P M Van der Vleuten (VU University Medical Center, P.O. Box 7057, Department of Medical Education, BS 7, Room D-237, Amsterdam 1007 MB, Netherlands)

Background: How do students in a conventional and a problem-based medical curriculum perceive their basic sciences education? This study aimed at qualitatively investigating this issue.

Summary of work: Semi-structured interviews were held with a total of twenty 4th year students in a conventional curriculum and a problem-based curriculum in the Netherlands. Interviews were transcribed, coded and analyzed using AtlasTi.

Summary of results: Students in both curricula acknowledge the importance of basic sciences. In either curriculum, students began to gain more insight in the role and the usefulness of the basic sciences in medicine. Gradually, nearly automatically, in either curriculum, students seem to be able to grasp the conceptual coherence of the basic sciences. Motivation for studying the basic sciences may change from learning to pass the test to learning to understand it for practice. Assessment is of great importance to guide students. When students know that a certain topic is hardly asked for, students spend less time studying.

Conclusions: Despite the differences in education, students educated in a conventional and problem-based curriculum both perceive basic sciences as important for medicine. In addition, students in both curricula seem to grasp the conceptual coherence of the basic sciences.

Take-home messages: Students in different curricula acknowledge the importance of basic sciences.

3J/SC5
Relationship between teachers’ teaching approaches and students’ learning approaches in a PBL environment
Diana Dolmans*, Paul Ginsn and Ineke Wolthagen (University of Maastricht, Department of Educational Development and Research, Maastricht 6200 MD, Netherlands)

Background: Earlier studies demonstrated that, over time, PBL students adopt more deep and less surface approaches to learning. It has, however, not been investigated whether there is a relationship in PBL between teachers’ teaching approaches and students’ learning approaches. This study investigated this relationship in PBL.

Summary of work: The Approaches to Teaching Inventory, with two scales (student-focused and teacher-focused), was filled out by 30 PBL teachers of the Maastricht PBL curriculum. The students that were led by these teachers filled out the Study Process Questionnaire, with two scales (deep and surface). Both are validated instruments (scale 1-5).

Summary of results: The average teachers’ score on the student-focused approach was 3.98 (SD=0.36) and on the teacher-focused approach 3.11 (SD=0.65). The average score on the students’ deep approach was 3.48 (SD=0.20) and on the surface approach 2.34 (SD=0.17). The correlation between a group-average deep student approach and a student-focussed teacher approach was 0.25. The correlation between a group-average deep student approach and a teacher-focused approach was -0.24.

Conclusions: It can be concluded that the PBL teachers had a predominantly student-focused approach and the students a deep approach. A teacher-focused approach seemed to be positively related to a deep learning approach and negatively related to a surface learning approach.

Research in Medical Education Papers

3K
Teaching and learning

3K/RP1
Integrated Procedural Performance Instrument (IPPI) as a teaching tool: a randomized controlled trial
Carol-anne Moulton*, Roger Kneebone, Diana Tabak, Debra Nestel, Helen MacRae, Vicki LeBlanc (The Wilson Centre, University of Toronto, 200 Elizabeth St, Eaton Nth 1-565, MSG 2C4 Toronto, Ontario, Canada)

Research Question: The purpose of this study was to assess the effectiveness of the Integrated Procedural Performance Instrument (IPPI) as a teaching tool for communication and interpersonal skills to junior surgical residents.

Context: Communication and interpersonal skills are considered essential competencies for practicing physicians. Medical students and junior residents are required to combine these skills with technical skills daily on surgical and emergency wards. The challenge of dual- and multi-tasking is exaggerated with inexperience and can lead to inattention of one task in favor of the other. The integrated teaching of these skills is difficult and often neglected in surgical curricula, where each skill is usually taught and assessed in isolation.
The Integrated Procedural Performance Instrument (IPPI) is an innovative ‘instrument’ that coordinates the technical skill component with the communication and interpersonal skill component of clinical performance. This utilizes bench top models positioned to fully brief standardized patients (SP) to resemble realistic surgical clinical scenarios. Heightened communication challenges can be presented to the learner via the angry, blind or anxious patient in combination with various technical procedures (e.g., insertion of a urinary catheter, suturing of a skin lesion) to simulate real-life encounters. Videotaping the learner-SP interaction facilitates video-assisted formative feedback delivered by the trained SP. While this innovative combination has demonstrated validity as an assessment ‘tool’ for both technical and communication skills, its use as a teaching ‘tool’ has not yet been demonstrated in a randomized controlled trial.

Methods: Sixteen fourth year medical students and sixteen first year surgical residents participated in two videotaped IPPI stations (insertion of a urinary catheter in an ‘anxious’ patient; suturing task on an ‘intoxicated’ patient). All participants were then randomized to either the cohort receiving feedback or the control cohort without feedback. Participants in the feedback cohort then received structured individualized feedback from the trained SP while reviewing their videotaped performance. All participants then underwent two further IPPI stations (skin lesion removal on a ‘blind’ patient; fixation of a forearm fracture on an injured patient). The videotaped performances of the two interventions were then scored by two blinded independent raters using previously validated assessment tools: a checklist scale (assessing specific technical actions), a Global Rating Scale of performance (GRS) and a global communication scale (assessing empathy, coherence, verbal and non-verbal communication skills). We conducted a 2 x 4 mixed design analysis of variance with group (feedback vs. control) as a between subjects variable and cases as a repeated measure on the three performance measures.

Results: The feedback group performed significantly better on the communication scores following feedback compared with the control group (mean 19.2 vs 16.4/25, p<0.05). The two groups did not differ from each other on the communication scores on the two scenarios that took place before the feedback intervention. No difference in scores for the technical skills was demonstrated (checklist: feedback mean = 64% vs control =59%, p=0.40; global ratings: feedback mean = 16.5 vs. control = 15.6/25, p=0.37). Improvements in communication skills did not occur at the expense of the technical skills.

Conclusion: The IPPI has the potential to be a novel teaching tool that combines technical skills with communication and interpersonal skills to simulate clinical scenarios. Incorporating the IPPI into the core surgical curriculum can provide an interactive means of formative feedback and is shown to improve subsequent communication skills in clinically realistic scenarios, which may optimize the transfer of these skills to real practice.


3K/RP2

A testing effect demonstrated on skills learning

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Research Question: The purpose of this study was to examine if testing as a final activity in a skills-course increases retention of skills compared to spending an equal amount of time practicing.

Context: It is well established that testing knowledge increases knowledge retention compared to spending equal amount of time studying. Although some speculate that there might be a small effect on learning in testing skills, it has never been thoroughly investigated. The question is whether the testing-effect found in knowledge learning also applies to skills learning.

Methods: The skills-course used for studying the testing effect was a 4-hour mandatory course in cardio-pulmonary resuscitation developed for 7th term medical students. Students were taught in groups of six. The intervention-course included 3.5 hours skills-training plus 30 minutes of skills-testing. The control-course lasted 4 hours. The research project was initiated with a pilot-study (N=40) aimed at studying the learning outcome of the course and investigating the magnitude of the testing-effect, in order to do a power calculation for the main study. Skills were assessed on performance in a simulated scenario using a checklist. Total score from the skills-test was converted to a percentage and reported as mean (95% CI). Pilot-study results showed a large immediate learning outcome from the course, mean pre-test skills level 19.7 (CI 15.4 to 24.0) and mean post-test skills level 85.9 (CI 83.4 to 88.4). A retention-test two weeks later showed significantly higher skills-retention in the intervention-group mean 79.0 (CI 74.3 to 83.7) compared to the control-group mean 71.5 (CI 66.3 to 76.7), independent samples t-test, p=0.04. The effect size of the difference was 0.65, translating to a medium to large effect. The main study was randomized, controlled, and single-blinded. The minimum sample size calculation based on the pilot results showed that 43 subjects in each group would suffice to identify an effect size of 0.7 between the group means with a power of 90% and a significance level of 0.05.

Results: Of the invited students in the main study 81 (58%) chose to participate in the study. There was a significant difference between the retention-test score of the control-group (N=40), mean 73.3 (70.5 to 76.1), and the intervention group (N=41), mean 82.8 (79.4 to 86.2), p < 0.001. The effect size of the difference was 0.92, translating to a large effect size. There was no significant difference between the groups regarding confidence in achieved skills or course satisfaction. Results were compared using an independent sample t-test. The effect size estimate was calculated using Cohen’s d.

Discussion: Although results from this study indicate a substantial testing-effect applied to skills learning, we need additional studies regarding the generalisability of the results. Firstly, this implies reproducing the testing-effect on larger sample sizes and on a wider range of skills. Also, in order to ensure a lasting effect we need studies that have a larger time-span between intervention and retention test.

Conclusion: The significantly higher retention in the intervention group suggests that skills-testing has a significant impact on learning outcome.


3K/RP3

How do doctors learn responsibility? Understanding transitions in doctors’ work

Sue Klinminster*, Naomi Quinton, Trudie Roberts, Miriam Zukas (University of Leeds, Medical Education Unit and Lifelong Learning Institute, Leeds LS2 9NL, United Kingdom)

Research Question: This focussed exploratory study was designed to develop a methodology to address gaps in existing empirical evidence about the effects of transitions on medical performance. The research questions are: 1. How are transitions regulated, managed and monitored? 2. Does actual practice differ from the formal frameworks? 3. How do doctors understand and manage their own transitions? 4. How do other health professionals in the clinical team understand and manage these transitions?

Context: All doctors experience multiple transitions during both their training and subsequent careers. The links between transitions and medical performance have not been systematically investigated although relevant research includes that on adverse patient outcomes and assessment of underperformance. Transitions are associated with increased risk of untoward events in aviation, merchant shipping, fire fighting and nuclear power. Better understanding about transitions in medicine is therefore important. This project is funded by the ESRC, a UK research council (ESRC RES-153-25-0084).

Methods: The methodological approach was a ‘collective’ case study which facilitates both theory development and a deeper, multi-layered focus. We analysed regulatory and policy requirements relevant to transitions in order to understand the case study contexts (university teaching and district general hospitals) and then investigated a number of individual cases chosen for their variety using focussed interviews, observations and supplementary interviews. A significant feature of many transitions is increase in responsibility. Therefore, we investigated two points of transition where there are important changes in responsibility (i.e. from having no responsibility to significant responsibility) for two critical aspects of medical performance – prescribing and patient management. The first transition is the point at which clinical practice begins – the change from medical student to foundation training (F1). The second transition is the point at which doctors change from generalist to specialist clinical practice - the change from Senior House Officer to Specialist Registrar (SpR). All the participants were working in elderly medicine because this specialty involves complex patient care pathways and decision making. Concentrating on one speciality also facilitates making comparisons and reflects the case study approach.

Results: Overall findings illustrate many issues of relevance to analysis and understanding of doctors’ performance. This presentation will focus five examples chosen to demonstrate some of the gaps between observed and expected performance: Prescribing - protocols (for example, for antibiotics), close working with pharmacists and ‘shadowing’ seem to be mitigating at least some previously reported difficulties for newly qualified doctors. Local effects – major differences in experiences of transitions within very small geographical areas; Relationships with other doctors and healthcare professionals are key and can be observed to affect performance; The more senior a trainee the less ‘space’ they are given during a transition; ‘Informal’ uses of formal CPD/training time.

Conclusion: Understanding the links between transitions and medical performance requires both better empirical evidence and conceptual thinking. This project is developing a methodology and new conceptual understandings about transitions that will facilitate systematic research into the effects of transitions on medical performance and it will identify key issues for the development of tools to map the effects of transitions. This will enable us to develop understandings about how transitions can best be structured.

3K/RP4

A stronger and clearer perception of self: Women's experience of being professional patients in teaching the pelvic examination: a qualitative study

K Siwe*, B Wijma, C Bertero (Division of Gender and Medicine, Department of Clinical and Experimental Medicine, Faculty of Health Sciences, Linköping University, S-581 85 Linköping, Sweden)

Research Question: Professional patients (PP) are healthy, specially trained women who voluntarily instruct medical students how to perform a pelvic examination (PE) while themselves being examined. Except for the studies of Beckman 1988 and Kamemoto 2003, very little can be found in the literature about the experience of being a PP in this setting. As students learn effectively both how to carry through the technical parts of the PE and how to behave in a respectful way, we decided to explore also the PP’s private experiences of being instructors from the patient’s position.

Context: Thirteen women, active as PPs, age 37-62, were contacted by telephone, received information about the study and all consented to participate. Six of the women were nurses, three teachers, two trained social workers, one occupational therapist and one secretary. Individual in-depth interviews were conducted and audio taped at a place of the informants’ choice.

Methods: The transcribed data were analysed with an interpretive phenomenological approach (Heidegger): ‘Meaning units’, which are data concerning the ‘lived experience’ as a PP were listed for each informant and grouped into five themes. The statements under each theme were described in a common description and from these a major theme, the essence, was constructed.

Results: Five themes were identified: ‘embodied knowledge’, ‘promoting a proper approach’, ‘redrawing private boundaries’, ‘feeling confident’ and ‘doing something meaningful’. The essence ‘experience of stronger and clearer perception of self’ emerged from the themes as the lived experience of the women who are PPs. The women expressed how the active participation as a PP had positively impacted their lives. The transition from being an uninformed patient to a knowledgeable woman was a rewarding process over time. Their gradually enhanced knowledge and bodily awareness helped them affirm their femininity and accept their bodies as fine and valuable, promoting greater self-confidence. When the PP serves as personal coach, the role represents a significant shift in the power balance in the environment where medical students learn to undertake examinations; the PP is the teacher and the student is a pupil. The PPs described the examination situation as special and not natural. To be able to perform they had to redraw their private boundaries and mentally transform the examination into a learning situation. Based on their own previous experiences in the examination chair the PPs purposely used interactive verbal and bodily feedback to enhance the students’ awareness of suitable behaviour and adequate attitudes. By being relaxed and showing trust the PPs created a safe and permissive learning environment, factors that have been shown to relieve students’ anxiety. The PPs experienced emotional security and trust within the group of PPs, and valuable, promoting greater self-confidence. When the PP serves as personal coach, the role represents a significant shift in the power balance in the environment where medical students learn to undertake examinations; the PP is the teacher and the student is a pupil. The PPs described the examination situation as special and not natural. To be able to perform they had to redraw their private boundaries and mentally transform the examination into a learning situation. Based on their own previous experiences in the examination chair the PPs purposely used interactive verbal and bodily feedback to enhance the students’ awareness of suitable behaviour and adequate attitudes. By being relaxed and showing trust the PPs created a safe and permissive learning environment, factors that have been shown to relieve students’ anxiety. The PPs experienced emotional security and trust within the group of PPs, promoting personal development. This led to a fundamental increase in trust in themselves and in their understanding of their self as a woman – a stronger and clearer self.
3L/SC1

Male and female students and graduate perceptions and experiences of the practice of Medicine: Preliminary findings from the United Arab Emirates and South Africa

Michelle McLean*, Susan B Higgins-Opitz, Jacqueline van Wyk, Kogie Moodley, Soonmarain S Naidoo (UAEU, FMHS, Medical Education, PO Box 17666, Al Ain 0000, United Arab Emirates)

Background: Much has been written about “feminisation” and the future of the medical profession. It is therefore important to understand male and female students’ and graduates’ experiences of the practice of medicine within their cultural context.

Summary of work: In this qualitative study being conducted at the Faculty of Medicine and Health Sciences, United Arab Emirates (UAE) and the Nelson R. Mandela School of Medicine, South Africa, final year male and female medical students and graduates are sharing their learning experiences regarding the opportunities and obstacles of gender, culture and religion on their chosen careers. We hope to track final year clerks into their internship and post-graduate studies.

Summary of results:
We hope to track final year clerks into their internship and post-graduate studies.

Conclusions: Interviews to date have provided rich data on the experiences, difficulties and aspirations of male and female medical students in two different cultures. This research is providing us with valuable insight into their “lived” curriculum.

Take-home message: Our preliminary results suggest that gender, cultural and even religious issues may impact on students’ experiential learning, which may influence how they ultimately practice medicine.

3L/SC2

Emotional Intelligence in medical students; does it correlate with selection measures?

Sandra Carr* (University of Western Australia, 35 Stirling Hwy, Crawley, Perth 6009, Australia)

Background: Emotional Intelligence (EI) refers to the capacity to reason with emotions to assist one's thinking. It involves the ability to monitor one's own and others' emotions, to discriminate among them and to use the information to guide thinking and actions. These are qualities recognized by some as being important in junior doctors. However, there is currently limited literature examining the relationships between EI and selection and performance of medical students.

Summary of work: This paper will present the EI scores of senior medical students and explore how this score relates to selection (UMAT and interview) measures. Recently, senior medical students in a 6 year undergraduate medical program were asked to complete the MSCEIT™ online assessment for Emotional Intelligence.

Summary of results: Their summary score plus scores for the four branches of EI (Identifying, Understanding, Using and Managing emotions) indicated these students demonstrate a diversity of emotional intelligence. Most demonstrated overall competence in EI (with scores around 100), but some students’ scores reflected the need for development in using and managing emotions with scores of between 60 and 80, while others demonstrated high performance in all branches (scores above 110). How these EI scores correlate with the students’ UMAT, interview scores and TER measures will be presented and potential means for developing EI explored.

3L/SC3

The role of the medical student and its effect on students’ patient-centredness

Rosie Illingworth*, Linda Gask and Anne Rogers (Manchester Medical School, Rusholme Academic Unit, 1st Floor Rusholme Health Centre, Walmer Street, Manchester M14 5 NP, United Kingdom)

Background: Doctors in the UK are encouraged to practise according to the tenets of the patient-centred approach, which informs the formal undergraduate curriculum. However, research evidence suggests that students become less patient-centred as they progress through medical school.

Summary of work: To discover what processes underlie this apparent paradox, research was undertaken with a purposive sample of twenty students, attending Manchester Medical School, in their clinical attachment years. The interviews followed a semi-structured format, were tape recorded and fully transcribed. The research used the principles of grounded theory analysis and draws upon sociological concepts.

Summary of results/Conclusions: The medical student role is difficult and students often perceive themselves as being without a role and ‘in the way’. Students progress through a series of disrupted relationships as they move between placements. The very culture of medicine undermines the efforts of UK medical schools to educate students in the practice of the patient-centred approach.

Take-home messages: Students need to be given real tasks to enable them to form real relationships. Teaching needs to be endorsed within the ‘real’ clinical environment and extend beyond the classroom. Medicine’s hidden curriculum needs to be confronted if the patient-centred approach is to become a reality.

Conclusion: Being a professional patient was rewarding and increased the women’s well being. They felt qualified, capable and sought-after. The incorporated knowledge and awareness about their body increased their self-esteem and enhanced their ability to interact with the students during learning sessions. This contributed to the feeling of being empowered and “growing as a woman in the examination chair”, findings that correspond well to the concept of empowerment in other studies. As the use of a teaching model with PPs seem to be of mutual benefit for both the students and the PPs, it is a “win-win” concept which can be recommended.

1Siwe K, (2007). Learning the pelvic examination. Linkoping University Medical Dissertations No. 103, Division of Gender and Medicine, Department of Clinical and Experimental Medicine, Faculty of Health Sciences, Linkoping University, Sweden http://urn.kb.se/resolve?urn=urn:nbn:se:lzudiva-10272

3L/SC4

Reflective learning and the Net Generation

John Sandars*, Matt Homer (The University of Leeds, Medical Education Unit, Level 7, Worsley Building, Leeds LS2 9NL, United Kingdom)

Background: There is often low engagement with text based reflective learning by undergraduate medical students, partly because they have grown up in a world dominated by technology and multimedia. A challenge for all medical educators is how to engage these Net Generation students in reflective learning.

Summary of work: We performed a survey of all second year undergraduate medical students to identify their learning preferences and we then correlated individual learning preferences with their scores in text based reflective assignments.

Summary of results: Students generally had high bodily-kinesthetic and inter-personal learning preferences, suggesting a preference for tasks that are active and creative within a group setting. However, students who highly scored in the text based reflective assignments had higher linguistic as well as inter-personal learning preferences, suggesting a preference for text based tasks and group work. These differences are all statistically significant.

Conclusion: The main learning preferences of Net Generation students are significantly different from the assessment requirements of the curriculum. Therefore, if educators wish to engage Net Generation students in reflective learning, there is a need to employ more innovative approaches for reflective learning, such as digital storytelling.

Take-home message: The learning preferences of Net Generation medical students are not currently aligned with the curriculum for reflective learning.

3L/SC5

Motivations to start medical school and their relations to approaches to learning

Jacqueline I Wilson* (The University of the West Indies, Centre for Medical Sciences Education, Faculty of Medical Sciences, St Augustine, Trinidad and Tobago)

Background: Examining motivations for studying medicine serves as post hoc validation of selection procedures and gives insight into individual differences in values and attitudes.

Summary of work: This cross-sectional study used questionnaires to examine relationships between strength of motivation for entering medical school (SMMS), career-related values and approaches to studying (ASSIST) and differences between these constructs based on sex, age and nationality. Standard multiple regression analysis was used to identify variables that impact upon motivation.

Summary of results: 116 first-year students, 74% female, 79% under age of 22 years, participated. SMMS scores revealed strong motivation to study medicine and were positively associated (p<.01) with prestige, deep and strategic approaches to learning and negatively associated (p<.01) with income, avoid role strain and surface approach to learning. Females feared failing more than males; older students were less concerned with prestige and role obligations (p<.05, eta squared >.04). Nearly 40% of the variance in motivation to study medicine could be explained by sex, values and approaches to learning. Separate multiple regression models fit the data better.

Conclusion: Predictors of motivation differed by approaches to studying and revealed two underlying goal structures: performance-avoidance and performance-approach.

Take-home message: Interpersonal and intrapersonal reasons co-exist as motivators for studying medicine.

3L/SC6

Teamwork and collaboration in the undergraduate medical curriculum

Vincent H Dolfing*, Rahana Parbhudayal, Minke Hartman, Paul de Roos (European Medical Students’ Association, c/o CPME Standing Committee of European Doctors, Rue Guimard 15, Brussels 1040, Netherlands)

Background: Collaboration and teamwork are essential ingredients of working in Healthcare. The practical assignments and group work taught in the undergraduate curriculum are limited in complexity compared to the reality of the profession. 43 students with Orange shirts worked as a team at AMEE 2005 conference to provide hospitality and a low budget social programme. After this event we observed that many students grew significantly in their skills of teamwork and collaboration and students decided to try to turn this into a course.

Summary of work: We duplicated and improved our AMEE 2005 concept of student involvement for other large conference events and built a working relation with different partners. Recently we introduced thorough evaluation and 360 degree feedback to assess the learning experience. Furthermore: learning outcomes have been described.

Summary of results/Conclusion: Student satisfaction for the learning experience was a 100% (they would all wish to do it again). Highly motivated students, supportive event organisers, the faculty and European Medical Students Association network teamed up successfully to create this learning experience.

Take-home message: Students engaged in organisation of large events will improve their competencies in teamwork and collaboration.

This course model supports engagement into academic medicine and career orientation. It is fun!
3N/SC1
Measuring the quality of the clinical teacher: what do we look for?
C R M G Fluit*, S Bolhuis, M Wensing (University Medical Centre Nijmegen, 306 KOMO, Postbus 9101, Nijmegen 6500 HB, Netherlands)

Background: The quality of clinical teachers is crucial for educating doctors. Instruments that provide doctors with feedback on their teaching should cover the important aspects of clinical teaching. Numerous instruments are developed for this purpose. We reviewed published literature on reliability and validity of these instruments.

Summary of work: Based on relevant literature, characteristics of a good clinical teacher were described. These characteristics should be measured by an instrument. Electronic databases (Medline, ERIC, Psycinfo, Embase, BEI) were searched (1976-2007). Two researchers independently assessed this output. 179 out of 1544 abstracts were selected for further study. By applying predefined selection criteria 34 instruments were identified that evaluate clinical teachers, and scored on content, reliability and validity evidence.

Summary of results/Conclusions: Validity evidence was most often in the category of internal structure (factor analysis, internal consistency). Most instruments lack a clear theoretical base. Items were more often formulated on a conceptual level instead of concrete behaviours. No instrument covered all characteristics of a good clinical teacher.

Take-home messages: Due to validity limitations selective use of most instruments is not appropriate. Additional ways to evaluate quality of teaching should be examined. A new instrument will be developed covering more completely characteristics of a good clinical teacher.

3N/SC2
Residents’ perspectives on effective teaching: lessons from focus group discussions and qualitative data analysis
John B Kiesel, John B Bundrick, Thomas J Beckman* (Mayo Clinic, 200 First Street SW, Rochester, Minnesota 55905, United States)

Background: Adult learning theory states that successful teachers favor collaborative learning. This idea is reflected in previous qualitative studies that did not use focus groups. We used focus group discussions to explore residents’ perspectives on effective clinical teaching and determine whether junior and senior residents have different viewpoints.

Summary of work: Focus groups with medicine residents were conducted in 2007. Eleven of 45 potential residents participated. Group facilitators performed semi-structured interviews by soliciting residents’ reflections on established teaching domains: interpersonal, clinical-teaching and efficiency. Transcribed documents were coded by independent reviewers. Final themes were determined by consensus.

Summary of results: Leading themes were “kindness and sensitivity” and “personality and style.” Junior residents were sensitive to faculty using harsh tones of voice. Senior residents respected faculty who were humble, conversational, and allowed residents to direct teaching encounters. Surprisingly, all residents conveyed hidden insecurity about having autonomy over sick and complex patients.

Conclusions: Residents expressed that effective learning requires grounded teacher-learner relationships. Juniors were very sensitive to brusque treatment, whereas seniors appreciated collaborative learning and observing faculty role models. These findings support adult learning theory and previous factor analytic studies. However, this qualitative research provided insights that could never be gleaned from assessment scores alone.

3N/SC3
Social skills of medical teachers: do we need to take them into account?
S Kukolja-Taradi*, M Vrcic-Keglevic, M Taradi, D Anticevic, M Lovric-Bencic (Department of Physiology, Medical School, University of Zagreb, Croatian Association of Medical Education, Zagreb, Croatia)

Background: Social skills can be defined as a set of social behaviors that can produce a favorable effect in another person, in the case of medical education, changes of learner’s behavior. As educational psychologists say, social skills of teachers are very important.

Summary of work: We conducted a small research study to see how socially skillful/competent are teachers in two Croatian medical schools, Rijeka and Zagreb. It was a 16-items, 5-point Likert scale questionnaire (minimum 16, maximum 80 points). The items measured social skills such as: persistence, certainty and self-confidence, approval, emphasis, empathy, cooperation and coordination, and capacity of caring for and adaptability to the person or situation.

Summary of results: Fifty teachers participated, 29 from Rijeka, 22 male, 41.7 average age, 27 clinical, 16 preclinical and 6 public health and primary care. They exhibited rather high level of social skills (mean = 61.7 ± 7.2). But we identified 3 teachers with less than 48 and 3 less than 52 points, which could be estimated as poor social skills. It is interesting that 10 teachers did not show any empathy.

Conclusion: Although the questionnaire should be evaluated and standardized, the question still remains: Do we need to evaluate/ work on the improvement of social skills of medical teachers?
30 Assessing the CanMEDS Physician Competencies: a CanMEDS introductory workshop

Jason R Frank (Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, ON K1S 5N8, Canada)

This workshop will provide a forum for identifying and adapting tools for competency based assessment, using the CanMEDS approach. Through a series of hands-on exercises, facilitated discussions, and using an exclusive package of materials, participants will identify tools and approaches most useful for assessing the competence of physicians in their context.

Who should attend: Those new to competency-based education or who are planning to implement a new framework will find this particularly useful.

Level of workshop: Beginner to Intermediate.
Workshop

3P Debriefing essentials

Walter Eppich*, Peter Dieckmann*, Marcus Rall* (Northwestern University Feinberg School of Medicine, Children's Memorial Hospital, Division of Pediatric Emergency Medicine, , Chicago 60614, United States)

Background: Increasingly, medical educators are integrating simulation-based education (SBE) strategies into training curricula across the continuum of undergraduate, graduate, and post-graduate medical education. Facilitated debriefings are an essential component of the reflective process that maximizes meaningful learning from medical simulations. Specifically, SBE can be used to highlight problems with teamwork and communication skills during acute medical emergencies. Crisis resource management (CRM) encompasses these skills and behaviours and is often a particular focus during debriefing sessions. In this workshop, we will discuss and practice approaches to debriefing with special emphasis on CRM principles.

Intended outcomes: After this session, participants will be able to: • Briefly discuss the theoretical constructs underlying debriefing exercises; • Describe key principles of crisis resource management to improve teamwork and communication; • Outline a structure for a debriefing session; • Discuss specific facilitation techniques to maximize learner engagement during debriefings.

Structure: This interactive session will incorporate multiple educational methods to deliver and reinforce the educational content, including brief theoretical inputs and an emphasis on small group exercises using videos and illustrative games. Participants will have opportunities to engage in deliberate practice of debriefing skills.

Level of workshop: Beginner/intermediate.

Workshop

3Q Validity theory for assessment in medical education

Melissa J Margolis*, Brian E Clauser* (National Board of Medical Examiners, 3750 Market Street, Philadelphia 19104, United States)

Background: A recent reconceptualization of validity (Kane, 2006) has led to viewing the validation process as a structured argument in support of the intended interpretations that will be made based on test scores. Development of a validity argument requires constructing a chain of evidence leading from the collection of examinee performance data to interpretations and decisions that are made based on test results.

Intended outcomes: Participants will learn the tools they need to develop a structured validity argument for their assessments.

Structure: The workshop will provide a brief history of the theory and practice of establishing test validity and introduce the concept of validity as a structured argument. Presenters will solicit examples of assessments that are of interest to participants and model the process of planning and evaluating the validity argument for these examples.

Who should attend: This workshop will be of interest to anyone involved with the assessment of medical students or graduates. Both administrators and faculty will benefit from an understanding of the mechanisms involved in examining the validity of inferences made based on test scores.

Level of workshop: Beginner - The workshop will be accessible to beginners but also will provide valuable insights to more experienced evaluators.

Workshop

3R "That was unprofessional!" Strategies for giving effective feedback

Reena Karani, Karen Mann, Emily Chai, Audrey Chun, David Thomas, Nisha Rughwani, Sara Bradley, 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 around the world. As educators continue to define what constitutes 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 educators. This interactive workshop is designed for an international audience of educators interested in further developing their feedback skills about professionalism.

Intended outcomes: By the end of the session, participants will 1) adapt the language and elements of feedback techniques shown to be effective from the literature to professionalism; 2) practice delivering professionalism feedback to colleagues and students using designed real-life cases; 3) reflect upon their own experiences, develop practical skills for and identify pitfalls in challenging situations, and 4) share strategies for providing effective feedback across different disciplines and professional levels and discuss factors that affect how feedback is received.

Structure: We will use a variety of interactive instructional methods including small group discussion and hands on practice during this workshop.

Who should attend/level of workshop: It is intended for intermediate level educators with some prior experience in delivering feedback.
**Workshop 3S**  
**A practical guide to scholarship as a medical educator: a workshop for and by the Young Medical Educators Group**

Soren Huwendiek*, Stewart Mennin*, Regina Petroni Mennin*, Monica van de Ridder* (Children's Hospital Heidelberg, Department of General Pediatrics, INF 153, Heidelberg D-69120, Germany)

**Background:** Documentation of evidence of scholarship in education is essential support for career advancement. Recent publications have outlined specific approaches to building educational portfolios based on principles of scholarship. This workshop will facilitate the development by young educators of a portfolio built around scholarship in education and a scholarly approach to teaching.

**Objectives/intended outcomes:** At the end of the workshop participants will be able to: (1) identify principles and practices of scholarship in medical education; (2) apply these principles and practices to their own careers and portfolio development; (3) Build a bibliography and other resources with a network of colleagues with mutual interests.

**Format and content:** After a brief introduction to educational scholarship, participants will begin to apply principles to their own career advancement with an opportunity to develop their own concepts and questions and discuss them with other participants and facilitators. It is recommended to prepare for this workshop by reading the following two articles: (1) Simpson D, et al. Advancing educators and education by defining the components and evidence of educational scholarship. Med Educ 2007;41:1002-9. (2) Morahan PS, Fleetwood J. The double helix of activity and scholarship: building a medical education career with limited resources. Med Educ 2008;42:34-44.

**Intended audience:** Young medical educators interested in a career in medical education and experienced medical educators interested in sharing their experience in medical education.

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**Workshop 3T**  
**Medical education databases**

M Brownell Anderson1*, John J Norcini2* (*Association of American Medical Colleges, 2450 N Street, NW, Washington DC 20037, United States; 2FAIMER, 3624 Market Street, 4th Floor, Philadelphia 19104, United States)

**Background:** Globalization and the internet present opportunities for medical schools around the world to share information about their educational programs. Sharing this information facilitates education, assessment, quality improvement, regulation, and student-faculty exchange. Four databases will be described: International Medical Education Directory, Directory of International Opportunities, Directory of Organizations that Recognize/Accredit Medical Schools, and the Curriculum Directory.

**Intended outcomes:** Participants will: explore the information contained in the databases and consider uses for each; consider alternate sources of information for the databases; consider ways they can contribute to the information available in each database.  

**Structure:** (20 min) Overview of each database; (50 min) Working in groups of 3-4 with case studies, participants will use the information in the databases to consider issues such as 1) searching for available postings for students at international medical schools, 2) understanding the structure of curricula at various medical schools, and 3) comparing the characteristics of the educational programs of medical schools around the globe; (20 min) Groups report back and general discussion of databases.

**Who should attend:** Those interested in using databases to share information about their educational programs and discovering information about other schools' programs.

**Level of workshop:** Beginner and intermediate.

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**Workshop 3U**  
**Exploring conflict resolution in medical education**

Elza Mylona (Stony Brook School of Medicine, USA), Norma Saks (Robert Wood Johnson Medical School, USA), Simon Gregory (Centre for Postgraduate Medical Education – South East Midlands Healthcare Workforce Deanery, Leicester UK)

**Background:** Diversity in an institution is considered the foundation of innovation, growth and learning. At the same time incompatible goals, values, needs and expectations become a source of tension and conflict. Conflict is a state of mind characterized by indecisiveness, uncertainty, dilemma, and anxiety. Conflict in an organization is inevitable. It could cause constructive, destructive or mixed consequences depending on the methodology of how it is managed. Poorly managed conflict adversely affects human relationships, morale, efficiency and creativity. The ability to deal constructively with conflict is considered an essential characteristic of a competent leader.

**Workshop objectives and intended outcomes:** At the end of the workshop participants will be able to: Explore the dynamics of conflict in organizations; Recognize the role of communication as both a barrier and tool for conflict resolution; Identify one's own preferred style in dealing with conflict; Apply the tools for effective conflict discussions.

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**Workshop 3V**  
**Building multimodular case scenarios for various settings and learning formats**

Cristian Stefan*, Anca M Stefan* (Touro University College of Medicine, New Jersey, USA), Harumi Gomi-Yano* (Jichi Medical University, Tochigi, Japan)

**Background:** Appropriately used good case scenarios are crucial for the development and testing of clinical reasoning and decision-making skills. However, preparing them is often time-consuming and relies on interdisciplinary cooperation. Cases created for only one type of application have many limitations that sooner or later hinder the instructional process.

**Intended outcomes:** The intended outcome of this workshop is to understand and experiment with the design of multimodular case scenarios from simple to complex.
Multifaceted modules offer the flexibility of being rearranged and adapted to specific needs related to the level of the audience (i.e. undergraduate or postgraduate), instructional settings and multiple learning formats (i.e. small group discussions, self-directed instruction; or exercises involving simulation).

**Structure:** After a brief exposure to a few examples of building and expanding case scenarios according to various needs and settings, the participants will have the opportunity to work in small groups and creatively engage in the process of developing the blueprints for individual modules that will be then interconnected to form well-balanced case studies according to the learning objectives and the format of a learning activity of their choice.

**Intended audience:** Anyone interested in developing or using clinical cases and scenarios.

**Level of workshop:** Beginners to intermediate.

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**3W/P1**

**Differences in motivation between Millennials and Generation Xers**

Nicole J Borges*, R Stephen Manuel, Carol L Elam, Bonnie J Jones (Wright State University Boonshoft School of Medicine, 115 Medical Sciences Building, Academic Affairs, 3640 Colonel Glenn Highway, Dayton, OH 45435, United States)

**Background:** The field of human assessment is described as having three domains: ability, motive, and personality. Personality differences between Millennials and Generation Xers have been documented. While increased standards over time have required today's students to have stronger cognitive abilities in order to gain admission to medical school, motive is one domain that has not been explored between the generations. This study explored generational differences in medical students regarding motivation using the Thematic Apperception Test (TAT).

**Summary of work:** 426 students at one medical school (Generation X = 229, Millennials = 197) who matriculated in 1995 & 1996 (Generation X) or in 2004 & 2005 (Millennials) wrote a story after being shown two TAT picture cards. Student stories for each TAT card were scored for different aspects of motivation: Power, Affiliation, and Achievement.

**Summary of results:** An analysis of variance (p < .05) showed significant differences between Millennials and Generation Xers for Power on both TAT cards and for Affiliation and Achievement on one TAT card.

**Conclusion/Take-home message:** Differences in Power, Affiliation, and Achievement exist between Millennials and Generation X medical students. Generation Xers scored higher on the motive of Power, whereas Millennials scored higher on Affiliation and Achievement.

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**3W/P2**

**The Hannover Screening of Students’ Motivation for Studying Medicine (HSM)**

Volkhard Fischer*, Nina Seibicke, Volker Paulmann (Hannover Medical School (MHH), Carl-Neuberg-Str. 1, Hannover 30625, Germany)

Since 1999 Hannover Medical School (MHH) evaluates various aspects of teaching and learning effectiveness by means of standardised questionnaires. The Hannover Screening of Students Motivation for Studying (HSM) is one of the key elements of an integrated concept aiming at a comprehensive understanding of students’ decision-making process. The HSM therefore collects data on their expectations and thoughts in terms of a successful education in medicine and professional orientation. The scale-based questions – partly self-made, partly developed in line with existing questionnaires – reveal the respective principles, affinities and motivations thereby helping us to meet educational needs more effectively. The questionnaire is handed out every two years to trace each student in his/her studying progress. Recently, the MHH switched over to a modus of online-survey. The aim of this continuous interrogation is to document the change in students’ motivation and the appreciation of different elements of the curriculum. The presentation introduces the overall concept of the HSM on the basis of selected items. It demonstrates options and limits of the evaluation of study motivation in combination with the course evaluation of the same students.

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**3W/P3**

**Medical education support in extracurricular activities**

Ronnaphob Uaphanthasath* (Department of Family Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand)

A higher education environment should foster both professional and personal development. One of the characteristics of a positive academic environment from the student’s view is to encourage students to engage in extracurricular, volunteer, cultural, and athletic activities. Extracurricular activities are valued by students and can “make a difference” in the overall experience of their studies. It is also of vital importance that medical students should learn to become “team members” and effective communicators/collaborators with their peers and allied health professionals. Participation in student organization, unions and associations provides the platform and forum for the expression and development of such initiatives, and should be encouraged. Local, national and international student associations will influence certain qualities necessary for those individuals who will eventually become leaders in the profession. In conclusion, extracurricular activities can provide opportunities for medical students to develop social, intellectual, and athletic skills.

Chiang Mai Medical School set the learning loop as a guide for medical students to practice in extracurricular activities. The goal of medical students is Achievement, Leadership, Loyalty, Ethics, Responsibility and Team Work. In 2007, there are 175 activities that include many projects in these fields such as Humanistic values, Little doctor, Health promotion, Ethics, Communication, Management, Sufficiency Economy, Academic, Recreation, Sport and Thai-northern culture.

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**3W/P4**

**What drives medical students for extra-curricular activities?**

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**Background:** Medical students usually spend much time in parallel, extra-curricular activities. However, little is known on the nature of such activities, as well as on student motivation to look for this kind of work.
3W/P6
Does gender affect medical students’ approach to learning?
E Nemr*, R Eid, S Hlaiss, S Abou-Jaoude, F Haddad, W Abou-Hamad (Saint-Joseph University Medical School, Ashrafieh, Beirut 165207, Lebanon)

**Background:** In determining the students’ approach to learning and studying, many western studies have shown a gender impact: female students tend to score more on the deep approach. The ALSI (Approaches to Learning and Studying Inventory), comprising 18 items and 5 factors: deep approach, surface approach, monitoring studying, organized studying and effort management, has been validated for use in medical students. This presentation aims to evaluate the gender impact on approaches to learning (as measured with the ALSI) in a different socio-cultural background (Lebanese students in the Middle East).

**Summary of work:** 113 medical students completed the ALSI questionnaire on a 5-point Likert scale, indicating the degree to which they felt that the statement was true of them. 53% were female students and 47% were male.

**Summary of results/Conclusions:** No difference was found between male and female students in relation to deep approach (p=0.12), surface approach (p=0.168), monitoring studying (p=0.4), organized studying/effort management (p=0.69).

**Take-home messages:** Although the students’ characteristics are important in determining the way they approach learning, our study reveals that the socio-cultural context may also play a role. Curriculum planners, wishing to encourage students to adopt the desired deep approaches, should take this into account.

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3W/P7
Homophobia and heterosexism in medical education: a qualitative study of undergraduate students, residents and faculty
B Frank*, S Razack* (Dalhousie University, Division of Medical Education, Clinical Research Centre (CRC), C104-5849 University Avenue, Halifax, NS B3H 4H9, Canada)

**Background:** Research indicates that medical students, residents, and faculty who identify as Lesbian Gay Bisexual Transgendered Intersexed (LBGTI) experience conditions of homophobia and heterosexism within medical education (Risdon, Cook & Willms, 2000). This presentation will deliver preliminary data from year one of a three year research project funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), entitled, Homophobia and Heterosexism in Medical Education: an institutional ethnography of one Canadian Medical School.

**Summary of work:** To date, in-depth interviews with seven medical undergraduate students, six residents and six faculty members have been conducted. This research intends to: i) Contribute to the theorizing of gender and sexuality within a professional education context; ii) Generate knowledge, providing an impetus for discussion which will contribute to a culture of diversity and a climate of acceptance; iii) Make visible heteronormativity as part of the gender regime in Medical Education.

**Conclusions:** Study requirements at both faculties seem to be not in accordance with optimal or healthy learning-physiologic conditions.

**Take-home messages:** Curricular planning in medical schools should take into account student motivation for parallel, extra-curricular activities, which seem to be driven by sound educational or academic reasons.

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3W/P8
An example for the formation of “voluntary professionalism” concept among medical students; social institution visits
F Aksu*, E Babar, Y Iyi, G Seydooglu, E Kara3, H Kurdak, Y Tasova, F Doran* (Cukurova University Medical Faculty, Medical Education1, Public Health2 and Family Medicine(4) Departments, Social Services and Child Protection Institution2, Turkey)

**Background:** This program aimed to inform second year medical faculty students about the social service institutions targeting disadvantaged groups in which they would rather work professionally or voluntarily in the future.
Choosing a career – what is important to medical students and newly qualified doctors?
Lorna Tapper-Jones, Hayley Prout*, Helen Houston, Helen Sweetland, John Alcolado, Melanie Jones, Lucy Satherley, Andrew Grant, Alison Fiondar, Carole Loveridge (Cardiff University, Department of Primary Care and Public Health, Centre for Health Sciences Research, School of Medicine, 3rd Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4XN, United Kingdom)

Background: During the clerkships, students observe many features of their future medical practice. Some will enhance its attractiveness, others may decrease it. The aim of our study was to investigate the influence of clerkships on the perceived attractiveness of the medical profession, as this may give insight into the motivational power of clinical education.

Summary of work: A written questionnaire was completed by 60 medical students in a Dutch medical school both at the start and the end of the two-year clerkship period. We asked them to indicate the attractiveness of 47 features of medical practice within four domains: the required knowledge and skills, the nature of medical-professional activities, the type of patients, contact & complaints, and the content of the daily work.

Summary of results: The perceived overall attractiveness (a total score) declined slightly during the clerkships. This was especially due to a decline in two domains: required knowledge and skills, and nature of medical-professional activities. Only the sum score of the category “nature of medical-professional practice” showed a significant decline in attractiveness between men and women during the clerkships. All other differences were not significant.

Conclusions: Clerkships seem not to stimulate the attractiveness of the medical profession. Concerns about career prospects and MTAS selection failure are commonplace.

Medical clerkships do not enhance the general attractiveness of the medical profession.

A P J Thomson*, S Price (Mid-Cheshire Hospitals NHS Trust, Leighton Hospital, Crewe CW1 4QJ, United Kingdom)

Background: The Specialty Training (ST) years of the Modernising Medical Careers programme commenced in 2007. Application to ST posts by Year 2 Foundation Trainees (FY2) raised a need for career counselling for this cohort. We developed a semi-structured career counselling workshop (CCW) to assist in making career decisions, for delivery to all FY2 trainees.

Aims: To determine whether FY2 doctors (n = 24) made a decision to take part in the program in the following years are also increased. The expressions “this program led me to think that I have chosen the right profession” and “in the future, I would consider working in this institution” are also graded very high.

Take-home messages: The program strengthened the communication between university and public institutions, as well as it contributed to the improvement of students’ social responsibility consciousness.

Trainees booked into one of 3 CCW and completed a SCI59 questionnaire before attending. The CCW explored in a small group setting trainees confidence in their career choice, knowledge of job description, competition ratios, and their plans to develop their portfolios to best match the person specification. Evaluation forms were completed before departure with a five-point scale for benefit.

Summary of results: In Autumn 2007 22 FY2 doctors attended 3 CCW. Evaluations were positive, with most rating it as excellent or good. Mean scores for the three sessions were 4.8, 4.6 and 4.5. Free text comments demonstrated appreciation of the small group format.

Conclusion: FY2 trainees gained by attendance at the CCW. The CCW is a helpful supplement to individual career counselling.

Conclusions: The impact of clerkship experiences have no influence on the perceived attractiveness of the medical profession.

M B M Soethout*, ThJ ten Cate, G van der Wal (VU University Medical Center, Department of Public and Occupational Health, Van der Boechorststraat 7, Amsterdam 1081 BT, Netherlands)

Background: The Specialty Training (ST) years of the Modernising Medical Careers programme commenced in 2007. Application to ST posts by Year 2 Foundation Trainees (FY2) raised a need for career counselling for this cohort. We developed a semi-structured career counselling workshop (CCW) to assist in making career decisions, for delivery to all FY2 trainees.

Aims: To determine whether FY2 doctors (n = 24 t this District General Hospital) gained knowledge and insight into their career choices from the CCW.

Summary of work: Trainees booked into one of 3 CCW and completed a SCI59 questionnaire before attending. The CCW explored in a small group setting trainees confidence in their career choice, knowledge of job description, competition ratios, and their plans to develop their portfolios to best match the person specification. Evaluation forms were completed before departure with a five-point scale for benefit.

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Conclusion: FY2 trainees gained by attendance at the CCW. The CCW is a helpful supplement to individual career counselling.

Career counselling workshops: a supplement to individual career advice

Lorna Tapper-Jones, Hayley Prout*, Helen Houston, Helen Sweetland, John Alcolado, Melanie Jones, Lucy Satherley, Andrew Grant, Alison Fiondar, Carole Loveridge (Cardiff University, Department of Primary Care and Public Health, Centre for Health Sciences Research, School of Medicine, 3rd Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4XN, United Kingdom)

Background: During the clerkships, students observe many features of their future medical practice. Some will enhance its attractiveness, others may decrease it. The aim of our study was to investigate the influence of clerkships on the perceived attractiveness of the medical profession, as this may give insight into the motivational power of clinical education.

Summary of work: This longitudinal study used self-administered questionnaires and focus group interviews with Cardiff students in years 3, 4 and 5 and then a year later with the same cohort. Preliminary results show that a variety of factors influence career choice: gender issues, enthusiasm for the subject, working conditions, role modelling and external pressures such as career prospects and MTAS selection failure. Career choices vary over time. A variety of information sources are used.

Conclusions: The importance of providing appropriate career information in the undergraduate curriculum is confirmed. Factors influencing career choice and preferred information sources should inform the process of professional careers education at undergraduate level.

Take-home messages: Medical students change their choice of career during their undergraduate career. They utilise a variety of sources to gain information but prefer personal contact. Concerns about career prospects and MTAS selection failure are commonplace.

Career counselling workshops: a supplement to individual career advice

A P J Thomson*, S Price (Mid-Cheshire Hospitals NHS Trust, Leighton Hospital, Crewe CW1 4QJ, United Kingdom)

Background: The Specialty Training (ST) years of the Modernising Medical Careers programme commenced in 2007. Application to ST posts by Year 2 Foundation Trainees (FY2) raised a need for career counselling for this cohort. We developed a semi-structured career counselling workshop (CCW) to assist in making career decisions, for delivery to all FY2 trainees.

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Conclusion: FY2 trainees gained by attendance at the CCW. The CCW is a helpful supplement to individual career counselling.
Retention of locally-trained medical graduates in Saskatchewan, Canada

Maureen Seguin*, Jody Glacken, Maria Mathews, Robert Card (The University of Saskatchewan College of Medicine, Royal University Hospital, 103 Hospital Drive, Saskatoon S7N 0W8, Canada)

Background: The Canadian province of Saskatchewan (SK) has consistently experienced net losses of physicians to other Canadian provinces. We explored factors predicting retention among medical graduates from the University of Saskatchewan (U of S).

Summary of work: We linked data from various databases to determine 2006 work locations of U of S medical graduates from 1957 to 1999. Chi square tests and multiple logistic regression were performed to identify predictor variables and odds ratios for two outcome variables: working in 1) Canada and 2) Saskatchewan. Predictor variables for 2006 work locations within Canada included being female (OR=1.8, 1.3-2.4), from Canada (OR=2.8, 1.6-4.8), completing post-graduate education in SK (OR=2.0, 1.5-2.6), and not specializing (OR=1.4, 1.1-1.9). Predictor variables for work locations within SK include having a rural background (OR=1.4, 1.1-1.8), completing post-graduate education in SK (OR=2.3, 1.8-3.0), and not specializing (OR=1.8, 1.4-2.2).

Conclusions: These results form the basis for interviews of graduates from various decades of training to enrich our understanding of physician loss from SK.

Take-home messages: This study identifies opportunities for physician retention strategies beginning at medical school entrance and during postgraduate medical training with implications for all jurisdictions with net losses of graduates.

Attitudes of Bristol medical students towards psychiatry: what is the impact of undergraduate psychiatric education?

Claire Archdall*, Tanya Atapattu*, Glyn Lewis, Liz Anderson, Chris Fear (Academic Unit of Psychiatry, University of Bristol, Cotham House, Cotham Hill, Bristol BS6 6JL, United Kingdom)

Background: Psychiatry as a specialty has recruitment difficulties. Research suggests that a favourable undergraduate experience in psychiatry can positively influence students’ attitudes and affect their future career intentions. It is thought these changes may be transient. This study examines both attitudinal change post attachment and looks for possible decay throughout the year.

Summary of work: Medical students at the University of Bristol undertake a psychiatric attachment in their third year. The current third year students have filled in a questionnaire at the beginning of their academic year and pre and post attachment in psychiatry. They will complete a final questionnaire at the end of the year. Students complete demographic details, career preferences and rank their views on 11 statements relating to psychiatry.

Summary of results: Response rates so far are over 80% and suggest favourable baseline attitudes to psychiatry and positive changes post attachment. Results will be analysed statistically to measure if these attitude changes are significant. We will determine if these changes persist or decay during the year and whether they influence career preferences. The association of demographic factors and the timing of the psychiatric attachment during the year will be examined. The findings will be useful in shaping future undergraduate psychiatric teaching.

Career planning for medical students

Sang-Hyun Kim*, Wootaek Jeon, Eunbae Yang (Yonsei University College of Medicine, 134 Sinchon-dong, Seodaemun-gu, Seoul 120-752, Republic of South Korea)

Background: Medical students’ values on the medical profession are changing as is healthcare in Korea. These internal and external factors cause medical students difficulty with their career choices.

Summary of work: We analyzed the intention of medical students’ career choices, perceptions of important factors in choosing a medical specialty, and educational programs, mentoring, and the counseling system at Yonsei medical school in Korea. The data were collected from four graduation questionnaires during 2005–2008.

Summary of results/Conclusions: Students opted for clinical medicine over other fields. While male students preferred to major in surgery, neurosurgery, and orthopedic surgery, female students preferred internal medicine, neurology, anesthesiology and pain medicine, and diagnostic radiology. Students perceived the most important factor in choosing a medical specialty to be one’s interests, concerns, values and aptitude. Mentor and role models did not influence their decisions. Career planning was evaluated well, especially educational programs such as self assessment, elective specialized courses, and conversations with older students. Medical students have high demands from career counseling and we should reorganize our system accordingly.

Take-home messages: Medical students’ career planning is a social problem. We need to address the phenomenon of avoidance of specific specialties because it influences national health.

Factors influencing career choices of medical students at Chulalongkorn University

S Haetanurak*, V Vajanopath, D Wangsaturaka (The Faculty of Medicine, Chulalongkorn University, 1873 Rama IV Road, Patumwan, Bangkok 10330, Thailand)

Background: Chulalongkorn Medical School is situated in the capital city of Thailand, which is also the hometown of most medical students. This research aimed to study career choices of medical students at Chulalongkorn University and the factors influencing their selection.

Summary of work: A self-administered questionnaire was sent to all Year 5 and Year 6 medical students at the end of 2007 academic year (N= 403). Descriptive statistics and Chi-square at the level of 5% were used for analysis.

Summary of results: The response rate was 69%. Most of the medical students (86.6%) preferred specialists as their career choices. Only 4.2% considered general practitioners. The three most important factors influencing their choices were: personal interests, good experiences when studying in that specialty, and job security.

Conclusion: When asked where they would like to practice medicine, 31.8% chose medical schools. There was no significant difference between “students who wished to be a faculty” and “students who did not” in their GPAX, having family members as medical doctors, having family members as health professionals, and family income.

Take-home message: Chulalongkorn students’ career choice was similar to students from other medical schools. However, it was exciting to see a considerable number of students would like to pursue their careers as medical teachers.
3W/P16

Career choices in a Brazilian University Hospital Residence Programme, 1996-2006

Carlos Gilberto Carlotti Junior*, Maria de Lourdes Veronese Rodrigues, Rui Celso Mamede, Jose Fernando Figueiredo, Marli Mamede, Luiz de Souza (Ribeirão Preto Medical School, University of São Paulo, Hospital da Clínicas da FMERP USP, Campus Universitário Ribeirão Preto, Ribeirão Preto 14048906, Brazil)

Background: The demand for medical areas of specialization depends on a series of factors; among them are included personal aptitude, work opportunities, remuneration levels, the necessary investment to acquire the equipment to the practice in the specialized area and controllable lifestyle.

Summary of work: Aiming to compare preferences of the candidates by areas of specialization in the years of 1996 and 2006 (a decade of considerable economic, social and technological changes) the careers chosen by medical students in the first two periods were analyzed, considering only areas of specialization that were kept available in the period, which was a total of 13. In this period of ten years, an increase in the preferences for Anesthesiology, Neurology and Psychiatry was observed. On the other hand, the choice for the following areas diminished: General Surgery, Gynecology and Obstetric, Ophthalmology, Orthopedic and Traumatology, Pediatric and Radiology, and stability for the Medical Clinic, Medical Genetics, Neurosurgery and Otolaryngology (p<0,001).

Conclusion: The choice for medical areas of specialization with controllable lifestyle and low financial investment increased in relation to one decade before.

Take-home messages: Controllable lifestyle is a new trend in choosing careers by Brazilian physicians, irrespectively of the gender.

3W/P17

Non-cognitive factors and preference for a group practice in the future among first year Mexican medical students

Adelina Alcorta-Garza*, Juan F González-G, Ana María Salinas, Francisco Rodríguez Lara, Silvia E Tavitas H, Santos Guzmán, Donato Saldivar R (Centro de Investigación en Educación Médica y Atención a la Salud (CIEMAS), Psychiatry Department, “José E. González” University Hospital, Autonomous University of Nuevo León (UANL), Monterrey, NL, Mexico)

Background: Physicians should work in a collaborative team. Medical schools need to know their students’ profile and their future preferences in order to give them help from being freshman.

Objective: We explored if preference for practicing in a group in the future differed by non-cognitive factors among first year Mexican medical students.

Summary of work: Study participants consisted of 4,209 first year matriculants at our School of Medicine UANL, Mexico. Psychosocial measures included Loneliness (score range 5-25), General Anxiety (score range 5-25), Self-esteem (score range 5-20), Extroversion (score range 5-20), Depression (score range 0-37) and Empathy (score range 20-100). Practice preference was answered on a 3-point Likert-type scale (1=strongly interested and 3=weakly interested). GLM univariate analysis was performed for comparing means as well as Tukey post-hoc tests for multiple comparisons.

Summary of results: Students strongly interested in a group practice registered more Extroversion and Empathy than those less strongly interested (15.3±2.6 vs. 14.8±2.8 and 77.8±10.9 vs. 76.4±11.1, respectively), and less Anxiety (12.6±3.7 vs. 13.3±3.6), Loneliness (9.2±3.4 vs. 10.4±3.9) and Depression (2.7±3.3 vs. 3.3±4.3); p≤.05. No differences were found for Self-esteem.

Conclusions: Non-cognitive factors such as Extroversion, Empathy, Anxiety, Loneliness and Depression affect the preference for practicing in a group in the future.

3W/P18

Do medical students and junior doctors value Careers Fairs?

Helen M Goodyear*, Michele Gadsby, David Wall (West Midlands Workforce Deanery, St Chad’s Court, 213 Hagley Road, Edgbaston, Birmingham B16 9RG, United Kingdom)

Background: Modernising Medical Careers (MMC) guidance advocates planned career events. There is a wealth of careers information available from websites, Royal Colleges, journals and hospital based events. Are careers fairs becoming an unjustifiable time consuming expense or do they offer additional insights into specialty training and how to apply for it?

Summary of work: A 12 item questionnaire was drawn up looking at who attended a Deanery careers fair and reasons for attendance, whether attendees felt better informed and the specialty stands they visited. 71 questionnaires were completed by 64 medical students in years 4/5 and 7 foundation year one doctors.

Summary of results: 90% (64/71) respondents felt that their objectives for attending the careers fair had been met and they knew more about MMC and specialty training. Paediatrics and general practice were the most popular specialty stands. The commonest reason for attendance was to find out more specialty information.

Conclusions: One to one conversations between specialists and students/trainees are much valued including advice on how to gain experience relevant to one’s first choice specialty.

Take-home message: Despite the wealth of careers information available from a variety of sources, careers fairs are still valued by junior doctors and medical students.

3W/P19

Alternative careers: motives for career shifts towards trade and industry and implications for medical curricula

D de Rooij*, S T T Hubers, P van Beukelen (Faculty of Veterinary Medicine, Yalelaan 1 P.O. Box 80163, Utrecht 3508 TD, Netherlands)

Background: A substantial number of (veterinary) health care professionals, both with and without clinical experience, choose to start a non-clinical career at one point. For these professionals, trade and industry offers a wide range of employment opportunities.

Summary of work: An online questionnaire instrument was sent to all Dutch veterinarians working in trade and industry. Included were questions about the subjects’ motives to work in trade and industry, the moment they make this decision and the fit between the curriculum and their current position.
Summary of results/Conclusions: There is no difference in motives between veterinarians with and without clinical experience. For women, several motives related to a balance between work and private are more important than for men to work in trade and industry. Respondents mentioned that especially management skills, communication and commercial skills should be part of the curriculum.

Take-home messages: More career-guidance embedded in the curriculum, could be of great value for students. More opportunities in respect to externships are recommended and there may be more attention and space for alternative careers and the (additional) skills needed.

3X/P1
Learning style categorized in Saraburi medical students
Chaturaporn Niemtun*, Chitpongse Sujjapongse (Medical Education Center, Saraburi Hospital, 18 Tedsaban 4 Rd, Pakpure, Muang District, Saraburi 18000, Thailand)

Background: The learning style of individual students is the new approach to cope with the problem in small group learning in PBL. This study examined the learning style of pre-clinical and clinical students in MEC.

Summary of work: The Index of Learning Styles (ILS) questionnaire was administered to a group of third and fourth-year medical students at MEC. ILS assesses preferences on a four dimensional (active vs. reflective, sensing vs. intuitive, visual vs. verbal, and sequential vs. global) learning style.

Summary of results/Conclusion: A total of 51 (85%) third and fourth-year medical students in the 2007 academic year participated in the study. The students preferred information being put in the form of pictures graphs or diagrams (visual learners). The visual is 72.5 percents t. The sensing learner (preferred sights, sounds or physical sensation) is 78 percent t. The active learner (like physical activity or discussion) is 96 percent. The global learner (holistic approach toward understanding) is 68 percent.

Take-home message: Taking the same learning style in one group make less problems. We need further study on the outcome in the future. We hope that this method will enhance effectiveness of the curriculum.

3X/P2
Factors affecting medical students’ emotional experience
Emma Pearson*, Chris Bundy, Nick Lown, Tim Dorman* (University of Manchester Medical School, Hope Hospital, Stott Lane, Salford, Manchester M6 8HD, United Kingdom)

Background: Situated Learning, Social Cognition, Work Motivation, Emotional Intelligence (EI) and Vygotsky’s Socio cultural theories all show learning as a dynamic interplay between learners, their behaviour, and the environment.

Summary of work: We showed how emotions have a central place in the dynamic interplay that is common to those theories.

Summary of results: • Emotion is integral to behaviour; • Different types of emotional experience have different effects on medical students’ attitudes and motivation and, • Intrapersonal and sociocultural factors modulate the interplay between individual learner and learning environment.

Summary of conclusions: This work provides a theoretical framework for research into emotional experience in medical education, key features of which are intrapersonal and sociocultural dimensions of learning.

Take-home messages: • Clinical learning has important affective and social dimensions; • Emotional experiences impact on doctors as well as their patients; • Examining individual responses to common emotional triggers could identify learners needing support; • Our current empirical work is exploring the respective roles of individual and environmental factors in the experience of emotion.

3X/P3
What’s new with Guglielmino’s Self-Directed Learning Readiness Scale (SDLRS) ?
MF Atacanlı*, F Ozyurda (Ankara University, School of Medicine, Medical Education and Informatics Department, Tip Fak, Cebeci Hastanesi, Tip Egitimi ve Bilisimi ad Cebeci, Ankara 06620, Turkey)

Background: One of the objectives of undergraduate medical education is to give guidance to the students concerning continuing self-education. Many of the investigations into self-directed learning (SDL) have used the SDLRS. The aim of the study is to determine the level of the students’ SDL readiness and to investigate the relationships between scores and some variables.

Summary of work: Turkish-SDLRS was given to 296 students and tested for reliability and validity. Secondly, with the data obtained from a stratified sample of 350 students, the total scores were measured and relationships with variables were investigated.

Conclusions: Cronbach a and Pearson correlation coefficient was calculated to be 0.93 and 0.83. Confirmatory factor analysis fit indices were found to be satisfactory. Students’ mean score was found to be 215.09±24.77 (middle level) and no statistical difference could be detected between class years. Students who frequently use a computer, who perform regular sports activity and who want to have an academic career, displayed significantly higher scores. Some personal characteristics (goal-oriented, disciplined, motivated) might be common and related with the higher level of readiness.

Take-home message: Increasing computer facilities seems to be supportive for the SDLR. Future research may explore the relationships with an in depth analysis.

3X/P4
Changes in learning styles of medical students: a 7-year longitudinal study
MBitrán*, D Zuñiga, N Pedrals, R Oliva, O Padilla, B Mena (Pontificia Universidad Católica de Chile, Alameda 340, of 206, Santiago 8320000, Chile)

Background: Learning Styles (LS) of 4 cohorts of medical students were studied along the 7-year undergraduate program.

Summary of work: LSs were determined at admission, at year 3 and 7. Complete follow-up of 200-entering cohort and a partial follow-up of cohorts 2000-2003 are presented.
Summary of results: In all cohorts, Assimilating learners predominated at admission (54%) and at year 3 (61%). By year 7, Converging had become the main style among males and Accommodating the most frequent among females. In terms of information processing, men changed the way they used information, from reflexive to active. Women shifted information-gathering strategies, from a predominantly abstract to a more concrete experiential form.

Conclusions: Medical students’ learning styles change in time; men become more active and females more concrete. These changes may represent an adaptation to the study program that evolves from a lecture-based teacher-centered, to a problem-based student-centered model.

Take-home message: Given these findings, it seems advisable to foster both in male and female medical students the acquisition of active and concrete learning skills.

3X/P5
The journey through SDL – the students’ view: a qualitative study
A Khaimook*, R Arora (CPIRD, Ministry of Public Health, Hatayai Hospital, 182 Rattakarn Road, Hatayai, Songkhla 90110, Thailand)

Background: In a PBL curriculum, Self Directed Learning (SDL) is an important component of the learning process. Indisputably, there are variations in how students define and articulate their learning needs in SDL.

Summary of work: We conducted a focus group with 12 students from 5 CPIRD medical schools across Thailand. Students’ perceptions of self learning in different study phases were explored. Data were analyzed according to grounded theory principle and investigator triangulation was done to validate the identified themes.

Summary of results: A clear description of an effective self learning emerged from the analysis. Teachers played an important role in the initial period both in pre-clinical and clinical years. It needs time to develop an independent self learning skill. Most students have to do self learning whether or not it was shown in the timetable. Patient care is the best motivator for self learning but only in the advanced phase.

Conclusions: Novice students can hardly “get the job done” in first place. Teachers have a tremendous effect on guidance before they can become independent “self-directed” learners.

Take-home messages: The most appropriate way of self learning might be to gradually shift from dependent “directed self” learning to independent “self directed” learning.

3X/P6
Learning approaches of medical students in Taiwan
K I Tsou1,2*, S L Cho1, Daniel M Y Sze1, RJ Chang1, M S Hsieh4, HC Wu5, CH Lin6 (1College of Medicine, Fu Jen Catholic University, Taipei, Taiwan; 2Department of Pediatrics, Cardinal Tien Hospital, No. 510 Chung Cheng Rd, Hsin Chuang city, No. 362 Chung Cheng Rd, Hsintien City, Taipei County 24205, Taiwan)

Background: To increase the effectiveness of learning, we should pay attention to the effect of students’ approach to learning.

Summary of results: The error variances of the four scores were equal across groups. First grade students (471) did not differ in DM, DS, SM and SS. Students with a bachelor or higher degree had higher scores in DS than high school leaver entry students. Male students had higher score in DS and SM. Data analysis of students from the first, third and fifth grade of one school showed that fifth grade students had lower scores in DS and higher scores in SM and SS than the first and third grade students.

Conclusions: Taiwan medical students have similar learning approaches in terms of motivation and strategy when they enter medical school. Demographic features have some influence on the deep strategy and superficial motivation. More mature students use more deep strategy. The learning approaches may change after medical students enter hospitals to learn mainly clinical medicine. RSQ 2F can discriminate Taiwan medical students of different demographic features and different learning environment. However, there is a need for longitudinal follow up of the changes in learning approaches after medical students enter their clinical years.

3X/P7
Preferred learning strategies of medical students with different hemisphericity and their academic achievement
Mehmet Ali Gülpınar*, Müniire Erden (Marmara University School of Medicine, Dept. of Medical Education Tibbiye, C. Haydarpasa, Istanbul 34668, Turkey)

Background: By the impact of a constructivist approach in education, learners’ properties such as hemisphericity and learning strategies have come into prominence and a learning environment compatible with learners’ properties have become important topics for investigation. In this context, the first aim of present study was to determine the relationship between medical students’ hemispheric preferences and learning strategies. Furthermore, the impact of the hemispheric preferences on their academic achievements was also investigated.

Summary of work: A total of 333 preclinical years medical students participated in this study; their hemispheric preferences and learning strategies were determined by Torrance and Taggart’s Human Information Processing Inventory and Vermunt’s Inventory of Learning Style. In order to compare academic achievements of students with different hemispheric tendency, their exam scores which were based on different types of learning environments were analyzed by MANOVA.

Summary of results: Considering hemisphericity, 51.8% of students had mixed, 29.6 % right, 11.3% left preference and 7.3% of them were integrated. Results showed that students having different hemisphericity significantly differed in their academic achievements with different cognitive processing and metacognitive regulatory strategies (p<0.05).

Conclusions: In conclusion, learning strategies may differ in certain aspects among students who have different hemisphericity and this may have an effect on academic achievements of students.
3X/P8

Intraosseous canulation: a comparison between peer-assisted and conventional teaching for 6th year medical students

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**Background:** Intraosseous canulation is an effective emergency procedure for physicians to assess venous line in pediatric advanced life support. Peer-assisted teaching enhances team-work, self-directed learning and professional development. The study was conducted to compare learning outcomes between peer-assisted and conventional teaching for intraosseous canulation.

**Objective:** To compare cardiopulmonary resuscitation (CPR) skills between medical students who take roles as an assessor and a practitioner.

**Summary of work:** The 6th year medical students, academic year 2007, were non-randomly selected into two groups: assessors (11 students) and practitioners (10 students). Both groups were part of the CPR team under supervision in prior rotations. However, the assessor group was trained to be assessors in the Emergency Department. Then, the OSCE score in resuscitation skill was compared between both groups. T-test was used for statistical analysis.

**Summary of results:** The 11 students as assessors and 10 students as practitioners had average scores of 65.58 and 59.20 respectively. There is no statistically significant difference between the two groups. But in subgroup analysis, the monitoring score of the assessor group is significantly higher than the practitioner group (11.17 vs 9.50, p < 0.05).

**Conclusion:** The role of assessor can improve resuscitation skills particularly in monitoring.

**Take-home message:** To be an assessor is to learn simultaneously.

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3X/P9

Constructive experience: a theoretical synthesis

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**Background:** There are many theories of education and learning and there does not appear to be one theoretical framework that can apply to all learning situations.

**Summary of work:** However, by combining elements of constructivist theory, scientific theory, experiential learning theory and humanistic theory a unified theory of ‘Constructive Experience’ can be derived. Implicit in constructivist theory is that meaning and understanding are built up in a process that depends on the specific knowledge foundations and cognitive operations of each individual and the learning activities they engage in. In constructing a cognitive model of the world, brains behave in a proto-scientific way assimilating experiences to theoretical frameworks and then adapting theoretical frameworks to experiences in a hypothetico-deductive process. In experiential learning theory ‘reflective observation’ is analogous to the inductive and assimilative mechanism and active experimentation to the deductive and accommodative mechanism of both constructivist learning and scientific discovery. At the centre of these learning processes lies a social being that is best described in the value-free terms of humanistic educational theory.

**Conclusions/Take-home message:** Combining these theoretical frameworks leads to a set of coherent educational principles which can be applied to a wide variety of teaching and learning situations in medical education.

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3X/P10

Student as an assessor: does it work?

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**Background:** Assessment of medical students’ clinical skills is an advantage for the practitioner. But how about the advantage for the assessor?

**Objective:** To compare cardiopulmonary resuscitation (CPR) skills between medical students who take roles as an assessor and a practitioner.

**Summary of work:** The 6th year medical students, academic year 2007, were non-randomly selected into two groups: assessors (11 students) and practitioners (10 students). Both groups were part of the CPR team under supervision in prior rotations. However, the assessor group was trained to be assessors in the Emergency Department. Then, the OSCE score in resuscitation skill was compared between both groups. T-test was used for statistical analysis.

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**Conclusion:** The role of assessor can improve resuscitation skills particularly in monitoring.

**Take-home message:** To be an assessor is to learn simultaneously.
Peer group teaching - who benefits?

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Background: Peer teaching takes many forms with everyone gaining different things from the same experience. This is illustrated very well in the Mock OSCE session organised by the F1 doctors for the final year medical students.

Summary of work: Towards the end of the final year attachment, the F1 doctors organised a mock OSCE session for the students. They recruited third year students to volunteer as patients for the communication skills stations. From their part, the F1 doctors had valuable lessons in organisation, crisis management, time management, co-ordination and techniques of giving and receiving feedback. The final year students gained from practice before their final exams. The third year students apart from gaining clinical knowledge, lessons in organisation, crisis management, time management, co-ordination and techniques of giving and receiving feedback. The third year students also gained from practice before their final exams.

Conclusions: Although learners answered they were prepared to assess their peers, evaluators were the most relevant source of variation of assessment scores.

Take-home message: Medical schools should encourage and prepare students to perform effective peer assessment.

Peer-assisted versus faculty staff-led skills lab training: a randomized controlled trial

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Background: While peer-assisted learning (PAL) is widely employed throughout medical education, its effectiveness for training technical procedures in skills laboratories has so far not been subject to investigation.

Summary of work: Volunteer third year medical students were randomly assigned to one of two groups which received regular skills training at our faculty from either cross-year peer tutors or experienced faculty staff. Following training, both groups were assessed using an OSCE and video-recorded. Two independent video-assessors scored the OSCEs using binary checklists and global ranking forms. A third student group was assessed prior to skills training and served as a control group. 89 students (aged 23.0±0.2 years, 41m/48f ) agreed to participate in the trial.

Summary of results: In the OSCE, PAL (58.1±1 binary points; 4.9±0.1 average global ranking points) and faculty staff-led groups (58.3±1; 4.7±0.1) scored significantly higher than the control group (33.3±1; 2.7±0.1, all p<0.0001). There was no significant difference between PAL and faculty-staff led groups (p=0.92 for binary checklists, p=0.11 for global rankings).

Take-home messages: PAL is a successful learning method for the training of technical procedures in a skills laboratory setting and is equally effective as the training provided by experienced faculty staff.
Student grand round
Beth Woolley*, Rachel Isba*, W Stephen Costigan, Richard Taylor, David Gore, Ged Byrne, Paul O’Neill (University of Manchester, ATR4 1st Floor ERC, University Hospital of South Manchester, Southmoor Road, Manchester M23 9LT, United Kingdom)

Background: For more than a century, Grand Rounds have been ubiquitous in continuing medical education. Tomorrow’s Doctors emphasises the role of doctor as educator, and it is therefore important that medical students be given the opportunity to develop appropriate teaching skills.

Summary of work: Student Grand Round (SGR) at the University Hospital of South Manchester was piloted in the 2006-7 academic year and is now a permanent feature of year 3 teaching. SGR runs weekly for year 3 students, with half of the year attending on alternate weeks. Each week two PBL groups of 8 students present and discuss an interesting case they have encountered. A questionnaire was developed alongside SGR to assess presentations and enable the audience to provide peer feedback. Initially this system was paper-based, but in February 2007 an electronic voting system (EVS) was launched. Each student receives a PRS Interwrite RF® keypad, and votes using this keypad following each presentation. At the end of the semester each PBL group is given a printed summary of the feedback they have received, for reflection and inclusion in their portfolio.

Conclusion: We will present the practicalities of setting up and running a weekly SGR and demonstrate how the EVS is used to generate feedback.

A randomised controlled trial of the effectiveness of near-peer teaching
Anshuman Sengupta*, Jeremy Rodrigues, Alana Mitchell, Kirsten Borthwick, Gareth Jarvis, Michael Quail, Lisa Anderson, Clare Kane, Christopher Kane, Mike Ford, Simon Maxwell (Royal Infirmary of Edinburgh, 51, Little France Crescent, Old Dalkeith Road, Edinburgh EH16 4SA, United Kingdom)

Background: Peer-assisted learning is popular and effective. In 2007, we launched a regional near-peer teaching scheme in which junior doctors taught final year medical students. The scheme was very well-received. Following suggestions raised at AMEE 2007, we have conducted a blinded, randomised controlled trial of the effectiveness of the teaching.

Summary of work: We sought University of Edinburgh ethical approval. Twenty final year students volunteered to participate. They were randomised either to receive a near-peer prescribing tutorial on left ventricular failure by a tutor from the scheme, or to receive no tutorial. All candidates then sat a ten-minute prescribing examination covering management of COPD exacerbation. The “no-tutorial” group then received the LVF tutorial for educational benefit. Papers were marked by two blinded assessors using a standardised mark scheme. The teaching resources, examination and mark scheme were reviewed by a Senior Lecturer in Clinical Pharmacology. Mean scores for the tutorial and no-tutorial groups were analysed.

Summary of results: Overall scores were not significantly different between groups (13.9 vs. 12.15, p=0.242). However, the tutorial group made significantly fewer dosing errors (mean 9 vs. 22, p=0.049).

Conclusions/Take-home messages: Near-peer teaching reduces prescribing errors by medical students, as well as being popular.

“Learning to Teach”: the impact of a tutor training symposium on near-peer teaching in Edinburgh
Jeremy Rodrigues*, Anshuman Sengupta, Simon Maxwell, Christopher Kane, Clare Kane, Michael Ross, Helen Cameron, Mike Ford (University of Edinburgh, Chancellor’s Building, Royal Infirmary of Edinburgh, 51, Little France Crescent, Edinburgh EH16 4SA, United Kingdom)

Background: Peer-led teaching is well established in Edinburgh. We developed a “near-peer” tutoring scheme led by newly-qualified Foundation doctors, aimed at helping medical students prepare for prescribing in examinations and clinical practice. In order to formalise preparation for FY doctors, we ran a tutor training symposium.

Summary of work: 29 tutors were recruited from all FY1s in Edinburgh in 2007-8, and all attended the symposium. A timetable was devised, incorporating interactive lectures and small group sessions, in conjunction with the University Medical Teaching Organisation. The focus was on teaching techniques, including specific sessions regarding prescribing. The tutors then had the opportunity to practise leading prescribing tutorials in supervised sessions. After the symposium, anonymised feedback was collected from attendees.

Summary of results: 100% of responses agreed or strongly agreed that the workshops and prescribing-specific sessions were helpful, that the sessions were interactive enough and that they felt more prepared to be tutors in the scheme as a result of the symposium. 80% agreed or strongly agreed that they would recommend the symposium to other tutors.

Conclusions/Take-home messages: Tutor training symposia can help to prepare and are popular with newly qualified junior doctors involved in near-peer teaching initiatives.

Mindfulness meditation and EQ test in medical students: a pilot study
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Background: EQ (emotional quotient) is an ability, capability, or skill to perceive, access, and manage the emotions of one’s self, of other, and of the group. Mindfulness meditation is the way to practice mind and emotions but there are no data about the EQ test. The objective of this study is to compare the EQ test in medical students before and after practising mindfulness meditation.

Summary of work: A prospective study of 9 fifth-year medical students studying in the Department of Medicine from 2 January to 3 February 2008. EQ tests were done before and after practising mindfulness meditation for 1 month.

Summary of results: EQ tests were evaluated in 3 aspects (good, smart, happiness). The mean EQ test score of medical students was 80% agreed or strongly agreed that they would recommend the symposium to other tutors.

Conclusions/Take-home messages: Mindfulness meditation is useful for medical students to improve their EQ, especially happiness aspect. Other aspects are not improved.
3Y/P1

‘What I want to gain from medical school’ – exploring the mind of clinical year students regarding their curriculum.

J Tang*, T McLeod, A G Perks (Nottingham University Hospitals, City Hospital Campus, Hucknall Road, Nottingham NG5 2PB, United Kingdom)

Background/Summary of work: This study analysed the feedback of surgical teaching from medical students in their second year of clinical practice. A questionnaire was designed and posted on the University of Nottingham Network Learning Environment (NLE) which is an online learning database for medical undergraduates. We looked at students’ opinion on clinical activities, perception of their acquisition of clinical skills and their preference of teaching methods delivered.

Summary of results: Amongst the clinical activities highlighted in the study, students enjoyed tutorials the most (77%). However, lectures were less well received. Skills-wise, most students are confident of their clerking and presentation skills (85) but many are not confident with procedural skills (intravenous cannulation, basic suturing). This is mainly due to lack of emphasis and guidance in procedural skills. Most students (94) agreed that the patient-based learning was the best way to learn clinical skills. This is followed by the ‘see one, do one’ approach (87). However, students found that clinical skills were usually taught on a mannequin.

Conclusion: We can learn a lot from students how to maximize their learning. Extrapolating from the data obtained, students prefer to be actively involved in the learning process, thus building their confidence in the various areas of clinical practice.

Take-home message: Tell me and I will forget, Show me and I will remember, Involve me and I will understand!” Confucius (551 BC-479 BC).

3Y/P2

Doctors’ participation in quality assurance at Saraburi Medical Education Center, Thailand

Panida Mukdeeprrom*, Wanpen Buathong (Saraburi Regional Hospital, 18 Tedsaban 4 Rd. Pakpreaw, Muang District, Saraburi 18000, Thailand)

Background: Accreditation and Quality Assurance are vital tools to ensure the public on educational outcome. Key success factors demand doctors’ involvement and contribution to the processes.

Summary of work: We carried out a study on the level of doctors’ participation in educational quality assurance and compared level of participation among doctors by working experiences and working status, using Likert-type questionnaires to determine the level of participation in 9 educational quality assurance criteria; (1) Philosophy and objectives, (2) Teaching and learning processes, (3) Student affairs, (4) Research, (5) Societal scholarly services, (6) Nurturing of art and culture, (7) Administration and management, (8) Finance, and (9) Quality assurance system. The result was analyzed for percentage mean and standard deviation, using student T-test to test the statistical significance.

Summary of results: (1) Doctors’ participation in all 9 criteria of quality assurance was in medium level, for detail criteria, the highest participation was in teaching and learning. (2) There was no significant difference in level of participation among doctors of different working status. (3) Apart from research criteria that senior doctors seemed to pay more participation, there was no significant difference in participation among the rest of the 8 criteria.

Take-home message: Further study should explore factors that influence and obstacles of QA participation to improve and achieve QA goals.

3Y/P3

An assessment programme for the new curriculum in the College of Medicine & Health Sciences,

Sultan Qaboos University

Nadia Al Wardy* (Sultan Qaboos University, College of Medicine & Health Sciences, P.O. Box 35, Al Khod 123, Oman)

Background: An assessment programme that is based on principles of sound assessment has been developed for the new curriculum that is approved to be implemented in the College of Medicine & Health Sciences, Sultan Qaboos University, in Fall 2008. This programme deals with governance, conduct, and evaluation of the assessment process in the College.

Summary of work: The governance of the assessment deals with the responsibilities of the dean, College Board, College examination Committee, Departmental examination committee and the role of course coordinators and individual instructors. The conduct is concerned with blueprinting, selection of appropriate assessment instruments, design and preparation of exams, weighting of different components, use of assessment databanks, standard setting, marking of different types of components, and mechanism of feedback to students. Evaluation of the assessment process includes evaluation of individual assessment instruments by determining their content validity, reliability, difficulty and discriminatory indices of questions and the use of this data in improving the assessment process. General evaluation of the assessment programme includes alignment with curriculum outcomes, University regulations and principles of sound assessment, in addition to collecting staff and student satisfaction data. To ensure the conduct of a sound assessment programme, a faculty development programme is envisaged.

3Y/P4

Comparison between student and faculty perspectives on course evaluation by medical students

Su-Jin Chae*, Ki-Young Lim (Office of Medical Education, Ajou University School of Medicine, San5 Wonchun-Dong Yeongtong Gu, Suwon 443-721, Republic of South Korea)

Background: Following the first in 1990, the use of course evaluations (CE) by medical schools across the Republic of Korea has grown steadily since 1997. However, the student and faculty are dissatisfied about the validity, reliability and adequacy of the CE.

The purpose of this study was to analyze differences in perception between the students and faculty on course evaluation by the students and to pursue the improvements of the course evaluation system.

Summary of work: This study targeted 61 faculty and 88 students of the School of Medicine at Ajou Medical School and a questionnaire survey was carried out with them.

Summary of results: As a result, both the students and faculty members approved the need of the course evaluation system, but there were differences in perception between the two groups in terms of efficiency and factors affecting evaluation results.
Conclusion: The agency taking charge of the CE of the School of Medicine should review the perception differences between the students and faculty and utilize the reviewed content to improve the CE system.

Take-home message: Above all, education on the CE system has to be undertaken for the faculty and students to properly understand it and to ensure the system can be suitably implemented.

3Y/P5
Didactic and structural quality of the final year in medical training: results of a student evaluation
Marzellus Hofmann*, C Scheffer, M Heers (University of Witten Herdecke, Alfred-Herrhausen Str 50, Witten DS8448, Germany)
Background: The final year in medical training in Germany often lacks a structural and educational concept in order to meet the demand of active and patient centered learning.

Summary of work: In order to explore student perceptions of their final year of medical training at Witten/Herdecke University members of the curriculum committee including final year students developed a questionnaire inquiring about structural and didactic elements of the final year at cooperating hospitals in Germany as well as abroad. Special emphasis was put on the training place, surrounding conditions (training structure, learning goals, learning facilities etc.), development of practical competences, professional feedback, amount of bedside teaching and seminars and overall evaluation of the practical year. This questionnaire has been administered to all final-year medical students since November 2007. We will present results of this evaluation focusing on differences between training places (Germany, US etc.) and formats (Clinical Education Ward at Witten/Herdecke).

Conclusion: Final year medical training in hospitals does not automatically provide an ideal learning environment for medical students.

Take-home message: Results indicate that hospitals, teachers and students have to commit themselves to a “training contract” on the basis of preliminary work such as manuals and workshops.

3Y/P6
Present state and further development of Croatian medical education: the teachers’ opinion?
N Cikes*, A Smaljicelj, Z Bradamante, N Golubic (University of Zagreb Medical School, Croatian Association for Medical Education, Zagreb, Croatia)

Background: To investigate teachers’ opinion about the state of Croatian medical education we developed a questionnaire. Through a Likert nine point scale, opinion about the curriculum, educational methods and learning were collected, firstly about the present state, and secondly about further development.

Summary of work: 44 teachers took part, 28 from Zagreb, 16 from Rijeka. 18 were female, mean age 40,2 ± 3,4, 20 clinicians, 15 pre-clinicians and 9 from public health and primary care.

Summary of results: According to the teachers opinion, the present curriculum is more disease oriented, concentrated on the development of therapeutical competences, oriented to individual patients, to research and it is too specialist. In the future, the curriculum should be more oriented toward health, on development of overall competences, community and practice oriented, and directed more towards developing doctor as a generalist. Lectures should be replaced by seminars and small group work, it should be more practical work, especially in primary care, less subject based teaching and more electives. From the teachers’ point of view, learning should be more based on problem solving than collecting information and more task oriented.

Conclusion: It is interesting that the same questionnaire was carried out 15 years ago and that similar results were obtained. Why has medical education not developed?

3Y/P7
Curriculum evaluation based on feedback from recent graduates and their employers at the University of Montréal: a useful tool for adapting veterinary curricula to the needs of the profession
Michèle Doucet*, André Vinrs (Faculté de médecine vétérinaire, Université de Montréal, PO Box 5000 (3200 Sicotte), Saint-Hyacinthe (Québec) J2S 7C6, Canada)

Background: In order to adapt the veterinary curriculum to the varied and constantly changing needs of the profession, an efficient approach for evaluating the pertinence and quality of training was implemented.

Summary of work: A survey of veterinary association members was conducted to evaluate the importance of different competencies in various professional areas. Annual surveys of recent graduates and their employers were also conducted to evaluate the level of preparedness of alumni in their respective fields of work. A novel scoring system was used to analyse results.

Summary of results/Conclusions: 622 (40%) active members of the veterinary profession participated in the first survey. Importance scores for technical competencies in private practice were significantly different from those in other fields whereas scores for non-technical abilities were the same overall. In three years, 106 (41%) recent graduates and 83 (35%) employers responded to the annual surveys. Graduates were perceived to be well prepared for the majority of technical competencies in their respective fields of practice while minor gaps in non-technical competencies were identified and addressed by curricular reform.

Take-home messages: Feedback from recent graduates, their employers and veterinary association members can be useful in adapting veterinary curricula to the needs of the profession.

3Y/P8
Student ratings, undergraduate clinical attachments and the accountability of medical schools
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Background: Accountability is a social responsibility of medical schools. In Europe, the growing movement towards accreditation of medical schools emphasizes the importance of framing adequate strategies for organizational analysis. These will be hard to come by, since medical schools are highly diverse, have an influence and are themselves influenced by several idiosyncrasies – such as national or regional regulations, leadership and educational paradigms or the advancement of medical education research. A single very difficult factor to contemplate relates to the workplace learning of undergraduates in clinical attachments, particularly of medical schools who collaborate with several institutions. The accountability challenges of “Multi-institutional” models are particularly complex, since i. institutions often show high levels of heterogeneity between and also within themselves; ii. each institution may have its own interpretation of accountability; iii. the institutional degree of involvement and of proximity to the medical school.

Take-home message: Above all, education on the CE system has to be undertaken for the faculty and students to properly understand it and to ensure the system can be suitably implemented.
Summary of work: This is an analysis of the accountability of clinical attachments based on empirical data gathered longitudinally and systematically along three years. The context is a Medical School who places approximately 180 students every year in clinical clerkships rotation in 6-18 different institutions. 

Conclusions/Take-home messages: Student ratings should be highly credited in the accountability of clinical attachments.

3Y/P9
The Medical Instructional Questionnaire used in the quality of South African medical education
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Background: Decentralized clinical training raises concerns about quality of medical students’ training. The University of New York Buffalo developed the MedEdIQ to satisfy the need for a valid reliable tool to measure students’ perception of instruction. The questionnaire measures students’ perception of adequacy of teaching and learning opportunities. The Department of Family Medicine of the University of Pretoria South Africa decentralized clinical training and uses several clinics in experience-based training of senior students. This study was done to elicit students’ perception of differences between clinics.

Summary of work: The Medical Instructional Questionnaire determined students’ perception of their quality of training and showed variations in perceptions at different clinics. 251 final year students completed this questionnaire at conclusion of their final year clinical training for Family Medicine. Differences regarding four constructs: clinician-teacher’s impact on learner, experience gained and benefits and problems of the clinic, were identified.

Conclusions: Results do identify differences between sites and are used to identify problem areas and provide clinician-teachers with recommendations on improving instruction.

Take-home message: This instrument’s applicability to access students’ perceptions for South Africa is verified, although it originated in the USA.

3Y/P10
Do students rate all subjects equally? Ioannina University medical students say No! Implications on teaching and learning
Maria Ntalouka, George Souretis, Pantelis Stavrinou, Athina Stratou, Xanthippi Tseretopoulou, Ioannis Dimoliatis* (Ioannina University Medical School, Dept of Hygiene & Epidemiology, University Campus, Ioannina 45110, Greece)

Background: Learning depends on the relevance of what is to be learned. A learner-centred approach is focused on students’ interests and needs. Do curricula take into consideration their students’ perceptions on how relevant is what to be learned?

Summary of work: After being commissioned to conduct a study on students’ opinions by the Dean, an anonymous questionnaire was distributed to 413 students, asked to rank all offered subject-courses according to perceived subject importance.

Summary of results: 188 students (response 46%) ranked subject-courses from the most to the least important as follows; median (quartile 1, quartile 3): Anatomy 1(1,4), Physiology 2(2,5), Pathophysiology 4(3,5), Internal medicine 4(3,6), Pathology 5(4,11), Surgery 7(4,9), Pharmacology 7(6,12), Nosology 8(5,13), Orthopedics 12(9,15), Pediatrics 12(9,16), Microbiology 12(9,18), Neurology 13(10,16), Biochemistry 13(6,22), Ophthalmology 15(12,18), Radiology 15(10,19), Obs-Gynaecology 15(5,11,20), Urology 16(12,18), Dermatology 17(13,20), Biology 19(8,22), Psychiatry 19(13,22), ENT/ORL 19(16,22), Forensic medicine 21(16,24), Hygiene&Epidemiology 21(16,24), Medical Psychology 22(17,26), Chemistry 25(21,26), Medical Physics 26(23,27), Foreign Language 27(22,29), Biostatistics 27(25,29), History of Medicine 28(26,29), Sociology 29(27,30).

Conclusions: Students perceive some subjects as more important than others. Ranking does not coincide with what comes first and second in teaching. We stand the risk of vaporizing their enthusiasm.

Take-home message: Students’ perceptions of subjects-courses’ importance cannot be ignored.

3Y/P11
Internal evaluation of surgical group, Jahrom Medical School
Sedigheh Najafipour*, Abdolali Sapidkar, Mitra Amini, Hossini Mehdi, Innallow Reza, Yosefi Ali Reza, Hassanpour Abbas (Jahrom Medical School, EDC, Jahrom, Fars, Iran)

Background: Evaluation is a prerequisite for judgment about educational quality, achievement rate of educational objectives and determines weakness and strengthens the education process.

Summary of work: This study has been designed as an internal evaluation project by cooperation of the surgical group and EDC of Jahrom Medical School. Supportive factors, space and clinical education equipment, authority of the group’s head, staff, educational objectives, and the teaching and learning process have been evaluated by use of an objective based model. The community of the study are surgical group staff, interns and personnel. Required information has been collected by a questionnaire, checklist, observation and interview. A Likert score based questionnaire with five options of excellent, good, moderate, poor and very poor was used and correlated with one to five score respectively.

Summary of results: Educational process was determined as good in 90% of responses by the clinical students’ group. Staff capability in regard to surgical operation training, communication with patients and management of clinical examination were determined as good by students. Training of treatment methods were good in most of cases. CPR and chest tube training were determined as poor. Supportive elements, space and clinical education equipment and educational accessory devices were rated as good. Research activity, educational conference, head of department capability and activity were rated as good. Conclusion: The educational situation of the surgical department with regard to different criteria was determined as good to moderate.

3Y/P12
A programme evaluation system - reaching the lost tribes and closing the loops
K Wylde*, A Cumming, Helen S Cameron (University of Edinburgh College of Medicine and Veterinary Medicine, ACT Office, The Chancellor’s Building, 49 Little France Crescent, Edinburgh EH16 4SB, United Kingdom)

Background: For some years Edinburgh Medical School has been developing an evaluation and QA system for its MBChB but there remain many challenges. In a complex programme, seeking valid data, contacting appropriate sources and developing efficacious processes for evaluation, action and reporting are just a few of the difficulties we share with other institutions.
Summary of work: We shall report on how our system is developing to overcome the multi-faceted problems outlined above. Technology has certainly offered some advances but awareness of opportunities within and across undergraduate and postgraduate education systems is just as important; and innovative management processes remain central. We hope to stimulate discussion on what makes a good evaluation system and how to develop one given the constraints of the real world. We will share examples of how our evaluation system has led to changes across the undergraduate programme at Edinburgh, and of some of our outstanding difficulties.

Conclusions/Take-home message: Knowing what to measure and how to measure it are only the first steps in course evaluation. However we can develop more effective programme evaluation if we have insight into the SWOT analysis of our own systems and seize opportunities as they arise.

3Y/P13
Strong and weak points in the general medicine course education at the First Faculty of Medicine in Prague: students' view
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The six year course of general medicine is divided in two equal parts – theoretical and clinical. The first year creates difficulties because of the number of students and is considered as a part of the entrance exams – from 700 (673–698) enrolled students 65-70% (432–492) pass to the second and 50% (339-368) to the third year. As well as the severity of the studies students complain about anonymity, passive education and hypertrophic requirements with no application in clinical medicine. On the other hand up to 37.4% of students in clinical years (largest number between our medical faculties) benefit from the theoretical knowledge gained which reflects on their international practices, often leading to a job offer. In the clinical years students appreciate the unpretentiousness compared with their previous experiences. The weakness of the clinical clerkship is the amount and structure of patient examination education. Our recent student survey shows that time with patients comprises only 60% in the 4th and 48% in the 5th year from total education days. Students also are notably participating in the introduction of the electronic form of education evaluation. Last year 36.9% of participating students appreciated partner access, atmosphere and objective exams and criticized the content of seminars and praxis. Cooperation with feedback from students helps in improving the education process.

3Y/P14
Development of a generic evaluation inventory for a new curriculum with increased self-directed learning
Vicki H M Dale*, Stan D Head, Stephen A May (Royal Veterinary College, Hawkshead Lane, North Mymms, Hertfordshire AL9 7TA, United Kingdom)

Background: The Royal Veterinary College (RVC), University of London, recently implemented a new Bachelor of Veterinary Medicine (BVetMed) curriculum with a strong focus on self-directed learning. A generic evaluation inventory was developed to assess the quality of the curriculum through student perceptions.

Summary of work: Using a modified version of the Delphi technique, a panel of expert stakeholders (including senior management officials, academic development staff, an educational researcher, a student support officer and student representatives) reviewed a draft inventory in two stages. Experts rated the statements on a scale of 1 (strongly disagree that items should be included) to 5 (strongly agree that item should be included).

Summary of results: Excluding statements with a mean value less than 4 resulted in an inventory with 92 items, distributed to first year students towards the end of the first term. Factor analysis on the results produced 41 statements correlated at a level of 0.5 or above with one of seven main factors: (1) directed learning classes, (2) private study, (3) practical classes, (4) tutors and tutorials, (5) learning objectives and assessment, (6) timetabling and (7) interactive self-assessment tools. The reliability of each scale of the evaluation inventory was measured using Cronbach's alpha coefficient, and was shown to be moderate (0.65) to high (0.85).

Conclusions/Take-home messages: This work has resulted in the production of a user-friendly evaluation inventory for assessing students' perceptions of a self-directed curriculum, available to other veterinary schools and colleagues in allied disciplines.

3Y/P15
Validation of the PHEEM questionnaire for use during full-time rotational clerkships by 7th year French-speaking Belgian medical students
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Background: In an effort to adopt standardized measurements of medical teaching, the authors translated the Postgraduate Hospital Educational Environment Measure (PHEEM) into French and studied the feasibility of applying it to UCL.

Summary of work: Seventh year medical students were invited back at the end of their one-year full-time medical rotations and were asked to apply the PHEEM to their last elective, specifying university or non-university environment. Turnout was high as 119/157 students came (75.8%) and 119 questionnaires (100%) were retrieved and analyzed.

Summary of results: Overall impression, perception of role autonomy, teaching and social support were generally good, although teaching was very poorly perceived in 3 places. Interestingly, ratings for university or non-university environments were not significantly different (university: n=81, 68.1%, non-university: n=38, 31.9%), although 8/40 (20%) items got statistically significantly different answers. Neither were there significant differences between men's and women's ratings (men: n=37 (31.1%), women: n=82, 68.9%), although 6/40 (15%) items got significantly different answers. Internal reliability was good (Cronbach alpha: overall 0.877, autonomy 0.725, teaching 0.834) except for social support (0.431). Factor analysis with varimax rotation suggested 11 factors explained 65% variance.

Conclusions: The PHEEM can successfully be applied to a French-speaking clinical setting in Belgium, although some items may require contextual adaptation.
3Y/P16
Postgraduate Hospital Educational Environment Measure (PHEEM) results of medical residents at Ankara University School of Medicine
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Background: The purpose of this research is to evaluate educational environment perceptions of Medical residents, using Postgraduate Hospital Educational Environment Measure (PHEEM).
Research question: Is the Turkish version of the PHEEM a reliable and valid instrument? What are the results of PHEEM for medical residents at Ankara University School of Medicine (AUSM)?
Summary of work: PHEEM is translated into Turkish and it is conducted with 150 residents to check validity and reliability of this translated version. For test-retest reliability it is conducted with 40 selected residents. Confirmatory factor analysis (CFA) is conducted using data collected from 150 residents for the first analysis, and 304 residents which is collected for final analysis. In the second part of the analysis, PHEEM is conducted to AUSM medical residents.
Summary of results/Conclusion: In the first part of the analysis the Turkish version of PHEEM's Cronbach-α value was found to be 0.944 and total correlations of items of scale are between 0.282 and 0.782. Test-retest reliability was 0.79. These figures indicate that this scale is a reliable one. Construct validity of this scale was tested to see if the original construct explained by Roff et al is present in the Turkish version of PHEEM. Fit indices of these two sample have good fit values and therefore it is concluded that the construct in the original scale is preserved in the Turkish version.

3Y/P17
The DREEM in Zambia
Julie Schurgers*, Lastina Lwatula (University of Zambia/HSSP, PO Box 320296, Lusaka 10101, Zambia)
Background: The School of Medicine, University of Zambia has been in existence for 40 years, with a traditional curriculum. A Curriculum Review of the MB ChB Curriculum was instigated through the results of a self evaluation tool of the World Federation of Medical Education (WFME).
Summary of work: Awareness workshops were held, and departmental workshops in which strengths and weaknesses of the current curriculum were identified. A new, more innovative approach for the Curriculum as well as a new Curriculum map, was defined by the end of 2007. A needs assessment was instigated targeting the undergraduate medical students (350). A general questionnaire and the DREEM questionnaire (Dundee Ready Education Evaluation Measure) was used as research tool. This choice will enable us to compare results with other universities. Also, it is possible that this creates further motivation for (drastic) change. After the first rough analysis, a focus group discussion was set up, with 14 undergraduate students.
Conclusions: Getting away from the traditional curriculum and balancing the local circumstances such as lack of (human) resources, finances and motivation to apply innovative features in the light of quality assurance is still a long way away. The involvement of students can be instrumental to this change.
Take-home messages: Students should be empowered more to take part in Curriculum reviews. Questions: How much change at once can a university/SOM bear? When do we start making it obligatory for teaching staff to be trained teachers?

3Y/P18
Are the perceptions of “real” and “ideal” learning environments stable for a single cohort of students over time?
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Background: Medical school curricula consist of formal, informal and hidden parts. Within the hidden curriculum, the learning environment exerts particular influence upon medical students.
Summary of work: This study sought to answer the question - does a student’s perception of their learning environment change with time and experience? The Dundee Ready Educational Environment Measure (DREEM) is a well-validated scale used to assess the learning environment within medical schools. DREEM was administered to the new clinical cohort in March 2007 in one teaching hospital within the University of Manchester Medical School. Students were asked to complete “real” and “ideal” DREEMs. The same students then completed DREEM again a year later.
Summary of results: In 2007, there were significant differences between the mean total “real” and “ideal” scores (136.7 and 188.0 out of 200, respectively). In addition there were wide-ranging differences between “real” and “ideal” responses for individual items, suggesting that students place varying emphasis on different elements of their learning environment.
Conclusions: Between 2007 and 2008 the mean “real” score decreased by more than 5 points, whilst the mean “ideal” score remained the same. Further data analysis has yet to be performed. This change in perception may be due to a number of factors including clinical experience.

3Y/P19
Education environment during clinical years in undergraduate students
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Background: The Medical Education Centre of Prapokklao Hospital has had a medical curriculum for more than 20 years. Previously our centre had assessed the educational environment only in teaching and learning aspects. This study aims to assess more aspects.
Summary of work: Fifty medical students used the Dundee Ready Education Environment Measure form in 50 items which had a score of 0-4 and domains of learning, teaching, academic self perception, perception of atmosphere and social self perception.
Summary of results: There are 21 males and 29 female students. The mean of scores was 136.8. The females had higher scores than males (137.93 : 135.23). The 6th year students had higher scores than 5th and 4th year students (139.45 : 137.33 : 133.47). The high GPAX. had higher scores than low GPAX. The 3 items that had scores below 2 were “I am too tired to enjoy the course”, “the teaching overemphasizes factual learning” and “the enjoyment outweighs the stress of the course”.
Conclusion: Education environment in the Medical Education Centre of Prapokklao Hospital had a high score and no difference in gender, level of class and GPAX.
Take-home message: The Medical Education Centre should to solve the items that have a low score and develop the medical education environment.
3Z/P1

Simulation training with birth robot in the obstetrics and gynecology clerkship

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Background: The purpose of this study was to determine the effectiveness of training using birth simulators for medical students. We compared measures of competence in obstetric skills of students with and without training.

Summary of work: After a lecture on labor and delivery, 35 third-year students practiced their skills either on an obstetrics simulator (n=17) or received no further formal instruction (n=18). All students were asked to respond to surveys of their experiences and competencies in performing obstetrics procedures. The questionnaire to assess competencies consisted of items asking the level of students' cognitive and psychomotor skills and their behavior.

Summary of results: Students who practiced deliveries on the simulator were more likely to evaluate themselves as more competent in performing most aspects of vaginal delivery. Training using the simulator had a greater impact on students' cognitive (t=6.54, p<.01) and psychomotor (t=6.73, p<.01) skills than on their behavior (t=6.73, p<.01), but nevertheless students who had simulator training reported significantly higher scores in all 3 areas.

Conclusions: The training on an obstetrics simulator raised students' confidence on their skill acquisition and adequate behavior needed to perform obstetrics procedures.

3Z/P2

Suturing education of future physicians: a one day workshop

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Background: Recognizing wound specificities, choosing the appropriate suture and performing sutures are general skills that should be part of physician education. However, effective learning approaches have not been described for that purpose.

Summary of work: A workshop on the theory and practice of manual suturing was conducted for undergraduate medical students with a previous clerkship experience in surgery. The 8 hours learning experience includes 10 practical stations (1 on tying knots and 9 in which pork pieces are available to practice glue and staples suture and seven different stitches) and lectures (wound etiology, classification, healing, disinfection, local anesthesiology, suture materials and suturing, and suture extraction before practicing).

Evaluation of the workshop contemplated: i. pre/post cognitive testing with written test; ii. Pre/post skill evaluation (external, on a sample of participants); iii. Gathering of perceptions – answers to a 10 item questionnaire on the quality of the workshop.

Summary of results: 161 participants in 4 groups returned very positive workshop ratings. Faculty observed: I. major cognitive deficiencies at entrance, remediated by the course (conclusion from pre/post test results); ii. skill improvement (for example, performance in tying knots).

Conclusions/Take-home message: Hands-on 1 day suture workshops can fill educational gaps of future physicians.

3Z/P3

Goal setting influences the acquisition of clinical skills during self-guided learning in a simulated setting

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Background: Setting learning goals may affect learning process and development of adaptable learning strategies. We assessed the effects of goal-setting on learning of wound closure skills.

Summary of work: Medical students (n=24) were assigned to a process goal group (setting goals related to the execution of proper technique) and an outcome goal group (setting goals related to the quality of the end product). All had free access to an instructional video during 2-hours of practice. Expert based performance measures were used to assess performance during pre, post, and transfer tests. Interactions with the videos were analyzed for viewing patterns. Students were asked to attribute practice difficulties to anything they felt impeded their performance on a semi-structured post-practice survey.

Summary of results/Conclusions: Transfer test performance showed that students who set process goals learned more, and accessed instruction less frequently than the students who set outcome goals on all measures (p<.05). Finally, students setting process goals constructively attributed their difficulties to choice of learning strategy, whereas those setting outcome goals negatively made attributions to extrinsic factors.

Take-home message: Setting process goals leads to superior skill acquisition, more efficient use of instructional materials and the development of positively-oriented and adaptable learning strategies during self-guided learning.

3Z/P4

Task trainers and virtual reality simulators both show benefit in training gastrointestinal endoscopy skills

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Background: Task trainers and virtual reality (VR) simulators can facilitate clinical skill acquisition in a low-risk environment; however, they're expensive, limiting their application. We sought to examine the construct validity of an inexpensive box sigmoidoscope simulator and whether there's a relationship between performance on the box and VR simulator.

Summary of work: Task trainers and virtual reality simulators involved navigating an endoscope through a sequence of targets. The VR task involved navigation through a modeled colon. Performance measures included insertion time and expert assessment of performance.

Summary of results: 13 novice and 8 experienced endoscopists participated. There was a significant effect of training on novice performance for insertion time on the box simulator (p<0.009), and expert assessment of performance on both simulators (p<0.005).
Even after training, however, experienced endoscopists performed significantly better than novices on both simulators for insertion time (p = <0.001), global rating (p = <0.005) and checklist scores (p=<0.005). Measures of performance correlated (r =0.6) significantly between the box and VR simulators (p=<0.01).

Take-home messages: Hands-on training produced improvement in novice performance. This sigmoidoscopy task trainer was capable of expertise discrimination, thus establishing construct validity.

3Z/P5

Development and pilot applications of simulation-based difficult airway management course

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Background: Traditionally, training in airway management has been focused mainly on teaching technical skills and algorithms for various difficult airway situations. However, adequate training in managing the difficult airway requires a comprehensive training programme that is organised with practical training for technical and non-technical skills, and real time patient experience. Realistic high-fidelity patient simulation is gaining popularity in the training of healthcare professionals. Simulation training can facilitate learning of cognitive, psychomotor and affective skills. We describe a pilot simulation-based difficult airway management course we developed for senior Anaesthetists and Operating Department Assistants (ODP).

Summary of work: 8 anaesthetists and 6 ODPs participated in a full day course. Difficult airway scenarios integrating the Difficult Airway Society guidelines were formulated including Cricothyrotomy, jet ventilation and the recent new airway adjuncts. Simulation training was reviewed and applied to the design of a simulation system.

Summary of results: Data collected by a questionnaire and interview were analysed. All anaesthetists and the ODPs felt it was an excellent course for training difficult airway management. Many described the course has introduced new concepts and filled an important void in their learning and training in difficult airway management. Further results will be presented.

Conclusion: Simulation-based difficult airway management training programme could be a very useful way to integrate knowledge and skills into the context of managing a difficult airway situation, thus improving patient safety.

3Z/P6

Does high cost, ‘high fidelity’ fundoscopy simulation provide additional benefits?

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Background: There is an emphasis in the medical literature that ‘high-fidelity’ simulations are important for learning clinical skills. Fundoscopy simulators are used in medical schools across the world, both in developed and developing countries, however there is little evidence suggesting that ‘high-fidelity’ simulators are more effective than ‘low-fidelity’ or even the absence of simulators.

Aim: To identify and quantify any differences in performance of fundoscopy, comparing practice solely on humans with the addition of ‘high-fidelity’ or ‘low-fidelity’ models.

Summary of work: We will use a randomised, controlled, single-blinded trial with three arms. Each arm will receive the same core instruction. Following this, one arm will practice solely on humans, one arm on humans and a gold-standard ‘high-fidelity’ simulator, and one arm on humans and a ‘low-fidelity’ simulator currently used at a UK medical school. A validated assessment tool using simulated patients will assess which groups can focus and navigate the retina most effectively.

Summary of results: Preliminary results will be obtained at the end of April. In any event the results will be interesting. They will either justify or refute the use of simulation in this context, and could have wider implications for the use of simulators in other contexts.

3Z/P7

Is the sum greater than the parts? Assessing team performance

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Background: Medical teams exist within the healthcare system in every patient care setting, however until recently the importance of developing team skills went largely unnoticed. A push toward team training came from a report from the Institute of Medicine, which cited communication breakdowns as threats to patient safety. Unfortunately, to date there is no validated method of assessing teamwork. This study introduces and defines team process dimensions and offers a simulation-based approach to team assessment.

Summary of work: An extensive review of the team training and assessment literature was conducted to try and identify team processes and behaviors applicable to medical team training and performance. A similar review was conducted to identify a comprehensive, evidence-based approach to simulation-based team training design.

Summary of results: A total of nine different dimensions and two coordinating mechanisms were identified as applicable and valid in medical team training. Event-based simulation design was reviewed and applied to the design of a simulation system.

Conclusions: Based on the current literature, medical team performance can be understood and studied at the process level. Take-home message: There is evidence in the team training literature that supports a taxonomy and approach for simulation-based team training in medicine.

3Z/P8

Perioperative Patient Simulation: an online interactive simulation of postoperative cardiac critical care patients

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Background: The successful completion of a cardiovascular surgical repair is followed by close monitoring and stabilization of the patient in the Critical Care Unit. We have created a new Web-based perioperative patient simulator (POPS) where users can practice postoperative monitoring and stabilization. POPS uses a mathematical model of the circulation to simulate postoperative complications, and response to treatment with the usual medications, fluids and equipment available in the Critical Care Unit. On completion of the case, POPS provides a score and other feedback to the user.

Summary of work: The POPS application has been developed and assessed by staff anesthesiologists for face and content validity and by resident physicians for usability. Construct validity is being assessed by determining whether POPS scores discriminate between novices and experts, whether POPS provides cases with a range of difficulty and whether repeated practice with POPS results in an increase in scores.

Conclusions: POPS is a valid simulation of a postoperative cardiac surgical patient and is easily usable by physicians in training. The assessment of construct validity will be presented at the conference.
A qualitative analysis of student and tutor evaluations of a final year undergraduate simulation course in acute adult care

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**Background:** The current qualitative study explores the comments of students and tutors to help us develop understanding of the teaching and learning of a final year simulation programme of acute adult medical emergencies and so to better understand the place of simulation in undergraduate curriculum.

**Summary of work:** Students and tutors routinely evaluate each of seven 2-hour simulation sessions. The collected comments have been analysed qualitatively. Emerging themes and categories have been identified and coded.

**Conclusions:** The program is a valuable learning experience that promotes team working and leadership. It helps update existing knowledge and provides new knowledge gains. The scenarios work well and are relevant to current and future learning. Most students engaged in the simulations and were enthusiastic and motivated. The tutors identified that the students improved with time. The environment was conducive to learning through realistic and relevant recreation. In general, resources were suitable to the enactments enhancing realism.

**Take-home message:** The learning of non-technical skills mediated through simulation and the experience of managing serious acute illnesses, otherwise not available except observationally or vicariously, were highlighted as key successes. Further work, both qualitative and quantitative, is required to establish the place of simulation in undergraduate medical education.

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Do simulators play a role in endoscopy training?

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**Background:** The evidence shows that simulators can be used to improve learning curves in endoscopic training. Despite evidence that simulators benefit training, experience is limited.

**Summary of work:** Confidential questionnaires were sent to Specialist Registrars (SpRs). The aims were to look at specialist registrars’ exposure to simulators. The questionnaire design incorporated the use of Likert scales, tick box and free text responses.

**Summary of results:** 33 questionnaires were returned. The median year of training was year 4. 85% were aged between 30-39. The ratio of males to females was 8:3. 58% (19/33) of trainees had performed >200 colonoscopies. 30% (10/33) of SpRs had never used a colonoscopy simulator. Of the 70% with simulator experience, 74% (17/23) felt simulators were beneficial in training. 79% (26/33) felt it may be safer to train on a simulator prior to real life experience.

**Take-home messages:** There is increasing evidence that practice on simulators can improve real life skills especially in the initial stages of colonoscopy training. Initial orientation and training could be done using simulators which will benefit patients. We suggest that all trainees should have access to simulator training early and that simulators may be used to improve confidence and competence levels in basic colonoscopy skills. More research is needed to look at the number of simulated colonoscopies needed to benefit training.

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Integration of clinical skills training through simulation in a PBL undergraduate medical education

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**Background:** The past two decades have witnessed rapidly growing interest in teaching clinical skills through simulation. With simulation learning, the students have the opportunity to develop and refine their skills without putting patients at risk. Our purpose is to create an innovative undergraduate clinical skills curriculum. This new educational model provides the students with advanced skills through simulation in a fully integrated gradual manner.

**Summary of work:** Our medical school curriculum is a community oriented problem based one. It is divided into three phases: phase I, the premedical year, phase II, the medical basic sciences and phase III, the clinical sciences. During phase II which is organ system based, clinical skills curriculum is fully implemented. The focus of this curriculum is on proficiency and competency on basic clinical skills. This approach depends heavily on the use of simulation, which prepares the students for safe and effective delivery of health care to their patients.

**Conclusions:** This curriculum is unique not only in its fully integrative nature but also in the gradual implementation of clinical competencies.

**Take-home messages:** Integration and gradual introduction of clinical skills training using simulation is a crucial tool in medical schools.

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A project on computer-based case simulation for clinical years of medical education

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**Background:** Dokuz Eylul University School of Medicine aims to develop the students’ clinical reasoning and problem solving skills through the implementation of problem-based learning in preclinical years and task-based learning in clinical years. Although students’ performance in educational activities provides clues about the acquisition of these skills, objective assessment methods are needed.

**Summary of work:** It is aimed to present a locally developed computer-based case simulation programme to evaluate students’ clinical reasoning and problem-solving skills. The programme simulates a case beginning with a short problem. Students follow the steps of hypotheses formulation, history taking, physical examination, laboratory investigation, diagnosis and patient management. The interactive design enables the students to establish interrelationships among steps, and therefore leads to the use of clinical reasoning and problem-solving skills. After reviewing similar examples, a working group (medical educators, clinical specialists and IT expert) developed software and cases. A pilot study is planned for May 2008.

**Conclusions:** The implementation of the programme in all clinical blocks and its initial formative use is planned.

**Take-home messages:** The rational use of local resources for the development of a computer-based case simulation programme in the evaluation of students’ clinical reasoning and problem-solving skills seems feasible.
Perception of Foundation Year 1 & 2 doctors receiving acute care simulation training together

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Background: Changes in medical training have influenced the growth of clinical skills training and competency based assessments. It is essential to train foundation trainees to become competent in assessing acutely ill patients as laid out in MMC curriculum. The aim of our study was to develop and evaluate an acute-care high-fidelity simulation course for Foundation trainees and to investigate how the FY1 & FY2 trainees working together valued and perceived simulation training.

Summary of work: 160 trainees participated. Emergency scenarios were formulated tailored to the curriculum. An F1 commences the scenario and F2 joins in when help is required. A fully facilitated feedback was given at the end of each scenario.

Summary of results: Data collected by a pre and post simulation questionnaire using 5 point Likert scale were analysed. One to one interview was carried out to improve validity. All trainees commented that it was a very valuable learning experience (5.0), and increased their confidence in managing emergencies. All felt that F1 and F2 working as a team increased the realism of dealing with crisis situations and enhanced learning.

Conclusion: Simulation training could be an effective adjunct to our current traditional teaching. F1 & 2 trainees working together was perceived as a strength.


Assessment of medical students’ skill in fine needle aspiration of the breast

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3Z/P14

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3Z/P15

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Implementing simulation-based technologies in Kazakhstan medical education

Background: Recognizing the importance of simulation-based education for improvement of medical education and quality of health care, the Government and Ministry of Health of the Republic of Kazakhstan has provided essential equipment for its establishment in Kazakhstan Medical Schools’ Clinical Skills Centers (CSC). KSMA has started to develop strategy of setting up, running and developing CSC since 2004.

Summary of work: KSMA’s medical teachers had their training and experience at leading UK, USA and Israel Medical Schools. A working group had reviewed the literature and sources regarding using simulation technology in medical education, developed the design of CSC, identified the key stakeholders and users, staff, teachers, discussed and considered key curricular outcomes, clinical skills that will be taught and assessed, necessary audiovisual equipment, medical facilities, classified simulators, and developed learning resources and materials.

Conclusion: The project allowed us to formulate the mission, develop Clinical Skills and CSC Guides with Glossary, OSCE Guide, Programmes for implementation simulation facility and OSCE exam into undergraduate curriculum, internship training, for faculty training and consolidate the efforts of administrative staff, faculty for development of new teaching, learning, assessment strategies, promote self-directed learning and allocate appropriate resource.

Take-home messages: Impact of implementation of simulation facility for improvement of students’ clinical competence needs to develop the research proposal.

Computer-based micro-simulation might be a valuable link between theory and practice

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3Z/P16

Using full-scale simulators in teaching undergraduate medical students in emergency medicine reveals quite frequently the problem of the transfer from theory to practice. Expensive simulator time has to be used to teach the “decision making” which is often neglected in medical school. Therefore we integrated the micro-simulation into our curriculum to close this gap, using MicroSim® from Laerdal, Norway. We would like to demonstrate the program and report our first experiences with enhancing the curriculum with this new method. We think that MicroSim® is a valuable link between theory, case scenarios and “classic” simulation.
3AA/P18
Study for suitable material in practicing repair of 2nd degree tear episiotomy wound for 4th year medical students
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Background: Suitable material is essential for practicing comprehensive repairing-technique. This study looked at the suitability of material (belly pork) and evaluated learning outcomes of a workshop.

Summary of work: Belly pork was prepared to imitate a 2nd degree-tear episiotomy wound. Sixteen 4th year medical students were enrolled in the workshop and interviewed on a rating scale. Two main outcomes were evaluated, the suitability of the material and learning outcomes.

Summary of results: On the aspect of similarity, compared to a human wound, the mean score of consistency was 3.81, of anatomical structure was 4.13, of convenience during practice was 4.38. The scores for repairing-technique comprehensiveness of concept (before, after) were 2.5 and 4.89; for experiences gained were 2.63 and 4.8, for confidence gained were 2.38 and 4.63. Comparing means between pre and post intervention there is statistically significant difference at p-value less than 0.05.

Conclusion: The prepared belly pork was suitable and repeatable material. The workshop was also valued for comprehensive teaching of the repairing-technique concept.

3Z/P17
Design and development of a paediatric clinical training facility
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Background: Clinical experience is traditionally gained through years of work in the ward or operating room. It is difficult for young doctors and nurses to gain satisfactory experience early in their career. Finding new ways to improve the learning curve are needed.

At the Queen Silvia Children’s hospital a facility for procedural training was formed in 2006.

Summary of work: The paediatric clinical training facility is used to train practical skills both individually and as team training to ensure high quality and maximum safety in clinical work. By introducing new nurses and doctors to procedural training, and by having recurrent practical training for students and staff the confidence and competence have increased. Procedures trained are for example neonatal resuscitation, SimBaby simulator training, endoscopy, and vascular access. Approximately two thousand diverse categories used the training facilities in 2007.

Conclusions: A clinical training facility can be used to increase the standard of attainment in everyday work. It gives opportunities to test and evaluate new procedures, and may be used both in education and in clinical research projects.

Take-home message: A paediatric clinical training facility increase staff confidence, competence and improve patient safety.

3Z/P19
Is there a place for simulators in colonoscopy training? A pilot study
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Background: The evidence shows that simulators can be used to improve learning curves in endoscopic training (Eversbusch, 2004). Despite evidence that simulators benefit training, experience is limited.

Summary of work: A half day course was designed to introduce novices to flexible sigmoidoscopy using a simulator. It was hoped that the group would benefit from practical experience, peer and tutor observation. A pilot study was conducted to establish realistic goals in course design. General surgical and medical trainees with no formal endoscopy training were recruited. In the pilot study, subjects took around 20 minutes to perform a flexible sigmoidoscopy. Successive performances were recorded using objective, previously defined parameters using the simbionix simulator.

Summary of results: Learning outcomes were achieved and very positive feedback was received. All felt they would benefit from further teaching on the simulator.

Take-home messages: Subjects enjoyed the course and felt they had benefited from attending. However, more time was required to gain sufficient skills to perform basic endoscopy. The larger study is now underway to identify the numbers of simulated procedures required to benefit training. Results of this will be presented.

3AA/P1
Motivation and satisfaction in medical students: a comparison of graduates and non-graduates in medical school
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Background: At King's College London School of Medicine, 20% of entrants to the 5-year programme are graduates. The Graduate and Professional Entry Programme (GPEP) is a 4-year graduate-only programme. This study looked at motivation for a medical career and satisfaction in graduates and non-graduates.

Summary of work: 235 students (173 non-graduates, 43 graduates in 5-year programme and 19 graduates in GPEP) responded to a questionnaire related to personal background, life in medical school and their choice of medicine. Focus group sessions explored views on aspects of life as a student and on the medical school in 7 non-graduates, 7 graduates in 5 year programme and 6 GPEP entrants.
Summary of results: Non-graduates were more likely to regret choosing medicine and have more difficulties coping with stress in medical school, but graduates were less satisfied with administrative aspects. Non-graduates regarded family background as an important influence on career choice and achievement in medicine, while graduates rated previous career and personal traits more important.

Conclusions: This finding suggests that graduates in both graduate-only and traditional MBBS programmes are more confident and satisfied with their choice of medicine than non-graduates, although they are more critical of organization within the medical school.

3AA/P2
A comparison of undergraduate and graduate student doctors’ perceptions prior to commencing the clinical phase of their medical education

T Metson-Scott*, Gaffney, A Blundell (Medical Education Department, King’s Mill Hospital, Sherwood Forest Hospitals NHS Trust, Mansfield Road, Sutton-in-Ashfield NG17 4JL, United Kingdom)

Background: Since the adoption of graduate entry programs there has been increased diversity in the backgrounds of medical applicants. There is interest amongst educators as to the differences between undergraduate (UG) and graduate (GEM) students.

Summary of work: Our aim was to compare the perceptions of UG and GEM students as their courses merged prior to commencing clinicals. A questionnaire consisting of 38 statements scored on a 5-point Likert scale was distributed and collected on the first day of the clinical attachment.

Summary of results: 196 completed surveys (137 UG, 59% UGs were worried about the hospital environment compared to 18% GEMs. 80% UGs were anxious about presenting to consultants compared to 57% GEMs. UGs felt GEMs would be more knowledgeable, dedicated and serious although not more competitive. Both groups felt the graduate course would have better prepared them for clinicals. 16% UGs felt threatened by the GEMs but only 8% GEMs felt threatened by UGs.

Conclusions: It is suggested there are differences between UGs and GEMs and that these could mostly be explained by age. We have looked at the perceptions that each group have of their peers. Preliminary findings suggest the perceptions of the groups differ considerably.

3AA/P3
Differential relations between marks in various disciplines taught at grammar school and the success in medical education at university

F Seibert-Alves*, A Syed Ali*, F Nürnberger* (Office of the Dean, Medical Faculty, Johann Wolfgang Goethe-University Frankfurt/Main, Theodor Stern Kai 7, Frankfurt/Main D-60590, Germany)

Background: Since 2004 German medical faculties can select 60% of their future students according to their own criteria. Although not standardised, the final grammar school examination (“Abitur”) is the legal basis for application for a place in medicine for the vast majority of applicants. During the final years at school, pupils can choose among various disciplines, e.g. sciences, arts, or languages.

Summary of work: In this communication, we describe our research on whether good marks in grammar school, irrespective of the chosen disciplines, will correspond to good success in the course of the medical study. As a criterion for this success we selected the results in the first part of the Physician's Examination (M1), sat usually after 2 years of study. All together, we collected school grades and M1 results of more than 700 students for our retrospective study.

Summary of results: The selection of a set of specific school disciplines was related to better marks in M1, i.e. natural sciences and foreign languages, whereas other disciplines did not indicate any relation to the success in M1. Most interestingly, the close relation between chosen disciplines and success in M1 was much more pronounced for the disciplines maths, chemistry and history, if the respective marks reached the upper third of the mark scale (≥ 10, in a scale range of 0 - 15 points).

Conclusions: As result, we decided to select applicants who had had these disciplines and grades equal or above 10 points.

3AA/P4
Why do students choose to apply to Barts & The London School of Medicine?

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Introduction: As the amalgamation of England's oldest hospital and oldest medical college, Barts & The London (BL) possesses a long tradition and commitment to educating tomorrow's doctors. It continues to thrive as the number of students passing through its doors has reached unprecedented levels.

Aim: University applicants have up to 4 choices from the 32 UK medical schools. We want to ascertain the reasons why they chose to come to BL. Such information allows the medical school to have a rounded understanding of the academic, cultural, and social factors that contribute to applicants' decisions, which may be useful in tailoring the provision of its curriculum.

Summary of work: Over the next 2 weeks, we will be distributing questionnaires to first year students for anonymous insight into their personal experiences of medical admissions and the factors that played a role in making their choices. This will be based on a pilot study of 20 students.

Preliminary conclusions: The pilot study demonstrated that family factors were the most important reasons encouraging students to apply to BL. However, for the majority of students, BL was the only medical school to offer them a place. A larger study will establish a detailed understanding into the factors involved.

3AA/P5
Increase the proportion of rural medical students at Saraburi Medical Education Center (SMEC)

Chitpongse Sujajpongse*, Wanpen Buathong (Saraburi Medical Education Center (SMEC) Saraburi Hospital, 18 Tessaban4, Pak Pure, Mueang Saraburi, Saraburi 18000, Thailand)

Background: There are many projects to increase the production of doctors. But the distribution of doctor in rural area: urban area is far apart. Ninety percent of medical students come from the urban area. Increasing the number of students from rural areas is one strategy to solve this.
Factors transitioning from undergraduate to graduate medical education system in Korea

Eunbae Yang* (Department of Medical Education, Yonsei University College of Medicine, 134 Shinchon-Dong, Seodaemun-Gu, Seoul 120-749, Republic of South Korea)

Background: A nation’s policy of medical education is closely knit to its social environment and other policies. Recently, there is transitioning from an undergraduate medical education system to a graduate medical education system in Korea.

Summary of work: Now, 28 medical colleges among 41 medical education institutes transitioned to a graduate medical school. We analyzed the reasons why such transitioning was introduced and described the transitioning status. First, such transition is a natural result of social changes and the current trend of globalization. Second, switching to a graduate medical education system brings about improvement in the quality of service as well as advancement in related studies of a particular professional field. The third reason is from the standpoint of educational administration. That is, premature, overheated competition among such “inexperienced and immature” students in professional occupations adversely affects a balanced development of other fields.

Conclusion/Take-home message: Due to the government’s support and expressed intent of fully establishing transition, a change in the system is expected to rise drastically. Therefore, it is important for schools that already transitioned and those that are to transition alike to refine and develop various matters regarding admission process, curriculum design, and various combined degree programs.

Acceptability of MMI as a mode of student selection

Boonyarat Warachit* (Hatayai Medical Education Center, 182 Ratakarn Road, Hatyai, Songkla 90110, Thailand)

Background: MMI have been used in conjunction with admission scores, learning skill, team work skill and interview at Hatyai Medical Education Center, Thailand since 2006, so we would like to survey acceptability of MMI and compare cognitive and non-cognitive scores in selected and non selected students. Six to seven stations were used to measure competencies. 122 applicants and 24 interviewers evaluated each station to assess acceptability using rating scales.

Summary of results: All (100%) agree that MMI should be used in student selection because of specific objective and high degree of interest even though some stations were difficult and stressful. Selected students had higher scores in both cognitive and non-cognitive scores than non selected students (p<0.001) and there was statistical difference in cognitive and non cognitive scores in both groups (p<0.001).

Conclusion/Take-home message: MMI is acceptable in evaluation of non-cognitive skills; it is structured, formatted, fair, feasible and can be done in every medical school.

Emotional intelligence, personal attributes and identification of students at risk

Vivienne O’Connor*, Karen Hansen, Marcus Watson (Bond University, Faculty of Healthy Sciences and Medicine, Gold Coast, Queensland 4229, Australia)

Background: Identifying medical students ‘at risk’ during the medical program is important for their professional development, the avoidance of later professional issues, and for their long term well-being. A literature search has been undertaken for the tools useful in this assessment. This pilot evaluates a tool for EI used in early education and other workplace environments.
Summary of work: Medical students enter the medical program after a MMI. They complete a personal qualities and emotional intelligence tool. Their progress has been monitored using a variety of methods including academic achievement, communication skills, attendance, and tutor reports.

Summary of results: The presentation will present the results of this monitoring against the EI and personal qualities tools. Students ‘at risk’ are identified and managed according to the policy developed by the Faculty of Health Sciences and Medicine.

Conclusions: If early identification can be achieved, this may allow for interventions, career counseling and follow up.

Take-home message: This pilot work suggests that emotional intelligence and evaluation of personal qualities at the start of a medical program may be useful in monitoring ‘at risk’ students. Later work will develop an intervention to improve the student’s attitude, behaviour, and communication skills. This can have long term benefits for professionalism and personal well-being.

3AA/P10
Validation of a Machine Marked Test to select trainees into UK General Practice: a model for the future
F Patterson*, B Irish, S Plint, S Gregory (City University, London, Dept Psychology, Northampton Square, London EC1V OHB, United Kingdom)

Background: This paper reports on the validation of a new machine-marked test (MMT) used to short-list candidates applying for training in General Practice. This test uniquely withstood the problems of the UK Medical Training Application Service. The MMT comprises a clinical problem solving (CPS) test and a situational judgement test (SJT). The SJT focuses on 3 non-clinical domains (empathy, integrity, coping with pressure). Although SJTs are used in medical school admissions, this is the first application in postgraduate selection.

Summary of work: Development of an MMT designed to shortlist over 8,000 applicants per annum in the UK. The MMT takes 3 hours administration time per candidate. Evaluation focused on: reliability & validity; fairness; utility; candidate reactions.

Summary of results/Conclusions: The MMT is a reliable (α=.88) and valid selection methodology and is significantly more efficient than previous shortlisting procedures. The SJT provides incremental validity over the CPS, and candidate reactions were positive.

Take-home message: Results have major implications for developing selection methodology for post-graduate training, especially in assessing non-clinical domains. The MMT is used alongside a selection centre via a GP National Recruitment Office. A future research agenda will be presented.

3BB/P1
Anatomy, embryology and histology as an integrated part of the new curriculum
David Kachlík*, Štěpán Jelínek* (1Department of Anatomy, 2Department of Histology and Embryology, Third Faculty of Medicine, Charles University in Prague, Prague, Czech Republic)

The new curriculum has been running at Third Faculty of Medicine, Charles University in Prague, for more than 10 years. As a part of its Cycle I (Theoretical basis of medicine), in Module IA (Structure and function of the human body), an integrated pilot programme concerning joined education of anatomy, embryology and histology with relation to functional fields (physiology and biochemistry) and clinical relevance (radiology endoscopy etc.) has been established. It covers teaching of three morphological subjects within each system part (skeletal, digestive, urogenital, vascular, endocrine, nervous and senses) and is divided in lectures, seminars and practical trainings (dissection course, anatomical macropreparations and histological slides study) headed by one tutor. This programme emphasizes integration of various basic subjects and clinical relevance of the great amount of theoretical information. It operates as a pilot project in its fifth year with highly positive feedback both in results of student in tests and examinations and in student evaluation.

3BB/P2
Learning anatomy: what do radiograms show?
Rumyana Davidova*, Petya Mushatova, Stilyanka Yochkova (Medical University - Pleven, 1, Sv. Kl. Ochridsky str, Pleven 5800, Bulgaria)

Background: The Anatomy program in Medical University of Pleven takes three semesters: first – locomotor system, second – internal organs and dissections and third – nervous system.

Summary of work: There are different methods for increasing the students’ motivation of learning basic science. We implemented an alternative active learning program using radiograms in the studying locomotor system. Students work in small groups of 5 to 8 persons. The class starts with introduction of radiograms with some pathology related to the topic. Students, provided with needed books, atlases and samples of bones or joints, study for three academic hours. At the end of the class each group tries to interpret the radiogram using knowledge about the normal bone or joint structure.

Summary of results: Students accept very positively this type of studying. Active learning groups show higher results in interim tests and greater satisfaction of learning anatomy.

Conclusions: Use of radiograms in teaching anatomy increases academic motivation and helps students in their early clinical contact. It serves also to verify the acquired knowledge.
3BB/P3

Evaluation of students in anatomy studies

Sarmite Boka*, Ruta Zagare*, Umbraško Silvija*, Duleska Ilva*, Ludmila Gavrinčenka* (Riga Stradiņu University, Institute of Anatomy and Anthropology, Kronvalda blvd.9, Riga LV 1010, Latvia)

Aim: Assessment of students after the anatomy course in order to assess the suitability and efficiency of the evaluation processes during the course.

Summary of work: This study was done over a three year period to assess the best method of evaluation during three semesters’ studies of anatomy for efficiency of the students' learning. In the anatomy course the following methods were used: lectures and demonstration sessions, in which teachers transmit information to the students, seminars generally led by teachers, practical sessions for studying organs of different systems and self-learning. After studies of certain topics, there were arranged oral colloquia or written essays combined or not combined with practical evaluation. At the end of the course, knowledge was evaluated by the final oral examination.

Conclusion/Take-home message: The results analysed allow us to draw the conclusion that methods of evaluation during the studies do not influence the final level of practical and theoretical knowledge.

3BB/P4

Implementation of endoscopic approach in human gross anatomy practical courses for undergraduate medical students

Ingrid Kerckaert*, Tom Van Hoof*, Caroline Pouders*, Joris Vandevelde†, Piet Pattyn†, Katharina D’Herde† (Department of Anatomy, Embryology, Histology and Medical Physics, 483; †University Hospital, Department of Surgery; Ghent University, Faculty of Medicine and Health Sciences, De Pintelaan 185, Gent B-9000, Belgium)

Background: Gross anatomy is a fundamental topic in medical undergraduate and postgraduate education.

Summary of work: The Endoagent Centre for Anatomy and Invasive Techniques establishes hands-on practical training courses through endoscopy in postgraduate education by using a new cadaver embalming technique (Thiel, 1992), based on the use of 4-chloro-3-methylenphenol, salts, boric acid and ethylene glycol and only 0.8% of formalin. This procedure results in well preserved organs and tissues with regard to color, consistency, flexibility and plasticity. Articular joints remain freely movable, peritoneal cavity can be inflated, lungs can be ventilated. These corpses are used for laparoscopic bariatric, colon-colorectal, thorax and gynecologic surgery, bronchoscopy and arthroscopy. We will also use endoscopic approaches of cadavers as a new tool to teach anatomy in the undergraduate education (2nd and 3rd year), beside other practical courses. Through endoscopy and a video tower students can participate in demonstrations of topographic anatomy (a station is equipped with a camera for demonstrations through internet or in a college room). These students will have the opportunity to get practical experience by following surgical approaches on Thiel embalmed corpses, in order to reveal the need for detailed 3D anatomical knowledge in the clinic at an early stage in the medical curriculum.

3BB/P5

Applying adult learning principles to teach physiology using standardized patients, simulation, and electrocardiograms

Kevin Krane*, Delia Anderson, Elma LeDoux, Jeff Wiese, Romy Kittrell, Kit Shelby, Norman Kreisman (Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, Louisiana 70112, United States)

Background: An innovative approach utilizing adult learning principles as part of a first year medical student physiology course using standardized patients (SPs), a high-fidelity cardiovascular simulator, and electrocardiograms (EKGs) is described.

Summary of work: During the cardiac physiology and electrophysiology portion of their first-year physiology course, all Tulane medical students were divided into one of 4 rotating small groups as part of a half-day symposium that consisted of: a review of the normal EKG, a demonstration of the application of the EKG using SPs, training on the normal cardiac examination by SP teaching assistants and training on a high-fidelity cardiovascular simulator (Harvey®) demonstrating the cardiac cycle in relationship to the normal cardiovascular examination. Student feedback regarding sessions was obtained by having students complete an open-ended questionnaire as to what they liked best or least.

Summary of results: Student feedback was very positive. The groups provided a safe environment for students to learn the cardiovascular examination while emphasizing an understanding of cardiac physiology and electrophysiology. Students immediately appreciated the value of applying key physiologic principles to clinical medicine.

Conclusion: Using SPs, simulation, and EKGs to teach important and fundamental basic science concepts and knowledge to first year medical students emphasizes adult learning principles.

3BB/P6

Teaching principles instead of facts – a minimalist approach

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Background: Medicine is a knowledge based enterprise. The rate of change in medical knowledge has accelerated steadily. Traditional teaching responded to this "informational challenge" by extending the amount of information to be taught and learned. Time available in a curriculum sets natural limits to this practice.

Aims: Identification of principles of the sciences which are a 'sine qua non' for a medical curriculum.

Summary of work: Experts were asked for important concepts of their disciplines; a concept understood as an abstract, universal entity that could serve to designate classes of entities or relations - universal in that they apply equally to everything in their extension. Two existing curricula at the Charité were analysed to identify the minimum set of concepts and the time devoted to their teaching.

Conclusion: All concepts were found within both curricula, but in the traditional curriculum twice as much time was devoted to the teaching of sciences.

Take-home message: Time for teaching is limited, so it has to concentrate on what is absolutely necessary. In a time of "information crisis" the teaching time devoted to sciences has to be kept to an adequate amount since factual knowledge is only one competency besides others like communication or information management.
3BB/P7
Integrating basic and clinical neuroscience curriculum for medical students
Margaret L White*, Michael Sofroniew (David Geffen School of Medicine at UCLA, 760 Westwood Plaza, Los Angeles, CA 90024-1759, United States)

Background: Basic and applied aspects of neuroscience are essential components of medical education, and provide the necessary background for understanding clinical neurology and psychiatry. The recent rapid increase in knowledge about the brain, paired with curricular change in undergraduate medical education, has led to a rethinking of the organization of neuroscience teaching.

Summary of work: At UCLA, integration of clinical and basic science teaching in the first two years of the medical school curriculum created organ system based Blocks. Since 2003 there have been four iterations of this new curriculum. In each year the Medical Neuroscience Blocks have been organized in different ways. The most recent version has been the most successful.

Conclusions/Take-home messages: Specific organizational strategies, devised over four years of trial and error, will be shared to help schools design a curriculum which successfully integrates the basic and applied aspects of neuroscience for undergraduate medical students.

3BB/P8
Integrating genetic and genomic science into the core curriculum of the Masters of Health Science
Ken Harbert*, Edward Michaud (South College, 3904 Lonas Drive, Knoxville Tennessee 37909, United States)

Background: The Human Genome Project deciphered the complete DNA sequence of the human genome, including the estimated 20,000 protein-coding genes. Ongoing efforts aimed at determining the extent of variation of these genes in different individuals, and how these genetic differences contribute to health and disease is revolutionizing the practice of medicine. Therefore, it is critically important that comprehensive training in medical genetics and genomics is integrated into the core curriculum for Physician Assistant (PA) students. Dr. Francis Collins, Director of the National Human Genome Research Institute, has identified the top ten topics for PA education in genetics and genomics, which are: basic concepts in genetic and genomic science; the family history; preconception and prenatal genetics; newborn screening and pediatric genetics; adult genetics; cancer genetics; the genetics of common disease; pharmacogenetics; ethical, legal, and social aspects of genetics; and genetic counseling and genetic referrals. Here, we describe the manner in which these ten topics are integrated into the core curriculum of the Master of Health Science, Physician Assistant Program, at South College.

Summary of work: There have been concerns about the depth of knowledge attained by medical students learning using PBL. Studies 3-4 years later measuring retention suggest that PBL students gained slightly less knowledge but remember more acquired knowledge.


Conclusions: The integration of clinical findings with basic science concepts appears enhanced in students learning using PBL. If ability to retain, understand, and apply much of this knowledge in a clinical setting in the future is retained as seems probable, the concern of inadequate basic science preparation would seem to be unfounded.

3BB/P9
Teaching basic sciences by audio tours in the Anatomical Museum
Alien W Riedstra*, Peter G M de Jong, Jan H Bolk (Leiden University Medical Center, Postbus 9600, Leiden 2300RC, Netherlands)

Background: The Leiden University Medical Center possesses many specimens gathered together in an Anatomical Museum. With the rise of integrated and patient oriented curricula, the attention paid to anatomy and pathology has decreased. In order to fill this gap, we try to integrate the materials in the museum into the curriculum by featuring an audio tour.

Summary of work: In an audio tour spoken comments about specimens are recorded in digital format. In collaboration with faculty we developed 4 audio tours. We experimented with informative tours as well as with activating ones with built-in assignments. Students visit the museum in small groups and listen to the audio on their own mp3-device. Teachers offer feedback on the specimens observed during the tour in their lectures afterwards.

Summary of results: Teachers and students are enthusiastic about the audio tours. Students prefer informative tours over activating ones and definitely desire more tours in other courses.

Conclusions/Take-home messages: The audio tour is a modern and innovative learning tool that matches closely with the ‘digital’ generation of students nowadays. It is a cheap and easy way to increase attention to basic sciences by integrating an existing collection of specimens in the curriculum.

3BB/P10
How much basic science do students learn in PBL?
Anne M White (Ross University School of Medicine, PO Box 266, Portsmouth, Dominica)

Background: There have been concerns about the depth of knowledge attained by medical students learning using PBL. Studies 3-4 years later measuring retention suggest that PBL students gained slightly less knowledge but remember more acquired knowledge.


Conclusions: The integration of clinical findings with basic science concepts appears enhanced in students learning using PBL. If ability to retain, understand, and apply much of this knowledge in a clinical setting in the future is retained as seems probable, the concern of inadequate basic science preparation would seem to be unfounded.
Despite the globalisation of medicine, medical schools across the world operate in different cultural and health problem contexts and student experience varies considerably around the world. This provides a challenge and an opportunity. The challenge is to support educational needs in such a diverse context: the opportunity is to share expertise, ideas and resources that could prove of value in a different context which would otherwise not be available. This symposium will examine the needs and benefits of sharing medical education resources between countries and medical schools in different parts of the world, both developed and developing. This may include:

- learning resource materials in different formats, model curricula and learning outcome statements, assessment instruments and patient management problems;
- identified individuals who may serve as a contact or a source of ideas and expertise on a range of topics in medical education;
- sharing information, publications and resource materials on developments in medical education;
- training programmes in medical education at different levels;
- opportunities for exchange schemes for staff and students;
- collaboration in research and development programmes in medical education.

A range of options will be considered and discussed by the symposium participants and views will be recorded as to the value of both formal and informal approaches to sharing resources. Appropriate and perhaps innovative developments relating to sharing of resources will be examined.

1630 Introduction and setting the scene (Madalena Patricio)
1635 Different perspectives on the need for sharing resources in medical education
Reforms in medical education in NIS Countries: Common challenges and needs: Galina Perfilieva (WHO Europe)
Networking for health: SEE Health Network: Snezana Cicevalieva (WHO South East Europe)
A view from Africa: veena Singaram (Nelson R. Mandela School of Medicine, South Africa)
1705 Responding to the needs (Madalena Patricio, Pat Lilley, Ronald Harden, Alistair Stewart)
1730 General discussion
1755 Summing up and conclusions
1800 Close of session

4B1 Virtual e-learning education networks for nationwide and international cooperation of medical schools

Stanislav Stipek (Charles University, First Faculty of Medicine, Czech Republic)

This symposium will be of interest to teachers, students, authors and IT specialists who have created or who have in mind to create an internet-based nationwide or international platform (portal) for medical school cooperation in the development and management of e-learning methods for the undergraduate education of medical and health care disciplines. The following questions are proposed for discussion: (1) Optimal size of the cooperating medical school portal networks; (2) Relationships of the nationwide and international education portals and their compatibility; (3) Freedom and optionality of the schools integrated in an educational portal network; (4) Controlled access, authentication, patient anonymity and copyright in the portal network; (5) Economic rules in the portal network. The session should be beneficial for mutual exchange of experience with modern teaching tools based on information technologies in this field.

4B2 Online communities and web-based tools for e-learning

C Paton (University of Otago, Dunedin, New Zealand)

Background: Online communities can assist medical students throughout their careers. They can provide peer support, answers to questions and foster an interactive learning environment. Building successful communities is difficult and requires the implementation of the right technology and correct community management. The Dunedin School of Medicine, University of Otago, has conducted a research project looking at how web based tools such as online communities can assist in teaching medicine at undergraduate and post graduate level.

Summary of work: We conducted a literature review to assess the current best practice for the use of online tools in medical education. We interviewed staff around the university involved in e-learning and conducted technical reviews of web based e-learning tools. The author has also established an online community called ‘New Media Medicine’ comprised of over 40,000 members. The community currently receives 1.4 million page views per month.

Conclusions: We share the results of our research and real-life experiences of running a large online community.

Take-home messages: How to set up and run successful online communities of medical students. How online communities can fit into a suite of web based learning tools to provide a self-directed learning environment.
4B3
A uniform solution to offer and share multimedia education content in the community of Czech and Slovak Medical Faculties MEFANET

Daniel Schwarz (Masaryk University, Institute of Biostatistics and Analyses, Brno, Czech Republic; Ladislav Dusek, Cestmir Stuka, Stanislav Štipek, Vladimir Mihal

Background: The project MEFANET (Medical FAculties NETwork) has initiated effective and open cooperation among medical faculties in the Czech Republic and Slovakia. Sharing of educational resources is one of the elementary goals of the project.

Summary of work: It was decided to develop a uniform solution for educational web portals which are used to offer and share digital educational content in MEFANET. The portals are implemented at the medical faculties besides their own local information systems and they do not aim to substitute existing learning management systems. Students benefit from the portals by looking into the multimedia content at other medical faculties, which may gradually increase the quality of the presented content and motivate authors to cooperate in their creative activities. The criteria for web usability and accessibility as well as modern search-engine-optimization techniques were considered in the design of the underlying data model. The backoffice tools were designed and implemented in the modular form with a high level of scalability. Another valuable component of the solution is a central gate which integrates the information presented in all the portal instances. The solution was completed by the federated single-sign-on authentication framework with the use of Shibboleth inter-institutional web resources sharing. http://www.mefanet.cz http://www.mefanet.eu http://portalmed.muni.cz

4B4
Barriers and motivators for e-learning in everyday routine – how to keep progressing

L Dusék*, S Štipek, D Schwarz (Charles University in Prague, Czech Republic; Masaryk University, Brno, Czech Republic)

Development of e-learning tools is a current challenge of teaching at any level. Using the example of a growing community of all Czech and Slovak medical faculties (network MEFANET: www.mefanet.cz) we can document clear added value of such collaboration: wide accessibility of learning objects, fast progress in individual projects, standardization of outcomes. Our experience however is that even a very modern technological background and progressive central management are not enough to maintain activity of all points in the network. Individual faculties typically have a different spectrum of study programs with differentiated priorities and not all aspects can be easily supported from just one dominating centre operating with some type of learning objects repository. In order to reach a collaborating environment, educational networks should also ensure some type of distribution and implementation pathways, accessible for each at least passively participating school. It refers to standardization of local educational portals and gates. The second barrier that can stop any centrally driven innovation is the resistance of teachers and lack of time capacity and/or human resources. A successful network must therefore create some added value that makes e-learning tools lucrative. That is why the MEFANET network visibly supports e-learning or multimedia tools of some scientific value (atlases, comprehensive electronic textbooks) that is stimulating for leading experts in study programs. Although it is not the core aim of the community, many potential authors can be attracted through such type of outcomes and subsequently they come into contact with “standard” e-learning or are willing to support it in their departments. The MEFANET network develops standards that allow transparent assessment of the outcomes by a broad scientific community. It gives to e-learning a visible position that finally stimulates the required feedback from participating teachers or teams.

4B5
Norms and standards for interoperability of learning object repositories

Ariadne Foundation

Without standards, it is nearly impossible for an organization to integrate quality products into its structure or courses. E-learning standards aim at facilitating and encouraging “share and reuse” of resources and tools, so that e-learning systems are as open as possible, making data and contents as portable as possible. In this context, Ariadne is a European association open to the world, for knowledge sharing and reuse. Ariadne is deeply involved in the development of technical standards to realise an open learning infrastructure. The IEEE LTSC Learning Object Metadata (LOM) standard is based on, among others, our early work. More recent contributions tackle issues related to interactions between learning object repositories: (1) The Simple Query Interface (SQI) protocol provides a solution for transporting queries between search clients and learning objects repositories. Uniform search access to a vast amount of learning objects is possible through the deployment of SQI. SQI is now a CEN ISSS standard; this protocol is complemented by the Prolearn Query Language (PLQL), an abstract query language that can deal with hierarchical metadata schemas (such as LOM standard). (2) The Simple Publishing Interface (SPI) is a protocol to store learning objects in a repository, and enables more objects to be made available for reuse. SPI is currently being standardized in CEN ISSS. Usability and benefits of both protocols are demonstrated through their implementation and deployment within the ARIADNE repository on one hand, and in the context of the GLOBE network on the other hand.
Summary of results: 37% of the students listened at least once to all files, 33% were disturbed by slips of the tongue and would prefer professional speakers, but 78% recommend continuing the project. MCQ results, however, did not differ between listeners and non-listeners (34.1 vs. 32.2 points, p>0.46).

Conclusions: We conclude that podcasts are feasible, but their use “on the side” and their efficiency for knowledge acquisition may be low.

4C/SC2
Student attitudes about podcasting in the medical curriculum
William B Jeffries*, Amanda Lofgreen, Michael G Kavan, Kathryn D Huggett (Creighton University School of Medicine, 2500 California Plaza, Omaha Nebraska 68178, United States)

Background: Syndicated audio delivery of lectures (podcasting) has been a feature of the Creighton School of Medicine curriculum since January, 2006.

Summary of work: In 2006-07, we administered a 24 item survey of first and second year medical students (n = 412) on their podcasting use (frequency/preferences, study habits, class attendance, suggestions for improvement, etc.).

Summary of results: Prevalence of podcast use was high (89.5%). Relatively few students (5.5%) listen to podcasts solely via a portable MP3 player; most review on their personal computers (61.4%). The most prevalent number of podcasts downloaded weekly was between 1 and 5 (40.8%). A majority of students (64.5%) reported listening to podcasts in lieu of attending class. The most prevalent reason for choosing podcasts over actual lecture attendance was versatility of the podcast format (ability to choose time and place, skip portions, sequence differently, vary speed). Nearly half of the students (45.8%) report listening to podcasts at a faster than normal playback speed.

Conclusions: Podcasting has become integral to our students’ study habits. Students prefer the flexibility of presentation, which they can customize to their lifestyle.

Take-home messages: Through podcasting, students can be absent from the lecture hall but still engaged in learning.

4C/SC3
The WikiVet project
Timothy Scase*, Gillian Brown, Brian Cox, Susan Rhind, Nick Short, Ken Smith, Kim Whittlestone (Department of Veterinary Medicine, University of Cambridge, Madingley Road, Cambridge CB3 0ES, United Kingdom)

Background: A community of practice (CoP) was established and a collaborative resource was devised using a wiki to share knowledge, teaching materials and experiences between students and staff at UK veterinary schools.

Summary of work: *WikiVet* (http://www.vetschools.ac.uk/wikivet/) was developed, facilitated by a HEA-funded CoP and supported by the JSC. This project utilised MediaWiki as a platform for a wiki, based on the undergraduate veterinary pathology course. Content from the participating vet schools (Cambridge, Edinburgh and London) was edited and uploaded by undergraduate students. Communication between participants was through GoogleGroup forums, Skype conference calls and face-to-face meetings. Over 630 pages of media-rich content have been generated. Content to aid processing and contextualization of the content has been developed, including problem-based learning exercises, case histories and ‘flash-cards’. The site will expand further by integration of veterinary physiology and anatomy, in collaboration with Nottingham Veterinary School.

Conclusions: The potential for national collaboration using a wiki has been demonstrated with pathology as the ‘test case’. The project will be developed to cover other areas of the undergraduate veterinary curriculum.

Take-home messages: “Web 2.0” technologies have been used to develop a collaborative and nationally important resource for veterinary education.

4C/SC4
Using wikis in the collaborative learning of embryology
Milos Bajetic*, Jelena Kostic, Marija Boksan, Milos Miljkovic, Natasa Zlatic, Jovana Tripkovic (School of Medicine, University of Belgrade, Visegradska 26, Belgrade 11000, Serbia)

Background: This study presents how a Wiki can be used as part of constructivist pedagogical approach, which aims to engage first year medical students in the collaborative learning of embryology. The study describes the implementation of a wiki module as part of a blended course on histology and embryology, based on Moodle LMS.

Summary of work: During the winter semester of 2007/08, 50 first year medical students at the Belgrade School of Medicine took part in a blended course on histology and embryology. Besides possibilities of using different eLearning activities (Lessons, Quizzes, Forums, Glossaries etc.) students, divided in eight small groups (6-7 students per group), were asked to collaboratively create Wiki documents on 8 different embryological topics. At the end of the semester, the students were asked to evaluate their contribution during the process of Wiki creation as well as Wikis created by other groups, using a semi-structured questionnaire.

Conclusions: Wikis can be used to effectively facilitate and support collaborative learning in online environments. Wikis created by students give them the opportunity to participate actively in their own education.

Take-home message: Wiki is powerful tool, which can support an active role of medical students in their embryology learning. Don’t give them a fish, teach them to fish!

4C/SC5
Coachpod - a new tool for preparing students for anatomical dissection
Elizabeth M McEvoy, Robert T Padwick*, S James Coey, Daniel E Fielding, Peter J Gold, Laura E A Harrison, P Narasimha Murthy, Chia Tsyh Tan, Stephen Brydges, Peter Abrahams, Edward Peile (Institute of Clinical Education, Warwick Medical School, Medical Teaching Centre, Gibbet Hill Road, Coventry CV4 7AL, United Kingdom)

Background: Until the anatomy suite in our projected new medical school building is commissioned, we lack on-site facilities for dissection, and Warwick students have to travel an hour to the nearest department at Leicester University for cadaveric dissection.

Summary of work: We have developed, piloted and evaluated the “Coachpod”, a series of video podcasts designed for viewing on i-pods during the journey to prepare the students for each weekly dissection session. Basic anatomy and dissection techniques are described with accompanying educational guidance. The podcasts are highly bespoke, and students have shown appreciation of a resource specifically aimed at them, using their own teachers. Preliminary evaluation was performed using satisfaction questionnaires.

Take-home messages: Coachpod is a simple tool which can be used for creating videos that are platform-agnostic. The tool is easy to use with only a basic level of training, and it is possible for students to create their own contributions.
Conclusion: Students who had not yet experienced a dissection environment reported that the podcasts were helpful in relieving anxiety. Just-in-time development has enabled us to incorporate student feedback to improve subsequent podcasts (more close-ups, more specific practical instructions, more text annotations, less titles/music).

Take-home message: The Coachpod has been found to be a valuable preparation tool for dissection sessions. We will discuss the further evaluation of “Coachpod” and seek to explore the generalisable aspects of purpose-designed locally prepared just-in-time portable learning for medical learners en-route to placements.

4D/SC1
Assessing the assessors - does the Medical Council of Canada meet best practice standards?
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Background: The Medical Council of Canada (MCC) administers the Evaluating Examination globally to candidates trained outside of Canada/US and the Qualifying Examination Part I and Part II, prerequisites to medical licensure in Canada. There is no direct competition for the MCC which was formed by the government in 1912 so internal systems are required to ensure MCC meets standards of assessment excellence with the interests of the candidates and stakeholders as priority. The same responsibility is expected of many programs from undergraduate to postgraduate and into high-stakes assessment around the world.

Summary of work: In consultation with MCC managers and an external auditor, the MCC developed a complete program to assess the compliance of MCC activities/processes with the American Psychological Association (APA, AERA) standards for educational testing.

Conclusions: The list of standards along with the methods for development and tools to support ongoing work will be described. Next steps in ongoing monitoring and lessons learned throughout the implementation will be described.

Take-home message: Licensure assessment in Canada is expected to meet and exceed global standards in testing. Tracking achievement of compliance and continuous quality improvement is a necessary activity to ensure fair, valid and reliable testing of candidates.

4D/SC2
Process optimization in medical education by the use of an item bank – ItemManagementSystem for medicine (IMSm)
K Brass*, A Hochlehnert*, J Juenger, M Fischer, W Georg (Center of Excellence for Medical Assessment, INF 346, Heidelberg 69120, Germany)

Background: The situation in German medicine faculties has basically changed with the enactment of the new regulation for medical examinations. More marked evidence of academic achievement has to be implemented. This is linked to an enormous resource and cost expense in faculties. The cooperation between faculties in an examination network enables synergy, which not only can economise on costs but also guarantees a lasting influence and quality of examinations.

Summary of work: The IMSm is a cooperative project between medical faculties in Berlin, Heidelberg and Munich. Primary goals are the standardization, quality assurance and intra- and interinstitutional exchange of exam-contents in a cost-effective manner. The IMSm is a web-based tool, in which contents of exams can be stored in different types of questions and assessments. The integrated review process ensures the quality of items before the examination. Assessments can be exported for written or computer-based exams and document reader systems. After the examination statistic data can be generated with the integrated statistic module.

Summary of results: Since 2007, 9 medical faculties have been using the IMSm and the item bank has increased to 10,000 items. First experience show good quality improvement and time-saving to work in an interinstitutional examination network.

4D/SC3
A wizard for assisting teachers and students in composing quality R-type items
Clarke Hazlett*, Simon Yip, James Ware (Chinese University of Hong Kong, Office of Educational Services, Faculty of Medicine, Blk B, Flat 9B, Prince of Wales Hospital, Shatin, N.T., Hong Kong SAR, People's Republic of China)

Background: Well constructed R-Type items can measure candidates' scientific and clinical reasoning abilities. However, instructors have difficulty composing these items and often regard the effort as an inefficient use of their time.

Summary of work: Building on work by Case and Swanson who produced item writing templates, an R-type wizard for use on a PC as well as on a server was produced. The wizard initially provides over 1,000 option sets tagged to various disciplines or systems, and topics and themes. Various lead-in questions for either basic or clinical sciences can be selected to complement a particular option set. After making appropriate selections, users only need to compose relevant vignettes. As the wizard can store additional themes, option sets and lead-in questions which the user may add, the wizard's usefulness can be further enhanced.

Summary of results: Use of the wizard by teachers and students has been investigated. Teachers have less difficulty composing realistic scenarios than generating well-developed option sets and lead-in questions. After 30 minutes of training, teachers with no prior experience in item writing can generate an average of six quality items per hour utilizing the wizard. Items generated by students and subsequently used in formative assessments, attained the psychometric standards of high quality assessments.

4D/SC4
Use of the NBME customized examination service for a comprehensive year 1 medical school examination: student perceptions
Jerry W Swanson*, Joseph P Grande, Wojciech Pawlina (Mayo Medical School, 200 First Street, SW, Rochester, Minnesota 55905, United States)

Background: Recently the NBME allowed access to a pool of questions from basic sciences that can be retrieved according to an item classification system designed to enable construction of examinations for courses offered in discipline-based, organ-system, and
problem-based curricular approaches. A secure NBME website was designed to permit medical school faculty members to assemble a customized exam, to review a computer-generated draft exam, and to finalize the items selected for the customized examination. Summary of work: Basic science faculty accessed the NBME pool and developed a 100 question examination covering topics of the first year curriculum; the computer-based examination was administered to first year students. After the students received results of the examination, they completed a survey that included a 5 point Likert scale (1=strongly disagree, 5=strongly agree).

Summary of results: Most students agreed/strongly agreed (4.44) that the examination was useful as practice for Step 1 of the USMLE. There was less consensus among students whether the examination reflected curricular content (3.46) or was effective as a guide for study (2.87).

Take-home messages: The NBME customized examination service can be used to develop a multidisciplinary comprehensive year 1 examination and was felt to be useful by medical students, particularly for USMLE preparation.

4D/SC5
Identification of pattern-markers at the progress test medicine (PTM)
Katrin Brauns* (Charité - Universitätsmedizin Berlin, Assessment-Bereich / Progress Test Medizin, CCM - Virchowweg 24 Charitéplatz 1, Berlin 10117, Germany)
Background: The PTM stresses the aspect of feedback by not only detailing results, but also comparing the results of the students of the own term. In Germany students must regularly participate in this test without consequences. The problem of unmotivated participants, who skew the average values negatively, appears. Up to now pragmatic criteria were used, which were neither theoretically founded nor empirically examined.

Summary of work: In the context of a thesis, three different groups who do not cope with the PTM were differentiated. Two can be easily identified. The group of so called pattern-markers has to be identified by appropriateness measurement. Therefore the Person Conformity Index (PCI) was developed and evaluated.

Summary of results: Simulation and empirical studies showed that the PCI is superior to the conventional criteria in the case of falsely identified pattern-marker.

Conclusions: With the help of this investigation the PTM criteria could be revised.

Take-home message: Appropriateness measurement can be the basos of further investigations for the successful conditions of implementing non-marked, formative assessment.

4D/SC6
The impact of summative assessment of theory on how medical students learn
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Background: It has become axiomatic that assessment impacts powerfully on student learning, but try asking anybody saying this to quote actual research supporting their assertions. There is a dearth of research on the nature and particularly the mechanisms of impact.

Summary of work: The study explored the impact of summative assessment on the learning of theory. Individual medical students were the unit of analysis. Convenience sampling recruited 18 students. Individual, depth interviews were conducted and analysed using the principles of grounded theory. Ethical approval and informed consent were obtained.

Summary of results: Six major sources of impact of assessment on learning were identified i.e., assessment strategy, assessment task, workload, sampling, cues and the individual assessor. Various targets for this impact were identified. The impact of assessment on learning was largely mediated through motivation and emotion. A model has been formulated relating the sources and consequences of impact.

Conclusions: This exploratory study has elucidated some mechanisms by which assessment exerts its impact on learning and adds to scant extant evidence. The proposed framework does not utilise any new constructs, but brings known constructs together in a new way.

Take-home messages: If assessment is to be used as a tool to enhance learning, we need to understand not only what impact assessment has but how that impact is brought about.

Short Communications

4E  Implementing a new curriculum

4E/SC1
Thinking outside the box when the box does not exist: the creation of a novel curriculum
Alex Stagnaro-Green*, Eileen Moser, Patrick Gannon, Keith Metzger, Paul Wallach (Touro University College of Medicine (TouroMed), 19 Main Street, Hackensack 07601-7023, United States)
Background: The need for comprehensive curricular reform has been recognized for decades but has been limited by institutional inertia, pre-existing departmental structure, and limited resources. The creation of new US allopathic medical schools presents a unique opportunity for curricular innovation.

Summary of work: TouroMed was created in 2007 and plans, pending LCME approval, to admit the charter class in 2009.

Summary of results: A unique curriculum has been developed which, following a 15-week primary exposure to the basic sciences, has an 18-months series of combined core science and ambulatory experiences, followed by a year devoted to in-patient training and core basic sciences. The final year is a bridge to GME and includes critical care, and public/international health. No basic science courses exist as distinct entities; instead all are integrated across the entire curriculum. For example, gross anatomy dissection occurs throughout years 1-3. A month in Year 2 & 3 is devoted to student-focused independent-inquiry.

Conclusions: A new medical curriculum has been created based on comprehensive integration of basic and clinical sciences, opportunities for independent inquiry, and increased clinical responsibility over the years.

Take-home message: The creation of new schools presents a golden opportunity for advancing medical education via innovative curricular innovation.
4E/SC2
The challenges of implementing a new (final) year 4 curriculum in the UBC Distributed MD Undergraduate Programme
Cindy-Ann Lucky*, Angela Towle (The University of British Columbia - Faculty of Medicine - MD Undergraduate Programme, Gordon and Leslie Diamond Health Care Centre, 2775 Laurel Street, 11th Floor, Vancouver, British Columbia V5Z 1M9, Canada)

**Background:** The UBC MD Undergraduate Programme planned and implemented a new final year core curriculum to realize established goals for graduating students.

**Summary of work:** Students had 24 weeks of Elective time and were required to select balanced schedules. Elective evaluation was done through faculty approval, student feedback and focus groups. Student performance was evaluated through comprehensive assessment forms. A new course, Preparation for Medical Practice, and an exit OSCE were held for the first time.

**Summary of results:** An unbalanced demand and supply of Electives led to capacity crunch in some clinical disciplines. Students needed detailed information sessions and faculty guidance to make Elective selections; schedules needed serial monitoring to ensure compliance with curriculum requirements. Faculty and administrative staff needed ongoing communication about the mechanisms established for curriculum implementation.

**Conclusions/Take-home messages:** The first medical class to experience a new final year core curriculum must be properly prepared and apprised of the decision-making processes. Student involvement in planning and evaluation is important. The requirements and expectations of postgraduate programmes must be considered. Resources, including contingency funds, must be identified and administered flexibly. Ongoing quality control and improvement is achieved through well designed and applied evaluation surveys. SBAR (Situation, Background, Assessment, Recommendations) is a valuable reference tool.

4E/SC3
Planning New Medical School Curriculum: An Innovative Approach
Nehad El-Sawi* (Kansas City University of Medicine and Biosciences, USA), Douglas Wood (A.T. Still University, School of Osteopathic Medicine in Arizona, USA)

**Background:** Global interest in the establishment of new medical schools is showing signs of resurgence. The importance of the interwoven relationship between leadership, faculty development, integration, technology and instructional methods in the establishment of such schools is evident, but many academicians need guidance in this pioneering effort. The presenters will provide framework for sustainable curriculum planning and briefly address strategies, issues and lessons learned in curriculum development and management.

4E/SC4
Curricular reform in Afghanistan
Hirotaka Onishi*, Kiyoshi Kitamura, Takuya Adachi (International Research Centre for Medical Education, University of Tokyo, has worked for curricular reform in Kabul Medical University, Afghanistan, with the support from Japan International Cooperation Agency since July 2005. The internal war in 1990s completely destroyed the main university hospital. Learning resources, such as textbooks written in local languages, are limited. Learning climate was teacher-centred.

**Summary of work:** Problem-based learning (PBL) and case-based learning (CBL) were introduced and implemented as components of undergraduate curricula. Clinician educators in provisional university hospitals accepted and utilized CBL smoothly but teaching staff in the campus were sometimes too busy to contribute to PBL. Both teaching methods generally satisfied the students. These curricular reforms somewhat changed the learning climate from teacher-centred to student-centred.

**Conclusions:** PBL and CBL seemed effective to change the learning climate in a country where the rehabilitation process is ongoing. When PBL is implemented, however, availability of human resources of teachers was important.

**Take-home messages:** Assessment of needs of teaching staff in competing roles would be the key for a success in curricular reform in developing countries.

4E/SC5
An institutional process for innovation and improvement in medical education
Linda C Perkowski*, Majka B Woods (University of Minnesota Medical School, 420 Delaware St S. E., MMC 293, Minneapolis MN 55410, United States)

**Background:** Historically, medical education has struggled with the concept of curriculum reform. As the medical school experience evolves towards outcome-based education, we must implement explicit pre-planning, documentation of failures and successes, and positive forward momentum to ensure lasting impact.

**Summary of work:** The authors will describe how documenting, interpreting, analyzing and understanding the data in the traditional system are imperative to successful transformation across the continuum. They will outline their competency development process; involvement of the stakeholders; struggles and successes. The evolution of a systematic process used to encourage a variety of constituents to explore and address critical components of outcome-based education will be discussed.

**Conclusions:** Outcome-based medical education is the focus of reforms throughout the continuum of medical education. This process requires attention to the current culture and how a new conceptual model may be adapted. Efforts are likely to fall short of the primary goals if these issues are unaddressed. Understanding and documenting this process serves as a model for other institutions attempting this cultural shift.

**Take-home messages:** Creating a system that encourages sustainable reform from a traditional to an outcome-based medical education model is an iterative process. Involving stakeholders within and external to the academic institute is key to creating replicable and sustainable change.
4F/SC1
Quality control of training practices in UK Deaneries: similarities and differences in the process of approval visits
Glynis Buckle*, Johnny Lyons-Maris, Mohan Kumar, John Pitts (Oxford Postgraduate Deanery (NESC), The Triangle, Roosevelt Drive, Headington, Oxford OX3 7RY, United Kingdom)

Background: The Postgraduate Medical Education and Training Board (PMETB) is in the process of developing a Quality Assurance Framework for postgraduate medical education. The assessment and maintenance of standards in general practice training is particularly relevant to the quality assurance framework. This study set out to document the existing structures and processes in deaneries across the UK and to compare similarities and differences.

Summary of work: Structured telephone interviews were conducted by 3 senior educators with deanery leads for training practice approval visits in each of the 22 deaneries across the UK and covered topics which included timescale for approval; supporting paperwork; composition of visiting teams; duration of visits; videotaped teaching.

Summary of results: Common features were revealed to be length of approval time and use of structured application forms. Marked differences included the length of the visit and composition of the visiting teams.

Conclusions: Whilst all deaneries feel that their quality control of training practices is robust, this study identified many variances in procedures. If we wish to develop some standardisation of the process, further studies are required to explore which components of the existing systems are most effective in delivering a robust Quality Assurance mechanism for GP training practices.

4F/SC2
Program accreditation - when is an adverse ruling “good news?”
Deborah Danoff, Margaret Kennedy* (The Royal College of Physicians & Surgeons of Canada, 774 Echo Drive, Ottawa, ON K1S 5N8, Canada)

Background: The Royal College of Physicians & Surgeons of Canada is mandated to accredit all Canadian specialty and subspecialty residency programs except Family Medicine. Rulings can be approval, provisional approval, or notice of intent to withdraw accreditation. Programs that receive any ruling except approval require follow-up within two years. The consequence of an adverse ruling are significant for the program and the institution and can be considered “bad news”. Anecdotal data suggest that in some cases the adverse ruling facilitates changes the program wanted to make.

Summary of work: Programs receiving an adverse ruling since 2005 were systematically evaluated. Data collected and analysed included program characteristics, citations leading to adverse rulings, and actions taken in response to rulings including new resources made available to the program. These data were related to changes in ruling status at follow-up review.

Summary of results/conclusions: Adverse rulings generally had a positive impact on programs leading to increased attention from senior administration, department chairs and program directors as well as outlay in resources. On average, two years after receiving adverse rulings, programs received full accreditation. However, risk factors for continuing adverse rulings were identified.

Take-home messages: Adverse program accreditation rulings can be “good news” by leading to increased attention and resources for programs in difficulty.

4F/SC3
Revisiting the curriculum for postgraduate education in internal medicine at a Swiss teaching hospital
Matteo Monti* (Centre Hospitalier Universitaire Vaudois - CHUV, Rue du Bugnon, Lausanne 1011, Switzerland)

Background: Over the past few years, two major changes occurred at a Swiss teaching hospital: Firstly, the revision of the learning objectives for the postgraduate education in Internal Medicine; secondly, the reduction of the work schedule to a 50h/week in public hospitals. These changes raised the question about the rationalisation of existing learning modules. The aim of our project was to fill the gap between the new learning objectives and our teaching activities.

Summary of work: We applied Kurt Lewis “Force Field Analysis” to analyse the current situation, and found that the driving forces were the support of the Department Head of Medicine, and the human and financial resources allocated to the project. The restraining forces were: the initial lack of interest and motivation from the Head of Internal Medicine unit; the hostility of some specialists, who were worried about giving internists access to some functional tests and about the supplementary teaching working load; and the lack of specific knowledge in educational strategies by the project leaders. Fortunately we were able to transform some of these restraining factors into positive input: the initial scepticism was transformed into enthusiasm; the hostility into collaboration, achieved by involving some reticent elements in the pilot committee and giving them the opportunity to participate to the decision making process; in addition the opportunity offered to the project leader to enrol in a master in medical education programme.

4F/SC4
Evaluation of specialist training on a national level in Sweden
Ulla Andin, Wolfram Antepohl*, Ola Björgell, Petter Borna, Kristina Cesarini, Anders Johansson, Sven Karlander, Lars Kihlstöm, Anders Westerlund (Office for Postgraduate Education, Östergötland County Council, University Hospital, Brigadgatan 19, Linköping SE-581 85, Sweden)

Background: In Sweden, postgraduate deans act as local/regional coordinators and facilitators for specialist training (ST) over specialty borders. An informal group of postgraduate deans from all Swedish university hospitals has been working for several years to promote quality in ST.

Summary of work: In 2007, this group modified a web-based questionnaire, developed and previously used at Karolinska University Hospital, in order to create a tool for surveying ST-quality on a national level. The questionnaire was e-mailed to 2140 ST physicians in all eight Swedish university hospitals.
Summary of results: 1155 ST-physicians answered the questionnaire (54%). A majority (70%) felt that they had adequate support from specialists. 99% had a formally appointed supervisor, however only 26% had structured meetings with their supervisors at least once every month. 18% had time for self study allocated. Sufficient systematic feedback concerning skills and knowledge during ST was only reported by 13%. In contrast, most respondents would recommend other specialist training in their department/hospital (78%). Apart from certain (very interesting) parameters, results did not differ greatly between university hospitals.

Conclusions/Take-home messages: The survey provides a valuable baseline in relation to the major reform of ST in Sweden that is about to be initiated. Several areas in which improvement is needed have been identified. National data are a valuable benchmarking tool that can help to promote change locally.

4F/SC5
The effect of including clinical structured assessment on a Brazilian residency selection exam

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Background: The process for residency admission in many Brazilian medical schools is under modification, with several residency programs adding clinical skills assessment with simulated patients (CSA) to multiple choice questions (MCQs) and/or short essays. This study aimed to revise the effect on the ranking of candidates when two sets of assessment methods directed to different domains are used for the residency selection process.

Summary of work: In December 2007, after pre-selection based on MCQ and short essays (phase 1), 434 (26.6%) of 1631 residency candidates were submitted to the CSA (phase 2). CSA included 5-stations with simulated patients on Pediatrics, Obstetrics Gynecology, Internal Medicine, Surgery/Emergency, and Public Health.

Summary of results: The mean score was 6.54 (SD=1.08) for phase 1, and 6.73 (SD=1.14) for phase 2. The ranking order of candidates differed between phases 1 and 2, with a significant independence between the lowest and the highest quintile candidates for each phase (Fisher test, p=0.0005).

Conclusion: MCQ/short essays and clinical skills assessment classified candidates differently, according to their potential to assess specific competence domains.

Take-home message: The combination of methods focusing different domains can improve the selection process, providing a more comprehensive residency assessment exam.

4F/SC6
Educational governance in practice: developing and embedding quality assurance in postgraduate medical education in the UK

Zoe-Jane Playdon*, Pam Shaw*, Richard Bregazzi*, Sue Cavendish* (KSS Deanery, University of London, 7 Bermondsey Street, London SE1 2DD, United Kingdom)

Background: In the UK, through the advent of the Postgraduate Medical Education Training Board (PMETB) postgraduate medical education (PGME) has seen the introduction of mandated curricula across specialties from Foundation to core and higher specialty training. Quality management of curricula and educational governance of PGME are devolved to Postgraduate Deaneries. The UK National Education Advisers Forum (NEAF) comprises Education Advisers who work within PGME. This paper presents work undertaken by NEAF to identify innovative ways to ensure high quality PGME at Deanery and local NHS Trust level.

Summary of work: A case study approach identified innovative models for embedding PGME quality assurance. A descriptive thematic methodology focused on aspects of quality management and educational governance to extract commonalities and uniqueness of the models.

Summary of results: Three models were identified. Commonalities reflect requirements for educational governance. Uniqueness related to local contextual differences. What helps/hinders educational governance was identified.

Conclusions: Sharing of practice across Deaneries is essential. It is likely that embedding of the quality management process takes place only if local needs are incorporated.

Take-home messages: It is essential to: (1) identify issues of principle/practice in educational governance; (2) take account of local needs/local ownership; (3) share good practice.

Short Communications

4G Teaching and learning: case studies

4G/SC1
An interdisciplinary approach to the application of neuroanatomy to practice in occupational therapy and speech and language therapy

Ruth McMenamin*, Deirdre McMahon, Brendan Wilkins, Agnes Shiel (National University of Ireland Galway, Co. Galway, Ireland)

Background: Occupational Therapy (OT) and Speech and Language Therapy (SLT) students may find it difficult to appreciate how the theoretical knowledge gained in Neuroanatomy can be applied to client assessment and intervention. This approach attempts to bridge the gap between theory and practice and to develop students' knowledge of the multidisciplinary team.

Summary of work: OT and SLT students are assigned to interdisciplinary groups and given a paper clinical neurological condition with consequences relevant to both disciplines. Students work together to plan and deliver a 25 minute presentation addressing: 1. Neuroanatomy of the condition; 2. Signs and Symptoms; 3. Investigation, Examination and Assessment; 4. Intervention plan; 5. Evaluation of outcome. Students also produce a group report summarising their findings.

Summary of results: The work produced by students demonstrates their application of theoretical Neuroanatomy to clinical conditions. Feedback from students identified the advantages of interdisciplinary group work and the opportunity to develop communication and negotiation skills.

Take-home messages: Applied learning of Neuroanatomy rather than rote learning has resulted in deeper processing and application of theory, presentations, reports and written examinations. Students have commented on the value of learning about interdisciplinary working and interventions.
4G/SC2
Fact and fiction: the use of House M.D. as a teaching tool for medical students
W Stephen Costigan*, Rachel Isba*, Ged Byrne, Paul O’Neill (University of Manchester, ATR4, 1st Floor ERC, University Hospital of South Manchester, Southmoor Road, Manchester M23 9LT, United Kingdom)
Background: Medical education is undergoing significant changes, with the responsibility for learning increasingly shifting to the learner. Recent innovations such as PBL have encouraged students to seek out their own information sources – traditionally textbooks. More recently, however, use of other sources such as the internet, has become more widespread. TV drama may also be an under-recognised source of student knowledge.

Summary of work: This study looks at how much information medical students learned from an episode of the TV drama “House M.D.” In the pilot study, 25 students were randomised into three groups: Group 1 watched an episode of “House M.D.;” Group 2 read written materials; Group 3 received no intervention. All students completed a purpose-written, 16-item MCQ test immediately after the intervention and again 2 weeks later.

Summary of results: Group 1 achieved the highest mean score in both sets of tests, and there were significant differences between groups 1 and 3 in test 1 (p = 0.02) and a trend toward differences between the groups in test 2 (p = 0.073). Further analysis was limited by small group size.

Conclusion: TV dramas have the potential to be used as a supplementary teaching tool, and the main study, with a larger cohort will help further elucidate this.

4G/SC3
Characterising the concept of Emotional Learning in medical students: student transitions, safe identities and their manifestations
N Lown*, E Pearson, C Bundy, T Dornan (School of Medicine, University of Manchester, Stopford Building, Manchester M13 9PT, United Kingdom)

Background: We have published a model of Experience Based Learning, according to which medical students’ supported participation in workplace activities leads to affective learning outcomes as well as intellectual and practical outcomes. The former, which we provisionally termed ‘Emotional Learning,’ include a sense of identity, confidence, motivation, and reward.

Summary of work: 497 year 3 medical students generated 34,075 Likert and 697 free text responses from a 47 item evaluation instrument. These were analysed with a mixed methodology approach comprising principal components analysis with varimax rotation and grounded theory qualitative analysis. A 7 factor solution accounted for 68% of the variance in the quantitative items and the emotional learning items loaded onto a single factor. Text analysis characterised Emotional Learning as students’ management of their identity transitions by actively resisting the label of doctor and constructing a concrete, ‘safer’ identity as ‘Student Doctor,’ with sense of identity, confidence, motivation, and sense of reward in an epiphenomenal relationship.

Summary of results: These data validate the concept of Emotional Learning and show how students manage their identity in relation to their experience.

Take-home message: Experience Based Learning stimulates medical students to take on identities other than that of doctor which manifests as sense of identity, confidence, motivation, and sense of reward.

4G/SC4
A multi-institutional investigation of undergraduate medical students’ perception of reflective learning in the curriculum
Pirashanthie Vivekananda-Schmidt* and the NPPD Consortium Research Group on Undergraduate Reflective Practice (Academic Unit of Medical Education, Sheffield University, 85 Wilkinson Street, Sheffield S10 2GJ, United Kingdom)

Background: The reflective components of Personal and Professional Development (PPD) in the Northern Medical Schools’ PPD (NPPD) Consortium are driven by different pedagogical curricular perspectives.

Aim: To discover medical students’ perception of reflective learning in four NPPD consortium medical schools.

Summary of work: Focus groups with second year students were undertaken at Sheffield, Leeds, Hull/York and Manchester medical schools in 2007. The interviews were audiotaped and transcribed.

Summary of results: Data analysis by a thematic approach generated four key themes: understanding of reflection, factors that promote and support reflection, barriers to reflection and reflection and future practice.

Conclusions: The findings will inform the curriculum for PPD by increasing awareness of the potential barriers and leading to improved communication of the purpose, process and outcomes.

Take-home messages: (1) Successful embedding of RP requires tutors who promote and value reflection themselves. (2) Introduction of RP in the early years of the curriculum received mixed reactions. (3) Peer driven reflective processes were popular. (4) Written reflections were perceived both as supporting and hindering the development of reflective skills. (5) Assessment was perceived as hindering the development of reflective skills.


4G/SC5
Investigating knowledge representation, causality and analogical reasoning in osteopathic medicine
Jorge Esteves*, John Geake, Charles Spence (Oxford Brookes University, School of Health and Social Care, Marston Campus, Jack Straws Lane, Marston, Oxford OX3 0FL, United Kingdom)

Background: Despite more than 30 years of research in the health professions, models of clinical reasoning in osteopathic medicine remain largely theoretical.

Summary of work: We investigated differences in clinical case mental representation in osteopathic students and experienced osteopaths. An emphasis was placed on the role of encapsulated and biomedical knowledge, causal and analogical reasoning. Thirty participants at different levels of expertise were instructed to study two case descriptions presented separately on a computer screen. On completion of a diagnostic task, participants were presented with target items that consisted of presented signs and symptoms, unrelated signs and symptoms from analogous cases and inferred encapsulated, biomedical and osteopathic items.

Summary of results: Osteopaths were more accurate in their diagnosis than students. Osteopaths were faster and made significantly fewer errors for item types than students, particularly on the encapsulated and unrelated signs and symptoms.
Conclusions: Results suggest that although encapsulated knowledge becomes important as expertise develops, biomedical knowledge may nevertheless retain its centrality in osteopathic diagnosis. Furthermore, the osteopaths' superior performance on analogous signs and symptoms suggests that analogical reasoning may also play an important role in case familiarity.

Take-home messages: Investigating the role of different types of knowledge and reasoning strategies can support the effective implementation of PBL strategies in osteopathic medicine.

AMEE Fringe

4H AMEE Fringe 1

4H F1/1

The son of FOSCE
Jamie Newman*, Elizabeth Wilkinson*, Jennifer Martinez*, Catherine Newman* (Mayo Clinic, 200 1 St SW, Rochester, Minnesota 55905, United States)

The FOSCE (Funny Objective Structured Clinical Exam) has been used at the University of Texas and more recently at the Mayo Medical School. First presented at the AMEE Fringe in 2006, and described as the Monty Python School of learning, the FOSCE has undergone several advanced mutations, but remains a humorous way to involve students in the education process and stimulate discussion. Originally aimed at simple physical findings and diagnosis, the FOSCE now crosses over into the more challenging realms of patient miscommunication, advanced misdiagnosis and evidence-absent medicine. In this latest iteration, tailored specifically to the Fringe, audience members may be selected to make a diagnosis, communicate in a challenging situation, educate a patient, or stamp out disease.

4H F1/2

Being able to be a Don Quixote
Nazan Karaoglu* (Selcuk University, Meram Medical Faculty, Akyokus, Meram, Konya 42080, Turkey)

If you give a doll or a toy car to a child he or she can imagine the doll as a living baby and the car as a real race car. A child can win real victories with lead soldiers just in a little room. What a great ability it would be if we could imagine like a child. In this presentation I would like to share with you my experiences I had with my first year students from medical faculty while teaching CPR using models. After sessions I always ask them if they feel themselves sufficient in applying CPR to humans or not. Students generally said that "this is only a model. It surely will be different with a living body". This was the beginning point of creating Don Quixotes from my students. I ask every student to improvise a story about the model he or she works on beginning with a name, an event or surroundings etc. I discovered different issues to teach and discuss with my students while they were becoming Don Quixotes. Teaching clinical skills is an entertaining experience for me because our models are living bodies from now and then.

4H F1/3

Moving pictures and medical professionalism
Melinda Henry*, James Newman (Mayo Clinic, 200 First Street SW, Rochester MN 55905, United States)

Over the course of the last five years, the Internal Medicine Interest Group at the Mayo Medical School and the Mayo Clinic Center for the Humanities have cosponsored a medical film series. The purpose of this series is to bring together a diverse audience to discuss issues raised by these films. The typical audience includes medical students, medical consultant staff, retired physicians, and members of the community. In this Fringe presentation, we will use movie clips to highlight interesting topics and encourage discussion, especially around the issues of hospital safety and professionalism. The Hospital, starring George C Scott, is very useful for demonstrating, through decidedly black humor, how this can be accomplished. The film raises issues such as suicide, professionalism, improper patient relationships, medication errors and other forms of nosocomial and iatrogenic mayhem. Additionally, No Way Out, Sidney Poitier's first movie, brings up the crucial issues of race relations in the medical environment. We hope for a lively discussion, with popcorn and other movie treats provided!

4H F1/4

Plato's Symposium – a neglected but concise introduction to sexual medicine
Oliver Wendt1, Victoria Vida1, Stefan Reinsch2, Antonia Pelz2, Moritz Gebauer2, Jörg Pelz1 (Charité Universitätsmedizin Berlin, 1Ruhr-Universität Bochum and 2Europa-Universität Viadrina Frankfurt (Oder), Charitéplatz 1, Berlin 10117, Germany)

The prevalence of sexual problems in society is generally underestimated. 34% of males and 41% of females report having a current “problem” in the medical literature. Sexuality in humans affects main issues of human life – body, soul and society. In almost every medical discipline physicians are confronted with sexual issues. The spectrum of dysfunctions is wide ranging. 52% of all patients wish to speak to their GP yet only one in ten do so. The question remains, how doctors can receive evidence based training to tackle this problem. Interestingly, many aspects of sex, love and Eros as sources for medical interventions were intensively discussed during a prominent boozing party 416 BC. This once-in-a-thousand-years event is documented in Plato's Symposium. Sex for reproduction, love as art and Eros as master of pleasure and tears, homosexuality, platonic (sic!) and physical love, self-harming and violence against others, genuine diseases and transmitted entities were covered and are still central topics of every sexual medicine textbook. Sex and its medical aspects apparently changed little or not at all from ancient times until today. For our patients' sake we emphasize to follow the master and therefore strongly recommend Plato's foundational text as standard in medical education.

4H F1/5

Adding a touch of magic to your teaching
Daniel K Sokol* (St George’s, University of London, Centre for Medical and Healthcare Education, St George’s, University of London, Cranmer Terrace, London SW1 7ORE, United Kingdom)

This interactive session features a live magic performance and will demonstrate ways to incorporate magical effects in medical teaching. From ethics to physiology, magic can be used to teach, entertain and create a positive atmosphere in the teaching environment. Whether you are presenting in front of 400 surgeons in an austere lecture theatre or a small number of students in a problem-based learning class, a well-chosen magic effect can illustrate ideas and initiate discussion while boosting your likeability as a presenter. Basic sleight-of-hand techniques will be taught to participants, with brief explanations of the psychology underpinning the magic. This session is a rare opportunity to witness a magic performance, learn some of the closely guarded secrets of magic, and instill an element of wonder in your teaching.
Evaluation of clinical teaching

4I/SC1

Congruence between clinical teaching and student learning
Louise Young*, Helen Heussler (The University of Queensland, School of Medicine, Herston Rd, Herston, Brisbane, Queensland 4006, Australia)

**Background:** The need for quality clinical placements is an issue for medical schools internationally who are dealing with significantly increasing student numbers and changing demographics and illness patterns. There is a need for a cost-effective, evidence-based curriculum in clinical settings for the benefit of both teachers and learners. This project aimed to determine where and how learning and teaching occurred during one clinical rotation and to identify constraints (perceived and real) to learning and teaching opportunities.

**Summary of work:** Mixed methods of structured (time sampling) and unstructured observations, focus group discussions (students and teachers) and questionnaires were used. Congruence between teaching and learning objectives and documentation of valued learning were recorded.

**Summary of results:** Many actions were teacher focused, involving low cognitive effort and passive learning. Learners perceived low value in working ward rounds. Teachers and learners had similar views on the value of different learning opportunities and characteristics of good clinical teaching. Constraints on learning imposed by organisational issues occurred frequently.

**Conclusions:** Clinical attachments should acknowledge the most valuable learning opportunities. Programs for professional development of clinical teachers are imperative to facilitate valued higher cognitive learning opportunities. It is often logistical and organisational issues that detract from learning.

**Take-home messages:** How to evaluate curricular innovations.

4I/SC2

Improving the science content in clinical teaching
M A Martimianakis*, C Dewa, B D Hodges (University of Toronto, Wilson Centre for Research in Education, 200 Elizabeth St. 1ES-559, University Health Network - Toronto General Hospital, Toronto MSG 2C4, Canada)

**Background:** There has been very little empirical research examining the factors that either impede or facilitate the integration of new knowledge into clinical teaching, in the context of collaborative teaching modalities. This study explores institutional attitudes, priorities and expectations with regard to integrating scientific knowledge into the clinical training programs in the Department of Psychiatry, University of Toronto.

**Summary of work:** Sixteen (16) semi-structured interviews (1.5 – 2 hours each) were completed with faculty and medical school decision-makers. The interviews were transcribed and analyzed iteratively using meaning categorization method.

**Summary of results/Conclusions:** Faculty members receive little explicit training on integrating and applying new knowledge from other disciplines while institutions assume that such skills are naturally attained. Emergent themes point to pervasive attitudes regarding what constitutes ‘relevant’ and ‘appropriate’ knowledge for clinical practice. There is some overlap in the challenges faced by basic and social scientists in translating their work into clinically relevant knowledge. However, social scientists face additional challenges of establishing the ‘applicability’ and ‘credibility’ of their work, as decision-makers cited the perceived political and emotional nature of some social science research as problematic.

**Take-home messages:** To improve collaborative modalities, empirical studies must focus on exposing the complexity of integrative processes with consideration not only on how to meet institutional priorities, but also on how these priorities are experienced by faculty.

4I/SC3

Innovations in clinical attachments: feasibility and success of a new six week attachment at Southampton University Medical School
David Smith, Faith Hill*, Anja Timm*, Liz Shewry, Joy Sanders (University of Southampton / Division of Medical Education, School of Medicine, Boldrewood Campus, Southampton SO16 7PX, United Kingdom)

**Background:** Medicine in Practice 3 (MiP3) represents a curriculum innovation at the beginning of the final year of the medical undergraduate programme at Southampton. It consists of 3x2 week blocks in acute care, general practice and medicine and prepares students specifically for critical care and some shorter rotations. It focuses on history and examination skills, perioperative care and practical procedures and specifically addresses the needs of the very sick patients. Other aspects include handover, shift work and preparation for clinical assessment and the completion of portfolios.

**Summary of work:** MiP3 ran for the first time in 2007 and was evaluated in terms of its feasibility and longer-term success using both quantitative and qualitative methods.

**Summary of results/Conclusions:** Questionnaire data indicated high satisfaction ratings among students. Students’ own explanations of what worked (and why) – collected through focus groups – showed how MiP3 could be improved and developed further. Placement coordinators and clinicians attended a review day and were surveyed (with some follow-up interviews to follow). Full analysis and results will be available at the conference.

**Take-home messages:** How to successfully introduce a new clinical attachment involving acute care, general medicine and general practice. How to evaluate curricular innovations.

4I/SC4

Clinical clerkship monitoring system
Bee-Sung Kam*, Sun-Ju Im, Jin-Sup Jang, Son-Young Park, Young-Hwe Kim, So-Jung Youn (Pusan National University, School of Medicine and BK21 Medical Science Education Center, 10 1Ga, Ami Dong, Seo Gu, Pusan 602-739, Republic of South Korea)

**Background:** Monitoring student performance on standardized outcome measures related to clerkship content is necessary. To improve the quality of programs provided for students, feedback of the students is a must. Monitoring medical student performance on their clerkship programs to assure that curriculum methods are appropriate, valid and reliable, equitable and systematically applied should not be ignored. In this context, asking students for feedback and preparing statistical results is technically the only solution. A paper based operation would require much time and human effort.

**Summary of work:** Mixed methods of structured (time sampling) and unstructured observations, focus group discussions (students and teachers) and questionnaires were used. Congruence between teaching and learning objectives and documentation of valued learning were recorded.

**Summary of results:** Many actions were teacher focused, involving low cognitive effort and passive learning. Learners perceived low value in working ward rounds. Teachers and learners had similar views on the value of different learning opportunities and characteristics of good clinical teaching. Constraints on learning imposed by organisational issues occurred frequently.

**Conclusions:** Clinical attachments should acknowledge the most valuable learning opportunities. Programs for professional development of clinical teachers are imperative to facilitate valued higher cognitive learning opportunities. It is often logistical and organisational issues that detract from learning.

**Take-home messages:** How to evaluate curricular innovations.
**Summary of work:** With the tight schedule that teachers and students in medicine have, we tried to copy the same task into the computer to derive statistics.

**Summary of results:** Surprisingly not only the human power and time reduced but also the efficiency, quality and cost saving of giving out question papers increased. In addition we built some more functionality into the program to make it easier and more interesting. Students willingly submitted their feedback in a timely manner.

**Conclusions:** This paper presents the Clinical Clerkship Monitoring System to monitor the behaviour of student performance on their clerkship programs in order to redesign courses based on evaluation and feedback.

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### 4J/SC5

**Joining up the dots: transferring procedural skills into clinical practice**

Janet Skinner*, Barbara MacSween, Lisa Anderson, Val McDowall, Janette Moyes, Stephen Lynch (University of Manchester, Medical Teaching Organisation, Room GU.315, Chancellor’s Building, 49 Little France Crescent EH16 4SB, United Kingdom)

**Background:** Most medical students are taught a set of core clinical procedures such as venepuncture in the simulated environments of clinical skills centres. This study aims to explore the experiences of undergraduate medical students in transferring these procedural skills into clinical practice.

**Summary of work:** Semi-structured interviews were carried out with fourteen final year Edinburgh medical students.

**Summary of results/Conclusions:** Students had little experience of performing procedures on patients in the middle years of the undergraduate programme. Reasons for this were widespread and included lack of: opportunities, encouragement, confidence, motivation, and prioritisation. In contrast, in the final year, students had widespread experience of performing most procedures and felt competent. Reasons for this included shadowing junior doctors, a ‘fear factor’ driving the desire to become competent before graduation and more confidence in the clinical environment. Students felt less experienced at certain procedures that are often performed by nurses.

**Take-home messages:** The positive role modelling of senior students working alongside junior doctors helps to motivate students to become competent at procedures. Students may benefit from a similar interaction with nurses. Students in the middle years need encouragement and better signposting of opportunities to facilitate the transfer of procedural skills into clinical practice at an earlier stage.

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### 4J Tackling problems encountered with PBL

#### 4J/SC1

**What are the problems PBL tutors face with PBL groups? A review of the literature**

Monica Quadir*, J Fuller* (Centre for Medical Education, Barts and The London School of Medicine and Dentistry, London E1 2AT, United Kingdom)

**Background:** PBL has proved a highly contentious matter that has provided a countless number of debates amongst researchers and educationalists alike. However, the effect of group dynamics, and the problems that arise from this, is an area of PBL that has not yet been fully explored.

**Aim:** The aim of this project is primarily to answer this question: what are the common problems PBL tutors face with their groups, and how do they overcome these? The endpoint of this project is to produce a staff-development DVD with the view of providing a reference point for both inexperienced and experienced tutors, recognizing these problems and offering advice and guidance on how to deal with them.

**Summary of work:** The project involves a detailed literature review with particular reference to primary research identifying problems in PBL groups, coupled with qualitative interviews with experienced PBL tutors. The DVD will provide a resource for understanding how the PBL process should run, and how to address common problems within the PBL process.

**Summary of results:** In our presentation, we will identify the key challenging issues for PBL tutors and use this to inform a discussion on strategies to address these.

#### 4J/SC2

**PBL plus: Facilitating integrated problem based learning**

Lis Cordingley, Chris Harrison, Joan Davies*, Caroline Boggis, Jo Hart (University of Manchester, School of Translational Medicine, Stopford Building, Oxford Rd, Manchester M13 9PT, United Kingdom)

**Background:** Significant proportions of undergraduate students in PBL medical programmes give low priority to behavioural and social science (BSS) components of integrated PBL cases. Researchers have suggested the following reasons: lack of perceived relevance by medical students and/or tutors, difficulty with BSS concepts themselves, viewing BSS as ‘common sense’, and insufficient contact with patients.

**Summary of work:** A series of professionally made short video clips of the patient and health professionals were produced to bring an existing integrated PBL case ‘to life’ (“PBL plus”). Medical students half way through their first year of a PBL programme were divided into two; half watched the films before their first PBL meeting (during which groups agree their learning agenda), the remainder watched after the first meeting. Learning agendas for 28 PBL groups were analysed to compare the proportion of BSS content in each.

**Summary of results:** Evaluation of PBL-plus included unprompted comments indicating that it helped students recognise BSS aspects of the case. Detailed comparative analysis identified specific BSS content areas students prioritised.

**Conclusions/Take-home message:** Without additional input, cues in PBL cases may be insufficient to support learning of B&SS content. Video clips of patients and professionals reinforce the importance of these components.
4J/SC3  
Tutor and student perceptions about group dysfunction in small group studies during problem-based learning  
Aysen Melek Aytug Kosan, Sabri Kemahli* (Ankara University Faculty of Medicine, Ankara Universitesi Tip Fakultesi Dekanlik (Morfoloji) Binasi, Sihhiye, Ankara 06100, Turkey)  
Background: The study was carried out to determine perceptions of Year I and III students and PBL facilitators about the frequency of and effects of dysfunction in learning process during PBL sessions and tutors’ responsibilities to overcome dysfunctions.  
Summary of work: Turkish version of Evaluation of Group Session Inventory was used. The study was carried out among 126(50%) Year I, 119(50%) Year III students and 88(60%) tutors.  
Summary of results: The most frequently perceived dysfunction dimensions were lack of elaboration among Year I and lack of interaction for Year III students. Compared to Year I students, Year III students perceive that lack of interaction, lack of elaboration and lack of participation are more frequent. Year I and III students scored the occurrence of these dysfunctions higher than the tutors. Year I and III students perceived the most inhibiting dysfunction in learning process as difficult personalities and lack of interaction. Year I and III students’ high perception of tutor’s responsibility were found to be difficult personalities. Both students and tutors perceive that it is the tutors’ responsibility to manage group dysfunctions.  
Conclusion: Perceptions regarding the magnitude of different dimensions differ among students and tutors, as well as between two groups of students.  
Take-home message: There is a need to plan and carry out multi-dimensional studies to investigate group dysfunctions. A training program should be developed to increase knowledge and skills of tutors and students on group process and dynamics.

4J/SC4  
The lecture was considered the most interesting teaching and learning activity by teachers in problem-based learning curricula  
Gudrun Edgren (Lund University, P.O Box 157, Lund SE-221 00, Sweden)  
Background: Lund University has 8 undergraduate health education programmes including medicine, most of them problem-based since the early 1990s. There is a faculty development programme, where the introductory course prepares teachers for taking part in different teaching and learning activities (TLA), and includes an individual self-selected written assignment.  
Summary of work: The 317 first assignments were selected for analysis. The themes of the assignments were categorized, and the two most popular themes were further analyzed in assignments from five courses.  
Summary of results: The most popular TLA was the lecture. Other popular themes were problem-based or case-based learning, supervision of PhD-students, motivation, learning and teaching styles, assessment, seminars and postgraduate training. The teachers who wrote about lectures had a teacher-centred perspective and saw lectures as interesting challenges. The teachers who wrote about PBL were mostly concerned with difficulties such as non-participating students and non-functioning groups.  
Conclusions: The results indicated that many teachers had a teacher-centered perspective and did not share the commitment to PBL expressed in the curricula. Possible reasons for this and implications for faculty development will be discussed in the presentation.  
Take-home message: In PBL-curricula the teachers were more interested in lectures than in other TLAs.

4J/SC5  
Introducing task-based learning in a preclinical medical curriculum: identifying barriers to change  
Maira S Lewitt*, Eva Grenbäck, Anna-Lena Hulting (Karolinska Institutet, Department of Molecular Medicine & Surgery, Stockholm, Sweden)  
Background: The overall aim of this work is to develop a more flexible teaching strategy in a changing curriculum environment at Karolinska Institutet. In Endocrine Physiology we have identified Task-based learning (TBL) as a strategy that builds on our current teaching strengths, facilitates horizontal integration, and confers adaptability including vertical integration.  
Summary of work: We have previously identified, through interviews with staff, tensions between roles as teachers and researchers, with two distinct communities of practice. We have now evaluated the impact of introducing a pilot TBL occasion on the students.  
Summary of results: Although most (74%) agreed that TBL facilitates learning, written comments revealed a perception that it is not consistent with the philosophy of teaching at Karolinska Institutet, where there is separation of preclinical and clinical teaching and an emphasis on lectures. We are now introducing this strategy to students in the new medical degree curriculum, which is a more integrated programme, although the preclinical-clinical divide continues, and are re-evaluating the impact.  
Conclusions: We have identified barriers to introducing TBL in this environment. The teachers are experiencing tensions that limit their participation in curriculum change, while students perceive that TBL is not aligned to the learning environment at Karolinska Institutet.

Research in Medical Education Papers
4K Students - selection and progression

4K/RP1  
Generalizability of a composite student selection program  
Lotte D O’Neill, Lars Korsholm, Birgitta Wallstedt, Berit Eika, Jan Hartvigsen (University of Southern Denmark, IOB, Campusvej 55, 5230 M Odense, Denmark)  
Research Question: The aim of this study was to estimate the generalizability of a composite selection procedure which included non cognitive admission parameters. The objectives were threefold: To estimate the contributions to variance in scores, to estimate the generalizability of individual admission elements, and to estimate the overall generalizability of the supplementary admission process for both courses.  
Context: The reliability of individual non-cognitive admission criteria in medical education is controversial and little research has been done on their validity as predictors of subsequent success in medical school.
Even so, non-cognitive admission criteria, such as the admission interview, appear to be widely used in selection to medicine to supplement the grades of a qualifying exam. Since performance is content specific, using a composite of several admission variables, as opposed to just a single admission variable, has the potential to increase the overall admission test reliability by sampling more broadly. Test reliability is important (though not exclusive) evidence of test validity. Very few studies have examined the overall test generalizability of composites of non-cognitive admission variables in medical education. It is possible that combining several non-cognitive variables may yield a reliable and valid adjunct to admission based purely on previous grades. The University of Southern Denmark combined four admission variables in a composite selection to medicine and chiropractic, consisting of: Qualification (application form information), written Motivation (essay format), Common Knowledge (multiple choice test), and a semi-structured Admission Interview.

Methods: Data from 412 applicants (307 medical applicants, 105 chiropractic applicants) who participated in the admission in 2007 were available for analysis. Each admission parameter was double scored using two random, blinded, and independent raters. Variance components for applicant, rater and residual effects were estimated for a mixed model with the REML method. The reliability of obtained applicant ranks (G coefficients) was calculated for individual admission criteria and for the composite admission procedures using multivariate generalizability theory.

Results: The generalizability coefficients (G) of the individual parameters used for the two courses were, Qualification: G=0.65/0.75, Motivation: G=0.10/0.50, Common Knowledge: 1.00/1.00, and Interview: G=0.86/0.88. A pre-selection procedure for admission to medicine which combined Qualification and Motivation scores showed insufficient generalizability (G=0.45). The generalizability of the final weighted composite selection procedure was estimated to G=0.80/0.82 for the two courses.

Discussion: The generalizability of the written Motivation found in this study was poor (G=0.10/0.50) but in concordance with the recent literature. Ghost editing (editing by another party), insufficient sampling of content, too few ratings per applicant, and the experience, heterogeneity and numbers of raters used are all factors which may have lowered the generalizability of the written motivation. The generalizability of the admission interview estimated in this study (G=0.86/0.88) was high compared to previous studies, but some confounding is likely. For instance, failing to disentangle or measure important variance components (here items and occasions), that are possible contributors to error may lead to confounding of the results. Composition and weighting of admission parameters based purely on intuition may result in unacceptable levels of generalizability exemplified by the pre-selection procedure for medicine (G=0.45). This study found reasonably good generalizability of two final composite selection procedures using several non-cognitive admission parameters (G=0.80/0.82). Seeking evidence of variance components and generalizability of individual admission variables allows for improvement of test strategies.

Conclusion: Composite selection procedures using several non-cognitive admission parameters may yield reasonably good generalizability coefficients however, composition and weighting of individual parameters should not be random. Test reliability is fundamental for overall test validity. This study adds an example of the usefulness of multivariate generalizability theory in composite selection procedures.

1Salvatori P. (2001). Reliability and validity of admissions tools used to select students for the health professions. Advances in Health Science Education Theory & Practice. 6(2):159–175.


Decentral selection of medical students: a controlled experiment

L C Urlings-Strop, T Stijnen, A P N Themmen, T A W Splinter (Erasmus MC, Institute of Medical Education and Research, room ff 2.10, Postbus 2040, 3000 CA Rotterdam, Netherlands)

Research Question: To investigate whether an assessment of both non-cognitive and cognitive abilities enables us to select students with a better achievement and higher participation in extracurricular activities compared to students selected by lottery.

Context: World-wide, selection of students before admission to medical school is ongoing since the number of applicants exceeds the number of places. Conclusions about the validity of the selection methods are seriously hampered by lack of controls. Only undergraduate Grade Point Average (GPA) has moderate predictive value for subsequent academic performance with correlations from 0.40 to 0.501. In addition, the Medical College Admission Test (MCAT) has an acceptable predictive value with correlations of 0.31 to 0.54 for GPAs obtained in the third year at medical school2. Nevertheless, it has become evident that all other selection methods, including the widely used interview, have low correlations with academic performance1. In 2001 we started a controlled experiment for selection of medical students. The controls were students who were admitted by the operative national lottery system.

Methods: The decentral selection procedure consisted of two successive steps. In the first step, applicants were assessed by the quality and quantity of extracurricular activities before application. Only activities with a duration of two years or more and carried out during the last three years before application were taken into account. There were five categories: 1. activities in health care; 2. activities in management and organization; 3. exploitation of talent e.g. music, sports and science; 4. academic education; 5. additional pre-university education. The second step consisted of five cognitive tests on a medical subject. In order to be selected for admission, students ought to have passed four out of five tests and the average of all five tests had to exceed 5.5 (on a scale of 1 to 10). The decentral selection procedure started in 2001. The follow up was five years which resulted in the inclusion of four consecutive cohorts, each followed for at least two years. During that period 389 students were decentrally selected and 652 admitted by lottery. Criteria for student achievement: percentage drop outs within two years after registration, study rate (mean credits/year) and GPA of first examination attempts. Optimal study rate was defined as the acquisition of the maximum of 60 ECTS/year, any other study rate as average. Preadmission variables ‘age’, ‘gender’ and ‘pre-university education GPA’ were included. Also information was gathered about extracurricular activities such as participation in important administrative functions or in an optional research-master degree at Erasmus MC or an additional study at Erasmus University.

Results: Data concern first four years of medical school. Selected students had a relative risk of dropping out that was 2.5 times lower compared to the lottery admitted controls. The percentage of optimally performing students and the GPA of first examination attempts was only significantly different for cohort 2001. Preadmission variables were not different between both groups. Of the selected students, 19.2% participated in extracurricular activities, in comparison with 9.6% of the controls.

Conclusion: This is the first study to show in a controlled way that an assessment of cognitive and non-cognitive abilities can select students who will perform better at medical school.
The main differences between the decentrally selected and lottery admitted students are the reduction of dropouts with 60% and the fact that they more often participated in extracurricular activities of importance. The contribution of each of the two assessment steps to the outcome of the procedure is unknown as are the psychological student characteristics which are correlated with successful completion of the first two study years and with GPA in medical school. These questions will be the subject of further research.

Salvatori P (2001) Reliability and validity of admissions tools used to select students for the health professions. Advances in Health Sciences Education 6:159-175.


4K/RP3

The value of the Standard Error of Measurement in informing rules of progression in an undergraduate medical course

R B Hays, T Sen Gupta, J Veitch (School of Medicine, James Cook University, 4811 Townsville, Australia)

Research Question: The aim of this study was to explore the value of the Standard Error of Measurement (SEM) in making decisions about remediation and progress of students with examination scores at or below the pass/fail borderline.

Context: The setting was a new Australian medical school that developed a new, highly integrated curriculum that is congruent with its mission to produce graduates for underserved areas. Priority was given to the development of assessment methods, formats, items and rules of progression, in order to guide appropriate student learning SEM. An early decision was made to use the SEM as a more precise measure of confidence in scores of individual students.

Methods: An analysis of de-identified, pooled data of borderline candidates was conducted to determine the SEM for each examination and the progress of candidates according to four score bands, from pass score +/- 1 SEM, between 1 and 2 SEM below the pass score, between 2 and 3 SEM below the pass score and more than 3 SEM below the pass score. The majority of these candidates re-sat examinations after relatively short periods of guided, but relatively non-specific remediation. The impact of poor performance in individual Domains and subject areas was also recorded. A score at +/- 1 SEM resulted in progress following re-testing for 83% of examinations after relatively short periods of guided, but relatively non-specific remediation. The impact of poor performance in individual Domains and subject areas was also recorded. A score at +/- 1 SEM resulted in progress following re-testing for 83% of candidates. These risks are similar to the theoretical confidence in scores within the four bands. Most students with lower scores had weaknesses in several Domain/subject areas.

Conclusion: The results suggest that for students with very poor results, as defined by 2 or 3 SEM below the pass mark, the usual process of brief remediation and rapid re-examination is unlikely to be efficient use of resources. Instead, students should be offered a longer period of remediation and re-examination, which in most cases means repeating the failed year. An alternative would be the development of or a specifically tailored additional learning experience, which is likely to be resource intensive. Further, the results have guided the development of progression rules that are based on data and have withstood a small number of appeals against fail decisions. In conclusion, this analysis shows that the Standard Error of Measurement is a useful tool in making confident and defensible decisions about how to manage candidates with examination scores at or below the borderline, so long as attention is paid to established examination design principles.


4K/RP4

Burnout and suicidal ideation among US medical students: is burnout reversible and does recovery decrease suicidal ideation?

Liselotte N Dyrbye*, Matthew R Thomas, F Stanford Massie Jr, David V Power, Anne Eacker, William Harper, F Steven Durning, Christine Moutier, Danny Szypol, Paul J Novotny, Jeff A Sloan, Ta (Mayo Clinic College of Medicine, 200 Second Street SW, Rochester, MN 55906, United States)

Research Question: Can students with burnout recover or is the trajectory one of inevitable worsening? If recovery is possible, does recovery decrease the likelihood of adverse consequences associated with burnout such as suicidal ideation (SI)?

Aim: To explore whether burnout in students is reversible and investigate the association between burnout status and SI.

Context: SI is a well-established predictor of suicidal planning and attempts. The suicide rate among physicians is greater than that of the general population despite a similar lifetime prevalence of depression. Symptoms of burnout are also prevalent among medical students. Little is known about how suicidal ideation (SI) relates to burnout.

Methods: All (1st-4th) students (n=1321) at 5 U.S. medical schools were surveyed in 2006 (time-point 1) and 2007 (time-point 2) with the Maslach Burnout Inventory. In 2007 SI was assessed by students: “During the past 12 months have you had thoughts of taking your own life?” Students were also asked if they had spoken with a counselor/mental health provider during the last month. Participation was elective and responses were anonymized. The institutional review board at each institution approved the study prior to participation of their students. Analysis included descriptive summary statistics for estimating prevalence and simple linear regression for assessing trends.

Results: Longitudinal data were provided by 858 (65%) students. Most of these students were female (55%), between the ages of 25-30 (66%), and single (52%). Few students (10%) had sought mental health care within the previous month. At time-point 1, 370/792 (47%) students met criteria for burnout. Of these 370 individuals, 271 (73%) remained burned out when surveyed in the spring of 2007 (“chronic burnout”) while 99 (27%) were no longer burned out at time-point 2 (“recovered from burnout”). Among the 422 students who were not burned out at time-point 1, 132 (31%) experienced burnout at time-point 2 (“new burnout”), while the remaining 290 (69%) were not burned out at either time point (“never burned out”). Burnout was strongly associated with suicidal ideation (OR 3.46, p<0.001). Students who recovered from burnout were less likely to report SI during the previous 12 months than students with chronic burnout (7% vs 18%, P=0.01) and had a rate of SI similar to those who had never experienced burnout (7% vs. 5%, P=0.38). Students who developed new burnout were as likely to report SI at time-point 2 as students with chronic burnout (12% vs. 18%, P=0.12). Students who were never burned out were less likely to report SI than students with new burnout (P=0.01) and chronic burnout (P<0.0001). Students with chronic burnout and those who recovered from burnout reported similar use of mental health care at time point 2 (10% vs. 13%, P=0.29)
**Conclusions:** Our study demonstrates that recovery from burnout is possible among American medical students. Recovery from burnout was associated with a dramatic decrease in the likelihood of SI. We recommend that medical schools should: 1) implement student wellness programs and curricular changes to reduce distress and optimize the learning environment; 2) have a system in place to identify and treat burnout and SI; 3) provide counseling support and confidential mental health services, and 4) educate students about burnout and SI. Additional studies are needed to further explore the relationship between burnout and SI and to identify the factors and experiences that help students recover from burnout. Such information could inform development of student wellness programs.


**Summary of results:** Using logistic regression we developed a prognostic model to predict retrospectively whether 1,793 students from five consecutive cohorts, would complete the first-year curriculum within two years. Predicting variables included students’ GPA, number of credits, number of exams taken, exam success rate and pre admission variables such as age and high-school GPA. Summary of results: With the predicting variables “less than maximum amount of credits after 3 exams (out of 10)” and “failure on exam 4 and 5” we were able to classify correctly 91.0% of the students. Specificity and sensitivity of the model were 64.0% and 94.1% respectively.

**Conclusion:** Our study demonstrates that recovery from burnout is possible among American medical students. Recovery from burnout was associated with a dramatic decrease in the likelihood of SI. We recommend that medical schools should: 1) implement student wellness programs and curricular changes to reduce distress and optimize the learning environment; 2) have a system in place to identifying and treat burnout and SI; 3) provide counselling support and confidential mental health services, and 4) educate students about burnout and SI. Additional studies are needed to further explore the relationship between burnout and SI and to identify the factors and experiences that help students recover from burnout. Such information could inform development of student wellness programs.
4L/SC5
Educational Burnout Inventory: Developing a new scale
G Seydaoğlu (Cukurova University, Faculty of Medicine, Biostatistics Department, Balcalı, Adana 01330, Turkey)

**Background:**
The term ‘burnout’ is used for the reduction of psychological and physical energy that comes out after the process of chronic stress related with work. It was hypothesized that burnout that can be defined as exhaustion of energy comes out after the process of a chronic stress related with academic workloads. In this research, a new psychometric device was developed in order to define the burnout levels among students.

**Summary of work:** Critical thinking inventory, fatigue inventory and demographical questionnaire and an initial form consisting of 80 items with a 9-point response scale ranging from 1 to 9 were applied to all students in each grade. To determine the validity of the scale, structure validity, factor analysis has been estimated. The internal consistency, factor loadings, error variances and test/retest reliability were evaluated. In addition, gender×age, and gender×grade interaction effects on burnout was analysed by MANOVAs.

**Conclusion:** The findings suggest that the Educational Burnout Inventory (EBI) is a valid and reliable instrument, and can be used in the field of education.

**Take-home messages:** Stress, burnout and dissatisfaction can have detrimental effects on academic performance including the requirement to learn new things, to use intellectual skills and develop new skills among students.

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4M/SC1
International quality labels and undergraduate mobility
Maja Basnov¹, Line Engelbrecht Jensen², Jan Hilgers³, Katharina Kulike⁴, Daniel Rodríguez Munoz⁵ (‘International Federation of Medical Students’ Associations (IFMSA), ²International Medical Cooperation Committee (IMCC), ³German Medical Students’ Association (bvmd))

**Background:** For many years, medical students from all over Europe, organised in the network of the International Federation of Medical Students’ Associations (IFMSA), have been and still are actively discussing the implementation of the Bologna action lines in the field of medicine.

**Summary of work:** Outcome papers of the annual Bologna Process Follow-up Workshops, such as the “Bologna Declaration and Medical Education” and the “European Core Curriculum – the Students’ Perspective”, both published in Medical Teacher, have paved the way towards constructive discussion with other stakeholders.

**Summary of results:** The topic of this year’s conference, “International quality labels as opportunity to improve undergraduate mobility” has stimulated discussions of the participants and international experts and led to a policy paper of the IFMSA. This policy paper will be presented at the session.

**Conclusion:** Medical students know that acknowledgement of achievements gained during international exchanges such as the Erasmus-programme is often very difficult. Further steps need to be taken to improve undergraduate mobility. Our paper aims to stimulate discussion among medical schools to change this situation.

**Take-home messages:** International joint effort of all stakeholders is needed to establish a system of undergraduate mobility guaranteeing comparability of students’ achievements.

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4M/SC2
Is it time for flexibility in our curricula?
OMR Westwood*, S Leinster, JR Weinberg (Barts & The London School of Medicine & Dentistry, Centre for Medical Education, Old Medical College Building, Turner Street, London E1 2AD, United Kingdom)

**Background:** The main function of healthcare and medical education is to provide appropriately skilled individuals. We propose that delivery of an effective healthcare workforce is dependent upon a radical rethink of our education system. Current rigid boundaries and silo training do not reflect the changes that are now taking place in healthcare delivery. The concept and delivery of curricula with multiple stepping on and stepping off points is discussed. This curriculum model would acknowledge areas of common learning, allowing ease in retraining for another profession, but without compromise to standards in academic knowledge and skills competences.

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4L/SC4
Mandatory cognitive skills groups for at-risk medical students
K Winston*, J Harris-Alleyne, H Myers, C Schipul, D Vogel (Ross University School of Medicine, PO Box 266, Picard West Indies, Dominica)

**Background:** Each semester, some Ross University students who fail courses are allowed to repeat the semester on probation. These students rarely seek help, either during their failing semester or during their repeat semester. Data show that only 24% of repeating students ever subsequently pass USMLE Step 1. Data from voluntary cognitive skills sessions are very positive, so we have asked: Could mandatory attendance at cognitive skills sessions improve outcomes for at-risk medical students?

**Summary of work:** All students repeating first semester now attend cognitive skills sessions. They meet weekly in small groups, with an academic success faculty member, to follow a constructivist syllabus designed to assist them in study, test-taking and reasoning skills. Students’ progress through the school is tracked.

**Summary of results:** After three semesters: 85% reach semester 2 (n=113) (compared to 68% previously); 67% reach semester 3 (n=75) (54% previously). These results are significant (p<0.001 and p<0.05 respectively), and participant surveys show strong satisfaction.

**Conclusions:** Student progress is being tracked to determine long-term effects, and we continue to refine the program, working to identify exactly which elements are of most benefit. However, early indications are that mandatory participation in a cognitive skills program emphasizing collaboration and reflection can improve outcomes for at-risk medical students.
The 2.5 year national project focused on defining competencies generic to all medical disciplines, and for each level of education and training. Generic competencies include those that are required for medical practitioners to function effectively as medical professionals, communicators, health advocates, cultural advocates, scholars (educators, researchers), managers, and collaborators. These competencies are essential for ensuring that medical practitioners are well-prepared to handle the diverse challenges they may face in their professional roles.

The history of medical education in the Sudan is both long and interesting. It began in 1924 and has passed through several different phases and stages. Despite numerous difficulties and constraints along the way, vast experience has been gained and many achievements made, all of which have had positive impacts on the health system in the Sudan and the Region. This paper aims to share the experiences and lessons that have emerged from the journey of medical education in the Sudan. The paper discusses the strengths and weaknesses that accompanied this journey, explores the future need for continuing support and dialogue from international colleagues to maintain momentum and recommends some future plans for this.

Successful adoption of TUSK has been due to hard work, motivation and sensitivity of student ambassadors and appropriate choice of courses and development of local content by the curricular team.

The ‘educational path counsellors’ (EPC) deal with challenges in connection with the educational path. His advice is open to all (potential) (inter)national students. (Bio)medical students 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, educational programs abroad. As such the EPC is functioning as a facilitator of mobility of (European) (bio)medical students.

EPCs function as experts in the implementation of the Bologna Process and have become an example of ‘best practice’. We plea for a European network of EPCs to enhance mobility and the coming of the European Higher Education Area.

We present some practical solutions to facilitate student mobility (inter)national, (inter)disciplinary and also in time. It is made possible through side-way trajectories, broad bachelors, ‘minor’ trajectories, Accreditation of Prior Learning (APL), Accreditation of Prior Experiential Learning (APEL) and the European Credit Transfer System (ECTS). Within a period of only three years the amount of students in a flexible learning path increased to more than 50%. This evolution involves a brand new challenge in dealing with study tracks for students, academic and administrative staff.

The ‘educational path counsellors’ (EPC) deal with challenges in connection with the educational path. His advice is open to all (potential) (inter)national students. (Bio)medical students 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, educational programs abroad. As such the EPC is functioning as a facilitator of mobility of (European) (bio)medical students.

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The components of medical education and training in Australia are medical school education, prevocational postgraduate training and vocational postgraduate training. In recent years, each of these components has been the focus of major curriculum development initiatives. For jurisdictional, funding, and workload reasons, the developments in each component have been pursued in relative isolation, introducing the risk of gaps, redundancies and inefficiencies. The purpose of the project described in this presentation was to address integration (“bridging”) across the current silos of education and training.
The initial agreed focus of the project was ‘Doctor as Educator’. This presentation will describe: (1) The rationale for this project and for ‘Doctor as Educator’ as its initial focus; (2) The project’s unique national collaborative development and implementation process; (3) The conceptual framework and competencies for ‘Doctor as Educator’, and (4) The mechanisms adopted for integrating these competencies into medical education and training in Australia.

4N/SC2
Managing the transition from medical school to the UK ‘Foundation Programme’: A retrospective evaluation of the Peninsula Medical School curriculum
Nicola Brennan*, Alan Bleakley (Peninsula Medical School, Knowledge Spa, Royal Cornwall Hospital Trust, Treliske, Truro TR1 3HD, United Kingdom)

Background: The transition from medical student to practising doctor is notoriously stressful. How a junior doctor manages this transition can be used as a way of retrospectively evaluating a medical school’s curriculum ‘climate’. The Peninsula Medical School (PMS) (UK) offers an undergraduate curriculum based on leading edge approaches to medical education that claims to prepare undergraduates both professionally and personally for transition to work. A recently inaugurated longitudinal evaluation of graduates objectively examines such claims.

Summary of work: This paper reports on one aspect of a comprehensive, multi-methods evaluation study being conducted at the PMS that encompasses domains of knowledge, skills, values, and identity construction. As part of this study interviews investigating the management of the transition from medical school to the Foundation programme were held with a sample of 28 junior doctors based in the South-West Peninsula Deanery in 2007. The participants also completed a battery of inventories probing potential transitional issues including readiness for ‘teamwork’, ‘interprofessional learning’ and ‘tolerance of ambiguity’. It was possible to compare PMS graduates with another, mixed group of graduates from other schools.

Summary of results/Conclusions: There were differences in how graduates from the PMS and graduates of other medical schools managed the transition.

Take-home messages: Focusing upon coping with transitions enriches evaluation and can provide important insights into the effectiveness of a curriculum. This includes articulating what is ‘value added’, and how a curriculum ‘climate’ can translate from undergraduate study to work as a doctor.

4N/SC3
Smoothing the path: the place of a pre-intern year in the transition from medical student to doctor
A J Dare*, N Fancourt, T Wilkinson, J Rudland, W Bagg (Faculty of Medical and Health Sciences, University of Auckland, Park Road, Grafton, Auckland 1310, New Zealand)

Background: The transition from medical student to junior doctor is recognised as a challenging time. In New Zealand, final year medical students undertake a trainee-intern year, designed specifically to help prepare them for the junior doctor role.

Summary of work: We undertook a study to evaluate the learning that occurs across the trainee-intern year. A questionnaire was distributed to all 5th and 6th year medical students in New Zealand. This assessed self reported competency and performance in clinical, professional and role development domains.

Summary of results: Significant improvement in all three domains occurred during the trainee-intern year. The greatest improvement occurred in the performance of procedural skills and clinical tasks and in the level of clinical responsibility taken. At the end of the trainee-intern year, 91.5% of students felt prepared to be a junior doctor, versus only 53% at the end of 5th year.

Conclusions: The New Zealand trainee-intern year prepares medical graduates for their first junior doctor position. Importantly, it helps facilitate the move from competence towards performance critical for the junior doctor role.

Take-home messages: Medical training is a continuum, and the construct of a final year medical course can aid in smoothing the transition into working life.

4N/SC4
Can undergraduate assessment material be used for postgraduate assessments?
Adrian Freeman*, Chris Ricketts, Lee Coombes (Peninsula Medical School, St.Luke’s Campus, Magdalen Road, Exeter EX2 4LD, United Kingdom)

Background: At the Peninsula Medical School students are assessed on their medical knowledge using progress testing with a 125 item paper 4 times a year. The items are set at the level of knowledge expected of a newly qualified doctor. Local clinicians who work with the students expressed an interest in sitting the test for themselves.

Summary of work: On 5 occasions we have offered the test to volunteer clinicians. We will show comparative data on three groups of doctors: recently qualified, certified hospital specialists (Consultants) and certified family medicine specialists (GPs) and show the comparison with 5 years of medical students on the same assessment material. We have data on over 150 such doctors and continue to collect data.

Summary of results/Conclusions: Although this is only pilot data and using volunteers the data indicate a continuation in scores in all groups after qualification. From the year one medical student through to the established specialist the same questions have been used to demonstrate increasing scores in applied medical knowledge tests.

Take-home messages: Assessment material can be used outside the undergraduate setting. The same tests can be used throughout the postgraduate journey and might indicate continued progression.

4N/SC5
Job design, learning resources and assessment in prevocational medical education
Ian Graham* (Postgraduate Medical Education Council of Victoria, P.O. Box 2900, St. Vincent’s Hospital, 41 Victoria Parade, Fitzroy, Victoria 3065, Australia)

Background: The Australian Curriculum Framework for Junior Doctors (ACFJD) was developed in 2006. It provides guidance to Australian prevocational medical trainees regarding their professional development immediately following medical graduation and prior to entry into medical vocational training programs.
Summary of work: As an ESME 2007 project, the Medical Director of the Postgraduate Medical Education Council of Victoria has undertaken the following activities: 1. Critically evaluated prevocational roles, job descriptions and rosters in the context of the ACFJD; 2. Developed a series of prevocational podcasts, based on ACFJD topics; 3. Undertaken a survey of 120 new medical graduates in the State of Victoria to document their self-assessment of their knowledge, skills and experience under each capability identified in the ACFJD.

Conclusions: (1) Creative job design and specific learning resources, tailored to the needs of prevocational trainees, are required in the clinical workplace. (2) Junior medical officer training and development can be monitored and represented using a ‘radar plot’ graphical display. (3) This information can be used to plan and evaluate prevocational training.

Take-home messages: Prevocational training in Australia requires job design strategies, learning resources and assessment programs that are tailored to the special needs and expectations of the prevocational medical workforce.

40/SC2
Qualitative analysis of tools acquired in an international education leadership program
William Burdick*, Debby Diserens, Summers Kalishman, Stewart Mennin, Maryann Eklund, Page Morahan (Foundation for Advancement of International Medical Education and Research, 3624 Market Street, 3rd Floor, Philadelphia 19119, United States)

Background: The FAIMER Institute is an international education leadership program, started in 2001, that aims to increase leadership and management skills, education methodology skills, and develop a community of educators. Health sciences educators from low resource countries participate in a two year program comprised of a yearly residential component of several weeks, each followed by a distance learning component. Residential sessions overlap so that a co-mentoring relationship develops across Fellowship classes.

Summary of work: Fifty-nine entered and 56 Fellows from 19 countries completed the program during its first five years. All Fellows completing the program were interviewed using a structured questionnaire for approximately one hour at the end of the second residential session. Interviews were recorded and excerpted written transcripts were produced. Transcripts were independently coded by two reviewers, then re-coded after a consensus conference.

Take-home message: This instrument has the potential to be a very useful tool in evaluating undergraduate program effectiveness.
Summary of results/Conclusions: Useful tools most commonly cited by Fellows included concepts in change management (e.g., stakeholder identification, “found pilot programs”, two minute presentation), project management skills (e.g., use of Gantt chart), appreciative inquiry and appreciative leadership, use of logic model, and Myers-Briggs Type Indicator. Take-home messages: Education leadership concepts are new to many health science educators. Useful tools to aid leadership and management are valued by faculty across a wide range of cultures.

4O/SC3
A national questionnaire on leadership and management education in UK medical schools
Jim Price*, Deborah Saltman (Brighton & Sussex Medical School, Institute of Postgraduate Medicine, Mayfield House, Falmer, Brighton BN 1 9PH, United Kingdom)

Background: The importance of clinical involvement in leadership and management in the NHS has been recognised in recent years, and there have been suggestions that there is a need for more formal education for medical students in these topics. The next version of ‘Tomorrows Doctors’ due out in 2009 is likely to have a stronger emphasis on leadership and management at undergraduate level, and medical schools will need to reassess their curricula with these areas in mind.

Summary of work: A questionnaire was developed and sent to all 30 UK medical schools inquiring about the current state of play in this area. Responses from 23 schools (77%) were received and the results will be presented.

Summary of results/Conclusions: Acknowledgement that this was an important area to study; confusion over terms and conflation of the topics; widely variable views on the importance/value of formal inclusion in the pressurised medical curriculum; consensus about how students learn; some consensus that management skills training should be included – but in the later years. Take-home messages: Tomorrow’s Doctors 2009 will place more emphasis on these topics and curriculum review will be needed in all UK schools; much good work already exists, although there is wide variation, both in content and in perceived importance and relevance.

4O/SC4
Enhancing the quality of clinical supervision and clinical leadership through a unique workplace-based postgraduate program
Judi Walker*, Mira Haramis (University of Tasmania, Rural Clinical School, Locked Bag 3513, Burnie 7320, Australia)

Background: Strong leadership and governance in health systems are critical to address the challenges and changes in health service delivery. Studies demonstrate that reduced risk and better quality care flow from effective leadership and well designed clinical systems that are subject to regular multidisciplinary reviews of outcomes.

Summary of work: The University of Tasmania, in partnership with the Sydney South West Area Health Service, has developed a Master of Clinical Supervision and Clinical Leadership. It is the first of its kind in Australia providing a unique opportunity for participants to enhance the quality of clinical supervision and leadership through a health focused leadership program. The course, with Graduate Certificate and Graduate Diploma exit points, has been developed for introduction in July 2008. It blends the theoretical and conceptual underpinnings of clinical leadership and with practical application in clinical practice. It provides accessible and flexible education options for clinicians in a range of environments through a collaborative, multidisciplinary approach.

Conclusions: Education and research contribute to a culture and environment of enquiry, learning and reflection which is crucial to service quality. Work place-based training is vital to assure a highly skilled, proactive and capable health workforce.

Take-home messages: Partnership approaches are essential to develop best practice models of flexible delivery for clinical leadership education programs.

4O/SC5
Team and leadership styles of junior doctors
Robert Cragg*, David Wall, Peter Spurgeon, Robert Palmer (Institute of Clinical Leadership, Warwick Medical School, University of Warwick, Coventry CV4 7AL, United Kingdom)

Summary of work: As part of a university recognised postgraduate Award in generic skills, 400 F2 doctors have undertaken an online module enabling them to appreciate their own team work and leadership styles. They selected their own preferred role out of 8 possible Belbin team roles, and also indicated which of 15 clinical leadership competencies, grouped in 3 clusters, were the most important for the NHS today. Transformational and transactional leadership scores were determined.

Summary of results: The majority conformed to just 3 team roles; namely, ‘team workers’ (36%), ‘implementers’ (23%), and ‘coordinator/chair’ (16%). For leadership, ‘personal qualities’ (48%) and ‘delivery of the service’ (37%) were considered to be more important clusters than ‘setting direction’ (15%). The focus on organisational issues rather than the process of change is also supported by the observation that transactional were significantly higher than transformational scores. Roles as ‘team workers’ correlated with personal qualities of leadership. Those who favoured the leadership competency ‘collaborative working’ had significantly higher transactional, and lower transformational scores than those favouring ‘drive for improvement’ (p<0.001).

Conclusions: This is the first study to compare team and leadership styles of junior doctors. It remains to be seen if styles change as they progress through their careers.

4O/SC6
Effective academic leadership requirements: Medical education experts’ views in Iran
Ali Biktomiadi*, Mats Brommels, Alireza Shoghi, Zohreh Sohrabi, Italo Masiello (Karolinska Institutet, Medical Management Centre, Department of Learning, Informatics, Management and Ethics, 171 77, Stockholm, Sweden; Hamadan University of Medical Sciences, Hamadan, Iran; National Public Health Management Centre, Tabriz, Iran)

Background: During the last two decades, medical education has shifted from elite to mass education, with a considerable increase in numbers of schools, faculties, and programs. Because of the integration, unique experiences between medical education and the health system and a growing tendency towards improvement, Iran is a good case now to explore views on effective academic leadership requirements held by experts in the medical education system.

Summary of work: An expert panel study was conducted by purpose sampling in which participants were requested to discuss and report on requirements for academic leadership, suggestions and barriers. All discussions were videotaped and transcribed and subjected to content analysis.
Summary of results: Six themes of effective academic leadership requirements emerged: 1) shared vision, goal, and strategy, 2) teaching and research leadership, 3) fair and efficient management, 4) mutual trust and respect, 5) development and recognition, and 6) transformational leadership.

Conclusions: The structure of the Iranian medical university system is not supportive of effective academic leadership and suffers from lack of meritocracy, conservativeness, politicization, bureaucracy, and belief in misconceptions. If this system could create the environment for a supportive and transformational leadership, consequently it could generate mutual trust and respect, increasing scientific production.

Workshop 4P Use of generalizability theory in designing and analyzing performance-based tests

David B Swanson, Brian E Clauser (National Board of Medical Examiners, 3750 Market Street, Philadelphia, PA 19104, 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.

Format of workshop: 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: 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 4Q How to meet your students

Jacco Veldhuyzen*, Hanneke Van Der Wijngaart*, Salmaan Sana* (VU University Medical Center, van der Boechorststraat 7, Amsterdam 1081 BT, Netherlands)

Background: In modern curricula the contact between students and teachers has decreased. Whereas in classical curricula teaching was limited to one or a few teachers per course, now teachers are only involved in limited parts of each course. Peer education and other modern teaching methods have replaced lectures and the everyday contact between students and teachers. Next to this the increased number of students in many medical schools makes it hard for teachers to establish personal contacts with each student. As a result teachers and students have more difficulties to understand and meet each others needs and expectations, which negatively impacts medical education.

Intended outcomes: Participants will have developed an individual plan to re-establish personal contacts between students and educators with a focus on the use of modern technology, social and ceremonial events.

Structure: The workshop will be led by students and experts of the VU University Medical Center. Best practices will be introduced through short videos, which will be discussed with the participants. Furthermore students and educators are invited to participate in a ’speed-dating’ exercise to experience each others needs.

Who should attend: Teachers, students, educational staff, curriculum developers

Level of workshop: Intermediate/advanced

Workshop 4R Effective role modelling of professional values: from theory to practice

Yvonne Steinert*, Richard Cruess*, Sylvia Cruess* (Centre for Medical Education, Faculty of Medicine, McGill University, 1110 Pine Avenue West, Montreal, Quebec H3A 1A3, Canada)

Background: The challenge we face in teaching students and residents is how to inculcate the attributes and behaviors of the “good doctor”. Though we all recognize that role models remain a potent influence on learners, this educational strategy is no longer as effective as it once was. We must therefore understand the role(s) we play, what we communicate, and how role modeling differs from mentoring. We must also be aware of the attributes of effective role models, the barriers to positive role modeling, and how we can more explicitly develop role modeling as an effective teaching and learning strategy.

Intended outcomes: This workshop will enable participants to: Reflect on how they role model professional values; Describe the attributes of effective role models; Articulate barriers to role modeling professional values; Identify ways to enhance the impact of this important educational strategy.

Structure: Introduction of group participants; Brief presentation of the pertinent literature; Small group discussions re: Participants’ own experiences as role models, Attributes of effective role models, Barriers to positive role modeling and strategies to overcome them; Development of individual action plans to improve personal role modeling.

Intended audience: All teachers and medical educators.

Workshop/Atelier

4S  Un atelier francophone/A workshop conducted in French

La simulation: Répondre aux besoins de la francophonie internationale: construire une communauté francophone de ressources dédiée à la simulation médicale l’approche combinée de la Faculté de médecine de l’Université de Montréal (U de M) avec CAE, leader en simulation aéronautique

Simulation: building a francophone teaching community exploring the partnership between the Faculty of Medicine of the Université de Montréal (U de M) and CAE, a world leader in aviation simulation

J V Patenaude1, P Drolet1, R Lalande1, M Rubin2, R Thivierge1, G Hervé 2  (‘Université de Montréal, Faculté de médecine, C.P. 6128, succursale Centre-ville, Montréal, Québec, CANADA, H3C 3J7; 2CAE, 8585, ch. de la Côte-de-Liesse, Saint-Laurent, Québec, Canada H4T 1G6)

Note: This workshop may be attended by everyone, but is intended mostly for the French-speaking community. Its goal is to build an international community of francophone teachers and researchers revolving around simulation learning and teaching. The Faculty of Medicine of the Université de Montréal, in partnership with CAE, a world leader in simulation-based aviation training and technology, are initiating this project and will demonstrate our integrated innovative approach, applicable worldwide.

Introduction: Avec les concepts innovateurs élaborés pour l’aviation, la simulation devrait nous permettre d’obtenir des résultats supérieurs, reproductibles, associés à moins d’erreurs médicales et des coûts réduits de soins et formation. La faculté de médecine de l’UdeM a développé un concept systématique (paradigme) de formation basé sur la simulation. Nos travaux l’ont amené à : (1) généraliser et intégrer la simulation dans l’ensemble des neuf années des curriculums pré et post-gradués; (2) exiger l’acquisition combinée des compétences d’attitudes (incluant celles reliées à la sécurité des individus) et d’habiletés dans nos méthodes d’apprentissage; (3) élaborer un partenariat porteur d’approches innovatrices pour notre Currículum en santé, incluant les apprentissages du travail en équipe (interdisciplinarité ou Crew Resources Management) et en Éducation continue: utiliser un Learning & Performance Management System (LMS) comme « charnière » aux apprentissages pour l’Éducation continue. Le concept favorise la création de communautés de pratique sur le web lors de travaux à domicile. Ceux-ci sont préalables aux expériences de simulation stratégiquement introduites. La rétroaction sur le LMS, utilise les séquences filmées de simulation et s’accompagne d’exercices/informations pour continuer de s’améliorer à domicile, par après.

Objectifs: (1) Utiliser l’approche préconisée comme modèle pour discuter de façon critique de l’enseignement par simulation. (2) Discuter en petits groupes et plénière, de la création d’une communauté de formateurs en simulation destinée aux besoins de la francophonie.

Participants attendus: Pédagogues et gestionnaires de la communauté francophone (surtout) s’intéressant à la place de la simulation dans: formation initiale, résidanat et développement professionnel continu.

Niveaux: Tous niveaux de formation.

Workshop

4T  The self-critical doctor: helping students become more reflective

Erik Driessen (Universiteit Maastricht), Jan van Tartwijk (Universiteit Leiden), Leo Aukes (Rijksuniversiteit Groningen), and Val Wass (Manchester University)

Background: Reflection means letting future behaviour be guided by a systematic and critical analysis of past actions and their consequences, and is crucial for learning from experience. However, students will not reflect automatically. As a clinical teacher, your task is to stimulate students to reflect on their experiences and formulate alternative actions. To do so, you must provide a challenging but safe learning environment, listen carefully, give feedback, and ask the right questions at the right time.

Content: This workshop will focus on techniques that clinical teachers can use to promote reflective learning. After a short introduction participants will have the opportunity to practice with these techniques. Barriers to reflective learning will be discussed, and teaching tips and background information will be shared.

Who should attend: Primarily intended for clinical teachers.

Level: All.

Workshop

4U  The purposes, processes and pitfalls of developing an electronic curriculum map

P M Warren*, H S Cameron*, S M Rhind*, C Bell*, M Begg* (University of Edinburgh, Medical Teaching Organisation, Chancellor’s Building, 49 Little France Crescent, Edinburgh EH16 4SB, United Kingdom)

Background: A comprehensive curriculum map allows tracking of course content and assessment, and provides students with a tool to aid learning. We have developed a common electronic mapping tool for both Medicine (where learning objectives are used as the basic mapped item) and Veterinary Medicine (where the user interface was initially designed around individual modules).

Intended outcomes: The workshop will provide insight into the technical processes, administrative and educational advantages, and pitfalls of mapping, and a forum for sharing experiences, and discussion of implications of creating and sustaining an electronic curriculum map.

Content: We will describe the pedagogical reasons for mapping and our electronic mapping tool. Topics such as ownership of the curriculum and how this affects governance and management of the database, maintenance issues, the reference against which the course is mapped, and the value of mapping to both staff and students will be covered in group discussions.
Workshop

4V Virtual Patients in medical and healthcare curricula: How to use them successfully

The eViP Programme team (Electronic Virtual Patients (eViP), eViP, St George's University of London, Centre for Medical and Healthcare Education, Hunter Wing Level 4, Cramer Terrace, London SW17 0RE, United Kingdom)

Background: Virtual Patients (VPs) are computer-simulations of real patient encounters for education. Due to the current‘open’nature of e-learning, VPs are becoming more-and-more accessible to educators in medical and healthcare education. However, there is some concern about how they can be used effectively by educators within the curriculum. This interactive hands-on workshop will address some of these concerns by working with participants to explore different ways in which VPs could be implemented. VPs from the eViP consortium will be used to facilitate the discussion about successful curricular integration strategies.

Intended outcomes: Participants will be able to differentiate between VPs based on their design and structure. Participants will also be able to demonstrate how different types of VPs can be used in different educational scenarios within curricula.

Structure: 1. Introduction to VPs and workshop; 2. Discussion on how participants would like to use VPs in their curricula; 3. Small-group activity exploring the possibilities to use VPs in medical and healthcare curricula; 4. Feedback on previous activity; 5. Small-group activity exploring VP design and structure; 6. Feedback on previous activity; 7. Summary and wrap-up.

Who should attend: Academics, faculty, and teaching staff involved in e-learning activities.

Level of workshop: Beginners.

www.virtualpatients.eu

Poster

4W Interprofessional education

4W/P1 CPR as a tool for students to learn how to act as an interprofessional team - does it work?
Margaretha Forsberg Larm, Anita Hanis* (Karolinska Institutet, Södersjukhuset, Sjukhusbacken 10, Stockholm SE 118 83, Sweden)

Background: Training for acute situations are often uniprofessional. New guidelines for CPR were established in 2006. These guidelines are something that everyone working in the health care sector should know and work from. Team training is one of the goals of the interprofessional student ward. Training together makes it possible to connect theory and practice; knowledge leads to patient safety and quality assurance.

Aims: Can students learn how to work as a team while handling an acute situation such as CPR? Can a tool like CPR-training help students to reflect on patient safety and quality assurance?

Summary of work: On the first day on the interprofessional student ward the students are informed verbally and with a written paper about the CPR teamtraining that will take place the second week. The students are from medicine, nursing, occupational therapy and physiotherapy programs at Karolinska Institutet. All teams, 24, and all students, 140, participated during the last semester 2007.

Summary of results: The students value the CPR teamtraining very highly. Often there was a medical student who take the leader’s role. Even students who had never been in a uniprofessional CPR training situation acted correctly and supportively to the solution of the situation. Shortly afterwards the students reflected on alarm, leadership, guidelines, attitudes and communication in the team.

Conclusions: CPR seems to be a way to learn even more how to act as an interprofessional team. The students value the learning highly and point out that it helps them to prepare for the future and for patient safety.

4W/P2 Dental hygienist and nurse students in interprofessional team training at CTC – Södersjukhuset
Monica Östberg (Margaretha Forsberg Larm to present) (Karolinska Institutet, Department of Neurobiology, Care Sciences and Society, Department of Clinical Sciences and Education, Södersjukhuset, Sjukhusbacken 10, Stockholm SE 118 83, Sweden)

Background: The project started at Clinical Training Center (CTC), Södersjukhuset in Stockholm, 2004.

Aims: To strengthen the professional role through collaboration with other professions and to increase the understanding of other professions’ assignments.

Summary of work: The dental hygienist students at semester five organized workshops including different areas related to oral health and oral hygiene for nurse students at semester two. Dental hygienist students also gave lectures open to the staff at Södersjukhuset as well as to nurse students at different levels in the education. We have tested a validated model for communication between patients, dental hygienist students (semester five) and nurse students (semester three). The students have access to standardized patients in an “authentic” situation. The communication is videotaped and the student analyzes the interview, utilizing the Arizona Clinical Interview Medical Rating Scale Analysis. In a second step, the student selects parts of the interview to be discussed with a tutor.

Summary of results: Regarding oral health the experience of most dental hygienist and nurse students was increased knowledge and better understanding about, each other’s professions. Training communicative skills in an authentic situation, utilizing standardized patients might contribute a greater security in meeting with the patient together with different professions.
Conclusions: Dental hygienist students and nurse students learn from, as well as about, each other's professions by training in an interprofessional team. The student groups have a constructive attitude to continue practicing together, and in their future professions they will continue to collaborate.

4W/P3
Inter-professional learning and teaching in the dental workplace
John Sweet*, Dinah Sweet, Christine Locke (Cardiff University, Dental School, Heath Park, Cardiff CF14 4XY, United Kingdom)

Background: Inter-professional education exchanging posture, ergonomic and oral health advice around a 'person centred' approach to patient care was explored with 12 dental, physiotherapy, occupational therapy and dental undergraduates during three separate clinical sessions in 2007. Students were briefed and debriefed during seminars at the outset and end of the sessions, with simulated the practitioner/patient work interaction at dental workstations and phantom head laboratories in between.

Summary of results: Students started 'task focused' and became 'person centred' later, by giving more detailed explanations, demonstrating with mirrors etc.; Multiple individual variations (such as height and left handedness) impacted directly on working posture; Ergonomic assessment tools enabled students to become more aware of potentially dangerous static postures involved in dental working; Laboratory working postures had not prepared students for the clinical environment; Some students realised for the first time how patients were in a vulnerable position.

Conclusions: Further work is needed to understand differences in perceptions of inter-professional learning between students and staff, and to show how this work could be embedded into professional training as this approach could improve the quality of patient care and 'patient centredness' in healthcare professions.

4W/P4
Interprofessional educational faculty development: advancing the future of healthcare through learning - a certificate course for health professionals
Ivy Oandasan, Susan J Wagner*, Brian Simmons*, Lynne Sinclair, Debbie Kwan, Ivan Silver, Molyn Lescz, Keegan Barker, Mandy Lowe, Scott Reeves, Denyse Richardson (University of Toronto, Office of Interprofessional Education at UHN - TW, MedWest Medical Centre, #3-302 - 750 Dundas Street West, Toronto, Ontario M6J 3S3, Canada)

Background: Many changes are being made to health professional curricula/continuing education activities to encompass interprofessional education (IPE). This course aids the development (knowledge, skills and attitudes) of academic leaders in IPE to teach the principles of interprofessional collaboration.

Summary of work: A five-module/day course was developed in 2005 at the University of Toronto. It is offered to multiprofessional health care teams with leadership roles in IPE. Reflective practice is integral to each module. A 1,000 word reflective discourse is required by participants at the conclusion. Over 150 participants have completed this course over the last three years.


Conclusions: The course is well received by participants who strongly agree that this framework could advance IPE in their own institutions.

Take-home messages: Educate-the-educator model for faculty development is one step for the advancement of IPE leadership for the future.

4W/P5
Developing multi-professional learning environments in UK Primary Care
David Poll*, Richard Mumford*, Simon Gregory (East Midlands Healthcare Workforce Deanery, Rutland House, 11 Merus Court, Meridian Business Park, Leicester LE19 1RJ, United Kingdom)

Background: Whilst GP specialty training in the UK is delivered in approved training practices, there are difficulties in providing sufficient training places for other professions and in promoting multi-professional and inter-professional learning.

Summary of work: After a scoping exercise, pump-priming funds have been provided to develop Primary Care practices as approved 'Multiprofessional Learning Organisations' (MPLOs) in each local health community, to act as hubs for multiprofessional education and working.

Summary of results: Informal training opportunities already exist including students from nursing, health visiting and emergency care. Formally, 10 MPLOs are planned for 2008 and 22 by the end of 2009. The project has the backing of a variety of stakeholders including the commissioners of healthcare. The Postgraduate Deeney's role leading and coordinating the innovation has been vital.

Conclusions: Patient care is increasingly in Primary Care and increasingly multi-professional. The supply of training placements needs to be managed, resourced and supported to deliver this agenda with appropriate staff and organisational development.

Take-home messages: Patient care is increasingly in Primary Care and increasingly multi-professional. The supply of training placements needs to be managed, resourced and supported to deliver this agenda with appropriate staff and organisational development.

4W/P6
Development and implementation of an interdisciplinary educational model in elderly care
Pauline P M Bakker*, Abe K Meininger, Joris P J Slaets (University Medical Center Groningen, Hanzeplein 1, Groningen 9700 RB, Netherlands)

Background: Professionals in elderly care need new competencies to give elderly people the care they require. In educational programmes more emphasis has to be given to communication and collaboration between professionals.

Summary of work: Features of a competency based educational model for interprofessional elderly care have been developed. The aim is to organize the learning process of the professionals on workplace in a changing environment.

Summary of results: Essential elements of the educational model are: What elderly need is starting point; The educational model is one of the most important instruments of change; The model is interdisciplinary in design and offers room to new and former professionals; The model is competency and outcome-based; Focus on interprofessional collaboration and communication.
**Conclusions**: Education has to be action based, focused on changing care practice. The model has to give room to all professionals working in elderly care. Research is needed to figure out if this model works in practice.

**Take-home messages**: It is necessary to educate professionals together, when they work together in real life.

### 4W/P7

**Acute pain training module for Anaesthetic trainees- a multidisciplinary approach**

M R Naughton, S P MacSuibhne, I Callanan, A Guerandel* (Department of Psychiatry, St Vincent’s University Hospital, Elm Park, Dublin 4, Ireland)

**Background**: Noveate trainees in Anaesthetics need competency in acute pain management before they are allowed to work unsupervised. A multidisciplinary training module was developed with the aim of making the trainees technically proficient with appropriate management of acute pain including correct prescribing.

**Summary of work**: Training faculty consists of Consultant Anaesthetist and two trained acute pain nurses. Acute pain team provides one to one intensive teaching on all aspects of acute pain control, usage of different pumps in drug delivery and dosage calculation. Practical instructions are provided during acute pain rounds and a hand book is provided with detailed information, protocols and contact numbers. Feed back is provided after each training session and the module is signed off after assessment. All noveate trainees complete this training module, thereby ensuring local quality control. Targeted training has helped to reduce the time required for trainees to achieve required competences.

**Conclusions/Take home messages**: Anaesthetic faculty members are able to check competency level of trainees and be assured of their performance. Interaction with nursing instructors reduces Consultant time and allows holistic approach. Multidisciplinary approach is attractive to trainees with excellent feedback. Targeted training helps in achieving training within shorter EWTD working hours.

### 4W/P8

**A year in life – a longitudinal perspective on own development and patients’ health, function and ability – cultural and interprofessional aspects**

A Kiessling*, I Krakau, P Henriksson, H Samadi, I Lindqvist, B Söder, A Edström, C Sandahl (Karolinska Institutet, Department of Clinical Sciences, Danderyd Hospital, Department of Learning, Informatics, Management and Ethics, Stockholm SE-18288, Sweden)

**Background**: Students have few opportunities during clinical placements to follow patients for more than a few days or weeks and to meet them in their homes.

**Summary of work**: Development and evaluation of an innovative interprofessional elective course for undergraduate medical, nurse, occupational therapy and dental hygiene students. Learning objectives were to develop collaborative skills; understanding of patients’ perspective on health, function and ability in their daily life and cultural context; competence to identify and handle ethical dilemmas attached to the patient cases; understand the long-time course of an illness; understand different profession-roles supporting these patients and a longitudinal perspective on own professional development. This partly distance-based course consists of seminars and recurrent interprofessional group-visits to a patient during a year. Students write reflections on visits and seminars. The reflection-log and relevant theories from literature are summarised in a written group-report. A critical peer-to-peer reflection on the reports is performed during the last seminar.

**Conclusions**: Focus group discussions with participating students, patient interviews and SWOT-analysis with the educational leaders show a high grade of satisfaction. The students mature in their professional competence.

**Take-home messages**: This longitudinal interprofessional course seems to be a powerful, feasible and appreciated learning-method for professional development.

### 4W/P9

**An audit of the participant satisfaction in multidisciplinary educational case presentations at a University Hospital Department of Psychiatry**

M R Naughton, S P MacSuibhne, I Callanan, A Guerandel* (Department of Psychiatry, St Vincent’s University Hospital, Elm Park, Dublin 4, Ireland)

**Background**: Our objective was to assess areas of satisfaction/dissatisfaction in the multidisciplinary post-graduate education of Psychiatric Case Presentation Meetings and to implement changes in these areas.

**Summary of work**: A group-structured assessment gathered information on the opinions of members of the multidisciplinary groups (Consultant Psychiatrists, NCHDs, Psychologists, Nursing staff, Occupational therapists, Social Workers, Pastoral Care staff and students) that attend. The results were collated using Likert scales, which was then completed. Changes were suggested, agreed upon and implemented in the areas where there was most dissatisfaction. We implemented a Case Presentation Skills Assessment Tool, designed by the Royal College of Psychiatrists, to assess presentations in a structured way. Presenters clarified medical terminology. We introduced a “small group discussion” after the patient was interviewed, thus improving multidisciplinary participation. We implemented eight-weekly topic-based Classes. Formal feedback on the patient’s progress was regularly returned to the meetings. The acoustics of the room were improved and the seating arrangements changed. A nominated group of three people ensured that the changes were implemented.

**Conclusion**: We will re-evaluate the impact of changes on the satisfaction of multidisciplinary education after a three-month trial thus closing the audit loop on education.

**Take-home message**: Aspects of our methods and experience could be disseminated to other multidisciplinary case presentation meetings in healthcare.
4W/P10
Multi-professional education for primary medical supporter of patient on prenatatal examination in a prefecture of Japan (A report of step 1)

Yumiko Goto*, Shun-ichiro Izumi, Akane Kondo, Yoko Morita, Michiko Mizoguchi, Hiroko Yokoyama (Division of Genetic Counseling, Tokai University School of Medicine, 143 Shimo-kasuya, Isezaka 259-1193, Japan)

Background: In our previous study, some pregnant patients received amniocentesis without sufficient information about the procedure and lacked a concrete decision-making process. Now, we are trying to make an effective multi-professional education system for medical supporter in the primary care facilities of our community. As a first step, we tried to elucidate needs of the medical professionals (MPs) in the primary care level.

Summary of work: Questionnaires were mailed to 1881 MPs who were registered and worked in primary care for pregnancy in our prefecture, and analyzed. Approximately 70% of MPs informed all pregnant women older than 35 years about the availability of amniocentesis, where 60% of MPs explained only orally without any written form.

Summary of results: Medical doctors had more recommendation attitude for amniocentesis (50% vs. 25%), and found more benefit (15% vs. 8%) than midwives. 82.5% of corresponded MPs requested to promote utilization of the professional facilities.

Conclusion: These MPs could be supported by genetic professionals of our newly opened counseling division.

Take-home message: Since difference of age and marital status with children significantly reflected their opinion, a multi-professional workshop might be effective for their education.

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4W/P11
Genetic counseling in medical education: trial of multi-professional workshop for undergraduates (preliminary report)

Shun-ichiro Izumi*, Akane Kondo, Yumiko Goto, Yoko Morita (Division of Genetic Counseling, Tokai University School of Medicine, 143 Shimo-kasuya, Isezaka 259-1193, Japan)

Background: While basic genetics as science has been developed very well in Japan, clinical genetic services are under development. As for the medical students, communication skill had been not a major part of learning. However, communication skill is a critical aspect to take care of complicated situations especially in a team practice. Now we are trying to construct an effective multi-professional education for undergraduates; medical and nursing students will join a workshop for some simulated situation in team practice.

Summary of work/results: For an effective workshop for undergraduates, we tried to analyze present knowledge status and need for them. This report presents an aspect of medical students; 3rd grade students (n=118) answered questionnaires about their knowledge on basic genetics and attitude for mental counseling. With generalized knowledge (80%) of the concept of genetic counseling, most of them recognized the difficulties of ethical issues (85%), and wanted to practice in a simulated situation.

Conclusion: In conjunction with on-going analysis on nurse students, endpoints will be set for a workshop; the precise curriculum will be presented at next the report.

Take-home message: For a successful team practice in post-graduates, a multi-professional workshop might be an effective education system for undergraduates, especially with role plays.

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4W/P12
The development of learning outcome evaluation items for interprofessional education in Japan

Misako Miyazaki*, Ikuko Sakai, Narumi Ide, Rie Iino, Masahiro Tanabe, Itsuko Ishih, Masami Tagawa, Toshie Yamamoto, Mayumi Asahina, Tomonori Nakamura, Kieko Iida (Chiba University, School of Nursing, 1-8-1 Inohana Chuou-ku Chiba-shi, Chiba 260-8672, Japan)

Background: It is proposed to develop evaluation items for learning outcomes of the interprofessional education programme provided for the first year students from the disciplines of Medicine, Nursing and Pharmacy in a Japanese national university.

Summary of work: The programme is to reinforce students’ perceptions and attitudes for the actualisation of patient/client centred healthcare. The subjects are the first year undergraduate students (n=200) from three disciplines. The contents of the reflection sheets and the final reports are analysed as text data using a text mining method. The semantic contents are analysed to clarify the students’ feelings as to what they have learned from the programme. These semantic contents are collated with the learning objectives and are structuralised, and then evaluation items are refined.

Summary of results: Five structuralised evaluation items are developed and differences in two items are shown between the disciplines i.e., ‘learning experience and the learners’ ways of thinking toward the interprofessional working through their learning’ and ‘more concern for their patient/clients’ experience and life, and in their quality of life.’ Discipline comparison reveals some differences e.g., in perceptions toward the interprofessional working and increased concerns in patients’/clients’ experience at the first year stage, which may suggest the validity of the evaluation items.

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4W/P13
Transformational journey to best experience/best education in Allied Health Education

Paul Gamble*, Mary Preece (The Michener Institute for Applied Health Sciences, 222 St. Patrick Street, Toronto, ON MST 1V4, Canada)

Background: Since 1958, The Michener Institute for Applied Health Sciences (Michener) has fulfilled a unique role in Canada as the foremost educator of health care technologists and therapists. In 2005, Michener initiated the redesign of its programs to embrace the principles of interprofessional (IP), advanced use of simulation education, and transformed clinical education.

Summary of work: The curricular integration of IP goes beyond a few projects/courses; it necessitates a cultural shift and transformation of how and where we work. Michener adapted a transformational change strategy, and committed extensive resources to the HR and OD elements critical to the success of this initiative.

Summary of results: Challenges encountered include the ‘messiness’ of transformation, the need to bring some order from chaos, overcoming the commitment to the status quo in health care education, leadership commitment and expertise, cultural change, talent management, organizational ability to ‘walk the talk’ and life/work balance.

Conclusions/Take-home messages: The session will share the unexpected complexity encountered by Michener on its transformational journey to design, integrate and model IP principles into curriculum and organizational life. This ‘lessons-learned’ approach will help inform the journey for other academic departments/institutions as they integrate IP into their programs.
4W/P14
European Interprofessional Education Network (EIPEN)
Marion Helme, Suzanne Hardy* (UK Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine, School of Medical Education Development, Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne NE2 4HH, United Kingdom)

EIPEN, the European Interprofessional Education Network, was formed in 2005, supported by EU Leonardo da Vinci Programme funding, with academic and employer organisations in Finland, Greece, Hungary, Poland, Sweden and UK, representing the spectrum of medical, health and social care professions. The Network is coordinated by the UK Higher Education Academy Subject Centres (www.health.heacademy.ac.uk). The first phase of development concluded in 2007 in an international conference hosted by partners Collegium Medicum, Jagiellonian University in Krakow which demonstrated the diversity of interprofessional learning and the interest from countries new to IPE. The second phase of work in 2008, funded by the EU Lifelong Learning Erasmus programme expands the partnership with university members from Belgium, Ireland and Slovenia and includes dissemination events, evaluation of new work and a research project to review the implications of EU Higher and Vocational Education policies for quality in interprofessional learning in health and social care. This poster will report on the work of the Network in both phases of the project, including steps towards the quality assurance of interprofessional learning in Europe, interim conclusions and invitations to new members.

4W/P15
Why should medical laboratory science students be included in high level simulated-based education?
Brenda Gamble* (University of Toronto, Department of Social Sciences, Toronto, Ontario, Canada)

Clinical laboratory science provides technical and clinical information (70% to 80% of the medical record) that affects current and future health outcomes for individuals and populations.

Educational programs for clinical laboratory science use low level simulated-based technologies (SBTs) to develop students' technical proficiency in the laboratory. However, a variety of high-level SBTs now provide opportunities for laboratory students otherwise isolated in laboratory educational programs to learn in an educational model that supports inter-professional education.

Inter-professional training provides the opportunity for health care providers to facilitate and develop a number of non-cognitive skills. Dialogue between the laboratory and bedside providers is seen as a key non-cognitive skill for ensuring clinical proficiency. Research on reducing outbreaks and nosocomial infections highlights the importance of communication between front line providers both inside and outside of the laboratory. Better communication can also enhance technical proficiency by reducing the turn around time for test results which is important for screening programs (MRSA). Not only will patients benefit but also health systems (e.g., reduce costs).

Clearly, there would be a systematic value for medical laboratory science students to be included in high level simulated-based educational models resulting in enhanced laboratory proficiency as well as improved inter-professional practice.

4W/P16
The effects of web-based resources designed to support inter-professional learning (IPL) at universities in the field of health sciences
Nobuo Ohshima*, Kaoru Inoue, Chihiro Sasaki, Hiroyuki Fuji, Masanobu Kinoshita, Masahiro Shigeta (Tokyo Metropolitan University, 7-2-10, Higashi-Ogu, Arakawa, Tokyo 116-8551, Japan)

Background: In inter-professional learning (IPL), students can accelerate knowledge acquisition through the analysis of specialties and evaluation of relationships in the process of case study-based discussion.

Summary of work: This study aimed to clarify the effects of a system for online case study on students’ IPL. Two types of student group were created: one comprising students from any one of the five departments of medicine, occupational therapy, physical therapy, nursing, and social welfare (single profession groups: SPGs; 5 groups in total), and the other consisting of one student from each of these five departments (multiple-profession group: MPG: 1 group). Using a system for online case study, namely, the web-based resource learning (WRL) system, a case study was conducted for 3 weeks by each of the five SPG groups and the MPG group.

Summary of results/Conclusion: In each SPG group, although students deepened their understanding and felt a greater sense of solidarity, they also showed a negative tendency to limit their viewpoints during discussion. In the MPG group, while students required more time to complete the study, they produced positive results regarding the overall WRL system, including broadening of their views and changes in their ways of thinking.

4W/P17
A community interdisciplinary/cross-course pedagogical experience
M A Araujo* (Bahia Public Health and Medical School (EBMSP), Av D. João VI 270 - Brotas, Salvador - Bahia 40290000, Brazil)

Background: This paper reports an interdisciplinary pedagogical practice in long-standing Community Health Education groups that integrate teachers and students from the Bahia Public Health and Medical School (EBMSP, Salvador Bahia, Brazil) undergraduate courses (Medicine, Physiotherapy, Psychology, Dentistry, Occupational Therapy and Biomedicine). Such groups assist several segments (obese, hypertensive, diabetic, adolescent, elderly, pregnant and sedentary subjects as well as women, smokers and workers) registered at a Family Health Unit (USF, Urban Candeal District).

Summary of work: Interdisciplinarity and the constructivist model for teaching/learning were chosen to make up the theoretical framework, thereby encouraging students from different training fields to devise integrated action plans and jointly coordinate health education group sessions for that population. Each group comprises 15 students, a supervising teacher and a USF/Candeal professional.

Summary of results/Conclusions: Highly positive results include the population’s increased self-care, self-esteem and acquisition of healthy habits, the students’ enriched knowledge of practice from several fields, especially among medical students who report having learned a new way of viewing disease, and the value added to the USF/Candeal work via the academic partnership.
4X/P1
E-tutors' perception of plagiarism on an e-learning Diploma course
Helen Pugsley*, Lynne Allery (Cardiff University, 3rd Floor Glamorgan House, Heath Park, Cardiff CF144XN, United Kingdom)

**Background:** The Diploma in Practical Dermatology is an international distance learning course for General Practitioners, delivered by the Department of Dermatology at Cardiff University. 160 e-tutors are required each academic year to support a variety of assessments which includes grading of written work and facilitators of collaborative exercises. However not all tutors are trained educators and are based all over the world.

**Summary of work:** The aim of this study is to inform and develop an educational strategy and departmental policy to help prevent plagiarism in order to maintain course standards. This poster will be a presentation of the results of an online group interview to explore tutors' perception of plagiarism on this e-learning course. Common themes were identified from an emailed questionnaire and further explored in a group online interview.

**Summary of results:** The research achieved consensus on several important points; it highlighted the importance of providing guidance to tutors and students of what constitutes plagiarism and the importance of educating students and providing examples to students to promote understanding so they can avoid plagiarising.

**Conclusions:** E-tutors need to be aware of the issues and work with the internet as a reliable tool which does not compromise academic standards or University regulations (Stapleton, 2005).

4X/P2
Online reflective learning supported by student facilitators
M Regan, I Braidman (University of Manchester Medical School, Oxford Road, Manchester M13 9PT, United Kingdom)

**Background:** We have a large population of medical students, dispersed over many hospital sites. We have therefore successfully introduced online reflective learning activities, which, in a novel departure, are facilitated by students from the same year as their peers.

**Summary of work:** Over 60 students volunteered as facilitators and were trained in generic group facilitation and online moderation. All students were divided into 63 groups, each with a facilitator. We used a WebCT platform, with domains for resources, a discussion board for all students and private areas for each group. We devised specific activities, which focused on professional issues. All students were asked to download evidence of participation in group discussions for when their portfolios are reviewed. Postings were analysed with a Community of Enquiry Model¹ and student views were investigated with a mixed method approach.

**Summary of results:** In 2006 - 2007 98% of groups participated with 3,349 postings. Of these, 12% were at the highest levels of cognitive presence and social learning was evident in all text streams, indicating increasingly sophisticated interchanges. Students were positive; ‘viewing’ others’ perspectives was beneficial, text based discussions were ‘thought provoking’ empowering reflective learning, although the facilitators’ role had to be defined clearly and some time for face to face interactions was desirable. We are continuing these innovations.


4X/P3
Millenial and Generation X medical students: an examination of personality differences by gender
Carol Elam*, Nicole Borges, Stephen Manuel, Bonnie Jones (University of Kentucky College of Medicine, Office of Medical Education, 800 Rose Street, Room MN 118, Lexington KY, United States)

**Background:** Two groups comprise most students enrolled in medical school: Generation Xers (born 1965-1980) and Millennials (born 1981-1999). Population theorists ascribe different personal characteristics, attitudes, and preferences to each group. Using the Sixteen Personality Factor Questionnaire (16PF), this study explored personality differences by gender between cohorts.

**Summary of work:** Participants were 808 students (398 females, 410 males) who matriculated at different time periods [between 1989–94 (Generation Xers); between 2001–04 (Millennials)] and completed the 16PF during their first year (90% response rate). Differences in 16PF responses between the generations were analyzed by gender using multivariate analysis of variance (p<.05).

**Summary of results:** Millennial males scored significantly higher than Generation X males on: Reasoning, Emotional Stability, Rule Consciousness, Social Boldness, Openness to Change, and Perfectionism. Millennial males scored lower than Generation X males on Self-Reliance and Tension. Millennial females scored significantly higher than Generation X females on: Reasoning, Emotional Stability, Social Boldness, Sensitivity, Openness to Change, and Perfectionism.

**Conclusions:** Gender differences in personality appear to exist between Generation X and Millennial cohorts suggesting unique generational traits and attitudes.

**Take-home message:** Personality differences of Generation X and Millennial students may have implications for medical educators designing curricula and student services.

4X/P4
Tuberculosis and distance education
M J Procópio, H Santos, S T Nunes* (Oswaldo Cruz Foundation, Rua Leopoldo Bulhões, 1480 – Prédio Professor Joaquim Alberto Cardoso de Melo- Manguinhos, Rio de Janeiro 21041-210, Brazil)

**Background:** Considering the Brazilian dimension, it was necessary to create learning opportunities for healthcare teams in order to improve Brazil's Health System, to fight effectively against TB and to change educational practices. The Ministry of Health, a Brazilian project supported by the Global Foundation, the Distance Education (National School of Public Health/Oswaldo Cruz Foundation) and the Hélio Fraga Reference Center, in a partnership, developed a Training Program in TB using distance education for the first time.
Summary of work: The course was organized by experts in TB and Distance Education using a collaborative construction. The Learning Units run sequentially to facilitate the students' acquisition and development of abilities and competences. The material consists of two printed books, one with texts and other with activities. Both are available in the virtual learning environment on the platform VIAS-K (Virtual Institute of Advanced Studies Knowledge) and on CD-Rom. One tutor support 25 students and tutors receive support from experts.

Conclusions: Distance education was a perfect strategy to train 1,060 health workers at the same time, without absence from work, to act with high quality and effectiveness in all components of DOTS strategy.

Take-home messages: We are stimulated to offer the course to more students.

4X/P5
Application of e-learning in medical education
Markus Schichtel*, T Brown, S Rajapaksa, M Isles (Academic Department of Medical and Dental Education, WCM, Cardiff University, Cardiff University, Heath Park, Cardiff CF14 4XN, United Kingdom)

Background: The advent of multimedia technology, the World Wide Web and the nature of networked computers, have transformed educational technologies, making e-learning systems increasingly an integral part of the health care educational system. This presentation will contribute to participants' understanding of how to effectively apply e-learning in medical education.

We looked at the contextual suitability of e-learning within medical education. Initial findings demonstrate that a thorough understanding of its merits combined with a prudent usage within an educational context maximizes its efficiency. The aim of the presentation is to enable participants to effectively apply e-learning in medical education.

Learning outcomes: By the end of the presentation participants will be able to: Identify strengths and limitations for e-learning; Identify an appropriate framework for effective application of e-learning. There is scope for consideration of more varied approaches to the delivery of e-learning in health care education. E-learning can effectively enhance medical education if it is used astutely within the context of an appropriate educational framework.

4X/P6
Production of a high-impact e-learning module for life support resuscitation systems
ST Lee* (Singapore General Hospital, Outram Road, Singapore 169608, Singapore)

Background: In 2005, SingHealth commissioned Hewlett-Packard Education Services (HPES) to develop a Basic Cardiac Life Support (BCLS) e-Learning module for doctors and nurses. Every two years, all medical professionals are required to take a re-certification training on Basic Cardiac Life Support conducted by SingHealth's Life Support Training Centre (LSTC). The intention of this BCLS e-learning module was to complement the theoretical portion of the BCLS training, thereby reducing the face-to-face time commitment required by both participants and trainers.

Summary of work: Life Support subject matter experts from SingHealth were identified to work closely with HPES to ensure that the e-learning module covered accurately the details required to teach the BCLS course. Graphic imageries and animated illustrations were employed to teach the concepts and steps of administering CPR. To date, the BCLS e-learning courseware had already undergone a revision due to the new international BCLS guidelines released in 2005. The changes include the doubling of the number of chest compressions given to a cardiac arrest victim during CPR.

Conclusions: Due to the current public interest in CPR due to many sporting fatalities, we anticipate that the BCLS module created will be widely used. The usage will be closely monitored.

4X/P7
Vision of digital medical education
Dusan Mesko*, Jan Hanacek (Jessenius School of Medicine, Zaborskeho 2, Martin 036 01, Slovakia)

Background: We are living in an information and knowledge society strongly supported with ICT (Information-Communication Technologies). The paradigm shift in medical education is highly influenced by the digital era. The requirements of the medical workforce are changing – employers need physicians with mastery of the basics. Autonomic digital literacy needs creativity, multidisciplinarity, flexibility, intercultural communication and problem-solving skills. The education environment is available everywhere 24/7. Everyone on the medical education scene benefits by sharing information via a network. Today students are “digital natives”; their teachers (mostly) “digital immigrants”. They make the devices work without a manual, as if the device is hardwired into their “brain-disk” and hands directly. This is a must for the information-age mindset, for all people on the medical education scene. One of the key challenges is: How to teach teachers to teach with new media? Today students are visual + kinesthetic multi-taskers/ hyper-text thinkers, learners by discovery, team players. They would like to be “pulled into learning”, not “pushed into training”. Networked collaborative and communicative education creates collective:learning + competencies + memory + intelligence. ICT confirms the essential and core role of the main player – the teacher: to be the mediator/facilitator between knowledge and the student; a lifelong learner, a partner for students.

4X/P8
E-evaluation: are we too nice?
Graham Boswell*, Claire Dinsdale, Jason Green, Cara Maiden, Nasim Subhi, Tom Waite, Hani Youssef, Lynne Allery (School of Postgraduate Medical and Dental Education, Wales College of Medicine, Cardiff University, Heath Park, Cardiff CF14 4XN, United Kingdom)

Background: Evaluation of any teaching exercise is required to demonstrate that the objectives are met. E-learning has been provided by a number of commercial companies and evaluation is usually included in the construction of the site. Completion of the form is a prerequisite to the issuing of a certificate, which does not usually happen at clinical meetings.

Summary of work: Students undertaking a MSC in medical education and undergraduate medical students will be asked by way of questionnaire and focus groups (E-focus and face to face) for their views on e-evaluation forms. This is work in progress. It is hoped that we will identify whether the evaluation form is used critically or is seen as a means to achieving the certificate; in addition whether there is feedback for potential users of the site and how this is formatted.
4X/P9
VIP for VPs
Jennifer Wright*, Douglas Newton (Northwest London Hospitals NHS Trust, Northwick Park Hospital, Watford Road, Harrow SL0 0QB, United Kingdom)

Background: Training in intensive care typically consists of bedside teaching. Simulators are difficult to access. A cheap “virtual ITU patient” is not immediately available. High fidelity simulators for anaesthesia could be adapted, but only for small numbers of learners.

Summary of work: The four partners in the CRITICAL project aim to deliver a Virtual Intensive Care Patient (VIP), with a range of physiology, capable of being reconfigured for a variety of pathophysiological scenarios. We use EduCAT software, a simple toolset for teachers, not programmers, to create their own interactive material. Via the web, anywhere, these tutors can work with a readily available, low cost example of the management of various disease states. They will be able to try alternative treatments and observe patient outcomes faster than in “real life” without danger to patients. European experts in intensive care will develop medical scenarios, rigorously tested, evaluated and refined throughout the project life-cycle.

Conclusions: The result will be software simulation of a patient, in 4 languages (English, French, German and Spanish), which the teacher can reconfigure and customise. The VIP website will also provide a collaborative forum for educators who can develop the model and share the latest best practice.

4X/P10
The decision-making processes used in a clinical online discussion forum
Dave Murray* (Cleveland School of Anaesthesia, James Cook University Hospital, Marton Road, Middlesbrough TS4 3BW, United Kingdom)

Background: The Cleveland School of Anaesthesia runs an online discussion forum that allows anaesthetic trainees to discuss the management of virtual patients with the aim of enhancing clinical decision-making skills. This e-learning environment was explored by comparing the decision-making processes used to a real-world model known as Recognition Primed Decision-Making.

Summary of work: A case study methodology was used involving think-aloud narratives, interviews and analysis of forum postings. Six trainee anaesthetists were recruited. Two decision-making pathways were described. In one, there were close parallels with Recognition Primed Decision-Making in that trainees mentally simulated the outcome of their proposed management plan to assess the likelihood of success. The second pathway differed. Rather than simulate the outcome for the patient, success was assumed on the basis of their plan having previously been successful in a similar situation.

Conclusions: The study confirmed that the forum had educational value for several reasons including: use of real-world decision-making by some trainees, activation of prior knowledge, and a means of peer contact enabling trainees to see what decisions others would make.

Take-home messages: Online discussion forums that allow trainees to make decisions about virtual patients may help them develop expertise in clinical decision-making.

4X/P11
Evaluation of the web-based critical thinking software: Diagnostic Reasoning Clinician in Ramathibodi’s medical curriculum
Sutida Sumrithe*, Vipavee Kitkumhang (Department of Family Medicine, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, 270 Rama 6 Road, Bangkok 10400, Thailand)

Background: Clinical reasoning skills are essential for the problem-solving process in medical students. DxR Clinician, a web-based critical thinking software is a computerized case series, in which students learn to gather and interpret data, generate hypotheses and make decisions to solve patient problems. This study evaluates students’ perceptions and satisfactions of DxR Clinician software in the fifth year medical students at Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

Summary of work: The questionnaires consisting of 34 questions (Likert scale 1-5) with an open response section were developed to explore students’ perceptions and satisfactions with the program. The respondents were 116 medical students, who used the computer-based program to practice clinical reasoning skills in family medicine rotation. The data were analyzed by using SPSS program.

Summary of results/Conclusions: Students showed high satisfaction in the area of feasibility of using the program, ability of this program to support the students’ clinical reasoning skills and clinical learning. However, they showed low satisfaction in terms of the ability to stimulate self-directed learning after practising the program.

Take-home messages: The web-based software can be used as an effective educational tool for students to improve their diagnostic skills and refine their knowledge base.

4X/P12
The use of virtual patients and students’ clinical knowledge
Timo Kuusi*, Kalle Romanov (R&D Unit for Medical Education, University of Helsinki, PO Box 63, Helsinki 00014, Finland)

Background: Virtual patient (VP) cases enable students to examine medical history, clinical status, laboratory tests and imaging. We have used the Web-based virtual patient pool (VPP) to publish optional ‘the Case of Month’, each of which is available ten days for clinical students. An immediate feedback is displayed after entering the diagnosis.

Summary of work: 215 clinical students examined VPs during the year 2006. Biannual progress test data of 1149 students was used to compare theoretical and clinical knowledge of students who examined VPs (active group vs others). We investigated how students utilized VPs and if the use was associated with better outcome of progress test.

Summary of results/Conclusions: Progress was similar during the first 1.5 years of the preclinical studies but better in the active group thereafter. The clinical knowledge (albeit small) they had gained from the preclinical PBL curriculum was better (p=0.001). The difference in the clinical topics was maintained (+12%, p=0.8) whereas the theoretical knowledge did not differ significantly in the end of the curriculum.

Take-home messages: VPs are voluntarily utilized by students whose performance in clinical topics is already better. Therefore, this type of teaching should be integrated in the clinical studies to reach those students who need it more.
4X/P13
Implementation of a concept-mapping tool in a case-based learning environment
M Adler*, I Hege, C Nussbaum, N Berman, M R Fischer (INSTRUCT AG, Rothmundstr 2, München 80337, Germany)

Background: The case-based learning system CASUS offers six different answer-types with qualitative and quantitative feedback with a concept-mapping tool for visualization of differential diagnostic reasoning. Evaluation data suggested a tighter integration of the mapping tool as an additional answer type instead of a separate isolated part of the application.

Summary of work: In the process of redesigning the CASUS system an upgrade of the mapping tool was realized. To enhance technical and didactical integration into the case designing and enable easier use for students it was implemented as an answer type.

Conclusions: Tutors now have a more direct access to the hypotheses entered by the students and case progress is not possible without trying to work on the concept map. The results of a comparison concerning acceptance, duration of use and number of hypotheses entered for the different approaches will be presented. 400 undergraduate medical students participated in a study and a summative and formative evaluation has been implemented.

Take-home message: Concept maps included as interaction in an e-learning case are time consuming to create and an elaborate technical and didactical integration strategy is a crucial point for user acceptance.

4X/P14
Collaborative development of virtual patients in clinical education
Norman Berman*, Leslie Fall (Institute for Innovative Technology In Medical Education, 16 Cavendish Court, Dartmouth Regional Technology Center, Suite F, Lebanon, NH 03766, United States)

Background: Using an e-Portfolio to capture clinical activity and reflection: CALOM
N J Shaw*, H McNeill, J Brown, K Begg, A Haig (Mersey Deanery, Regatta Place, Brunswick Business Park, Liverpool L3 4BL, United Kingdom)

Aim: To investigate the extent to which trainees utilised log entries in an E-portfolio (particularly those involving reflection) to engage with the portfolio.

Summary of results: Of 82 ST1 trainees, 16 had logged no shared entries at all. Recording organised teaching was the commonest event logged (n=308: median 4.5 per trainee), followed by reflections on a clinical event (295: median 4), reflection on a learning event (211: median 3), reflections on the trainees own teaching (108: median 2), audit activity (99: median 1.5), learning during an attachment (70: median 1) and writing a research paper (31: median 0). The most common time of year for log entries to occur was in November to January, the least common being May to July at the end of the trainees posting.

Conclusion: Some trainees make frequent use of the opportunity to record and share reflective log entries whilst others appear not to engage with this aspect of the portfolio at all. The quality of reflective log entries and reasons for non-engagement should be investigated further.

4X/P15
Extent of reflective entries in ST1 pilot e-portfolios in Mersey Deanery

4X/P16
Using an e-Portfolio to capture clinical activity and reflection: CALOM
Ash Sel*, Richard Davidson, Patsy Stark (University of Sheffield, Academic Unit of Medical Education, Firth House, 85 Wilkinson Street, Sheffield S10 2GJ, United Kingdom)

Aim: To investigate the extent to which trainees utilised log entries in an E-portfolio (particularly those involving reflection) to engage with the portfolio.

Summary of results: The Sheffield e-Portfolio is a collection of student assignments, end of year marks, grades of competence and professional behaviours, reflections and CALOM, (Clinical Activity Log on Minerva) which students maintain throughout the course. Based on the core clinical curriculum, CALOM allows students to record and reflect on patient histories, procedural skills and their perceived confidence in performing physical and mental state examinations undertaken during their clinical attachments. The result is a valuable record of their entire clinical experience.

Conclusions/Take-home messages: CALOM enables students to record their clinical activity and to engage in reflective practice throughout the course. Students are encouraged to use the reflective process to determine their personal learning needs and monitor the progress made towards those goals. The vehicle for recording reflection is the e-portfolio.
4Y/P1
Institute for Professional Development: a new approach to faculty development
Sharon K Krackov*, Jo Wiederhorn* (Associated Medical Schools of New York, 10 Rockefeller Center, Suite 1120, New York, NY 10020, United States)

Background: Teachers and administrative leaders in health care institutions often have little formal preparation for these roles. The Associated Medical Schools of New York (AMSNY) Institute for Professional Development operates under the auspices of the 20 medical and dental schools in New York State, USA, and is creating a comprehensive faculty development program.

Summary of work: The AMSNY Institute will offer two curricular tracks, medical/dental education and leadership development. Each track will have a comprehensive curriculum designed to strengthen knowledge and skills and advance careers of participating faculty fellows.

Summary of results: Planning groups comprised of faculty at all member schools are developing curriculum for both tracks. We anticipate convening the first session in early 2009.

Conclusions: Curriculum planners have already benefited from meeting new colleagues from other organizations. We expect Institute graduates to develop new abilities and colleagues, gain recognition as educators and leaders, and engage in scholarly activities that improve their professional portfolios. Their institutions will generate a cadre of new leaders in education and administration. Through the Institute, they will gain access to a range of expertise and resources.

Take-home messages: We encourage others to try this model. The Institute coalesces the strengths of the individual schools and provides a synergy and range of educational possibilities that none can produce alone.

4Y/P2
Teach-the-Teacher training: what is applicable according to the participants?
Marta Witkowska-Stabel* (Erasmus MC – University Medical Center, Postbox 2040, Room FI 224, Rotterdam 3000 CA, Netherlands)

Background: In 2006 Erasmus University Medical Center introduced a 2-day Teach-the-Teacher training for clinical teachers. This training focuses on the specific aspect of teaching medical students in a work-environment. The aim of this study is to evaluate this training.

Summary of work: The participants of the training in 2007 (n=130) completed a questionnaire directly after the training. This included closed questions (1 to 5 Likert scale ratings) as well as open questions. Emphasis of the questionnaire was to find out which ideas the participants were going to apply in their daily practice.

Summary of results: General conclusions are that the participants are satisfied with the training. They will apply the knowledge and skills gained during the training in their daily practice. Most participants mention feedback and assessment as tools they will most likely actively apply in their teaching of medical students.

Conclusions/Take-home messages: Feedback and assessment were found the most applicable topics of the Teach-the-Teacher training for participants working in a clinical setting.

4Y/P3
Staff development workshops to promote learning technologies in a medical curriculum
Clarie Doody*, Eric Clarke (Royal College of Surgeons in Ireland, 123 Saint Stephens Green West, Dublin 2, Ireland)

Background: The e-Learning department at the Royal College of Surgeons in Ireland ran 15 workshops in the use of learning technology for academic staff. Our objectives were to: 1. Create a ‘spark’ representing the fusion of education and technology. 2. Empower educators to use the technologies. 3. Promotion of tools for authoring e-learning content.

Summary of work: Requirements when designing the workshops were as follows: 1. Interactive and hands on; 2. Mobility - to deliver classes in hospitals; 3. Duration - half-day to ensure attendance; 4. Pace - mixed abilities and levels of motivation.

Summary of results: Qualitative: 54/140 responses; 100% ‘worth attending’; 100% ‘gained new knowledge and plan to implement’; 94% ‘Camtasia session useful/very useful’; 92% ‘Moodle session useful/very useful’. Quantitative: 40/140 responses; On Moodle, since attending: 73% uploading files; 32% using calendar/timetable; 22% using SMS feature; 19% using instant messages; 16% using case uploads/assignments.

Conclusions/Take-home messages: Workshops were successful in promoting the use of learning technology in medical education. Workshops have changed the nature of support requests - less emphasis on low-skill low-value work such as uploading files and more requests around quizzes and higher value activities.

4Y/P4
New strategy for faculty development workshop on “Patient-centered Communication Skill Curriculum”
Stanley S L Tsai* (National Taiwan University Hospital (NTUH), No.7 Zhong Shan South Road, Taipei 100, Taiwan)

Background: The Department of Medical Education at National Taiwan University Hospital (NTUH) developed the “Patient-centered Communication Skill Curriculum” for intern doctors in 2007. Instead of the traditional didactic method, we employed new teaching strategies including audio-visual technique, role-play, reflective feedback and small group discussion in the faculty development workshop.

Summary of work: We recruited 25 faculty members with more than 5 years of teaching experience from surgery, gynecology, pediatrics, and emergency medicine departments to participate in the workshop. During the four-hour workshop, five video clips were shown followed by small group discussion, role-play and reflective feedback. The participants filled out a questionnaire rating the importance and confidence of communication skills before and after the workshop.

Conclusions/Take-home messages: Teach-the-Teacher training: what is applicable according to the participants?
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Staff development workshops to promote learning technologies in a medical curriculum
Clarie Doody*, Eric Clarke (Royal College of Surgeons in Ireland, 123 Saint Stephens Green West, Dublin 2, Ireland)

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Conclusions/Take-home messages: Workshops were successful in promoting the use of learning technology in medical education. Workshops have changed the nature of support requests - less emphasis on low-skill low-value work such as uploading files and more requests around quizzes and higher value activities.

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Conclusions/Take-home messages: We encourage others to try this model. The Institute coalesces the strengths of the individual schools and provides a synergy and range of educational possibilities that none can produce alone.
4Y/P5

The effect of workshops in feedback and communication on quality of supervision by attending doctors as perceived by medical residents in a paediatric teaching hospital

M Bruijn, A C Knottermus, M D Van de Wetering, J O Busari* (Emma Children’s Hospital, Academic Medical Center, Meibergdreef 9, Amsterdam 1105 AZ, Netherlands)

Background: Supervision of medical residents is a key responsibility of attending doctors. Fortunately, courses in effective supervision and communication are increasingly offered. Our objective was to investigate the effect of such courses on the perceived quality of supervision (PQS) in a paediatric teaching hospital.

Summary of work: The Cleveland Clinic’s Teaching Effectiveness Instrument was used to measure the PQS of attending doctors. 15 items reflecting good teaching ability were rated on a five-point Likert-scale (1=poor, 5=excellent). The PQS of the attending doctors was measured before and after workshops in communication skills and feedback.

Summary of results: Medical residents filled out 154 forms rating 28 paediatricians before and 65 forms rating 25 paediatricians after the courses. Overall, the mean(SD) PQS was 3.56(0.44) before and 3.63(0.54) after the courses (p=0.59, ES=0.16). The mean score for the item on feedback was 3.42(0.68) and 3.46(0.61), respectively (p=0.86, ES=0.08). The item “Teaches effective patient and or family communication skills” scored 3.27(0.61) before and 3.48(0.87) after the courses (p=0.30 ES=0.30).

Conclusions: Overall, PQS did not differ significantly before and after lectures and workshops aimed at improving feedback and communicative skills. However, estimation of effect sizes showed a moderate effect of the workshop in effective communication skills and feedback.

4Y/P6

The Summer Initiative for Teaching Excellence (SITE) in the health sciences

Kathryn N Huggett*, Michael G Kavan, William B. Jeffries (Creighton University School of Medicine, 2500 California Plaza, Omaha, Nebraska (NE) 68178, United States)

Background: In 2006, Creighton University School of Medicine introduced the Summer Initiative for Teaching Excellence. SITE is a collaborative, interprofessional, three-day program. It offers health sciences faculty an opportunity to engage in study, conversation, work, and reflection about teaching and learning.

Summary of work: The program was offered in 2006 (n=9) and 2007 (n=11) and will continue. Program topics include teaching philosophies, instructional design, assessment, strategies for teaching small and large groups, and the scholarship of teaching and learning. Learning modalities include group presentations, small group discussions, and individual project time. An important component is the initiation of an individual project, such as a new assessment method. Participants are assigned project mentors, and complete their project by the end of the academic year.

Summary of results: For both years, 100% of participants evaluated the program as successful or highly successful. Other areas were also evaluated positively. In particular, participants valued interacting with colleagues outside of their own school or program.

Conclusions: The program succeeded in providing faculty development for teaching, fostering scholarship, and promoting interprofessional networking.

Take-home message: An intensive, three-day workshop is an effective method to introduce busy health sciences faculty to educational theories and strategies.

4Y/P7

New challenge for faculty development in a provincial national health service

Serge Dubé*, Guy Archambault (Université de Montréal, Faculté de médecine, C.P. 6128 succursale Centre-ville, Montréal H3C 3J7, Canada)

Background: Increased clinical services and teaching load create a doom atmosphere which reduces commitment of clinicians. To increase trust and communication, a leadership program has been established to support the role of directors of departments of affiliated hospitals.

Aim: To report the good and the bad of this initiative.

Summary of work: A full professor of management from a business school and an associate dean of professorial affairs form the leading team. The course (a two days session) provides: A) A personal profile of leaderships; B) two case studies on basic knowledge of organizational structure, management and leadership; C) two cases studies from field experience; professor’s teaching evaluation and decision making about resource allocations. It brings together people who will eventually work at the same table.

Summary of results: Two sessions, 18 persons (4 women) have joined. Positive aspects: 1) fill a major need 2) know themselves better 3) contribute to reduce the anxiety created by their commitment. Improvements: 1) Schedule in a tight agenda 2) Follow up to insure a better integration of this new knowledge.

Take-home message: Faculty leaders hope to valorize these functions to recruit more easily, favor renewal and keep the vitality of these persons.

4Y/P8

Learning to teach in medical settings: the significance of work-based learning

Viv Cook* (Barts and the London School of Medicine and Dentistry, Centre for Medical Education, Turner Street, Whitechapel, London E1 2AD, United Kingdom)

Background: Medical teachers develop their skills through their everyday practice. This non-formal learning needs to be fully understood and maximised. This research set out to highlight ‘what’ and ‘how’ teachers of medical undergraduates learn in their initial years as educators in their places of work and make recommendations for enhancing such learning.
**Summary of work:** Twelve novice teachers (Foundation Year Trainees, GPs, Medical school staff) were interviewed twice over a 4-month period. The participants normally had less than 3 years’ teaching experience. During the interview, participants were asked to complete a ‘concept map’ to describe the people and tasks they regarded as most critical to their learning.

**Summary of results:** Data from the interviews and maps were indicative of non-formal learning across domains such as Developing Confidence, Working with Patients, and the Art of Teaching. Learning was taking place through observing others’ practice and from their own experience, mediated through reflection. There were differences between settings in the degree to which they promoted learning – ‘expansive’ and ‘restrictive’ environments.

**Conclusions:** It is important that staff developers, work-based mentors and teachers recognise fully how non-formal learning takes place and how it can be promoted through such activities as observation, external networking and variation in tasks and experience.

**Take-home messages:**

- Clinician-educators can be developed.
- A change in the educational activities of participants of this outcomes logic model based program for clinican educators has been demonstrated. The timing of this change indicates a causal role of the programme.
- While Faculty Development at LMU has highly improved teaching professionalism and quality, adequate structural and individual promotion of a teaching and learning culture demand further effort.

**4Y/P10**

**Implementation of innovative technology into Kazakhstan medical education**

Roy Joseph*, Matthew Gwee, Elizabeth G Armstrong (National University of Singapore, Department of Neonatology, 5 Lower Kent Ridge Road, Singapore 119074, Singapore)

**Summary of work:** A short (4 day) full time off-campus programme for clinician educators was conducted in late 2004 to develop in them the interest and ability to provide curriculum direction and to improve teaching, educational research and development and institutional leadership. The programme was developed and implemented using an outcomes logic model. The programme was evaluated three years later through a self administered questionnaire. The 36 item questionnaire was designed to identify the respondents’ (a) acquisition of knowledge, skills and application of this to educational projects, (b) scholarly and leadership activities, (c) self directed learning activities in medical education, (d) perception of the influence of the program and (e) prevalence of similar activities prior to participation in the programme.

**Summary of results/Conclusions:**

- We identified a significant declared increase in: knowledge, skills; commencement and completion of educational projects; educational grant application and receipt and scholarly evaluation of projects. Respondents indicated decisively their perception of the impact of the program and their development as an educator.
- A change in the educational activities of participants of this outcomes logic model based program for clinican educators has been demonstrated. The timing of this change indicates a causal role of the programme.
- Take-home message: Clinician-educators can be developed.

**4Y/P11**

**The 3 year outcome of participants of the NUS-HMI program for clinician-educators**

**Summary of work:** The 3 year outcome of participants of the NUS-HMI program for clinician-educators was conducted in late 2004 to develop in them the interest and ability to provide curriculum direction and to improve teaching, educational research and development and institutional leadership. The programme was developed and implemented using an outcomes logic model. The programme was evaluated three years later through a self administered questionnaire. The 36 item questionnaire was designed to identify the respondents’ (a) acquisition of knowledge, skills and application of this to educational projects, (b) scholarly and leadership activities, (c) self directed learning activities in medical education, (d) perception of the influence of the program and (e) prevalence of similar activities prior to participation in the programme.

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- Take-home message: Clinician-educators can be developed.
Physician faculty development: long-term outcomes for primary care teachers

P K Kokotailo*, K L Gjerde, K M Hla, A D Poehling (University of Wisconsin School of Medicine and Public Health, Department of Pediatrics, 2870 University Ave, Suite 200, Madison, WI 53705, United States)

Background: Academic institutions have recognized the need for faculty development programs to provide teaching and leadership skills for their teachers. The effects of such programs on the participants’ clinical and academic skills have not been well studied. The purpose of this study was to determine how graduates of a primary care faculty development program identified its long-term effect on professional outcomes.

Summary of work: Through a year-long series of five weekend workshops, community- and university-based physicians were prepared to teach curricular areas including evidence-based medicine, teaching skills, technology tools, doctor-patient communication, quality improvement and advocacy. The first 100 graduates were surveyed regarding professional and academic outcomes they attributed to program participation. Outcomes were categorized using the Kirkpatrick evaluation model; open-ended comments were analyzed thematically. Eighty responses were included (80% response rate). Ninety percent of respondents were teaching medical students and postgraduates.

Conclusions: Outcomes attributed to the program included improvement in teaching and clinical skills, increased personal growth and self-confidence, and increased networking. Ninety-one percent recommended the program to others.

Take-home messages: Graduates identified positive outcomes and developed the skills and self-confidence required of teachers. These skills are highly valuable for teaching in today’s rapidly-changing learning environment.

Stumbling towards Damascus: using “experience” in faculty training for the European Trauma Course

Mary Rose Cassar, Mike Davis*, Peter Driscoll (European Trauma Course Working Group, 38, Our Lady’s Street, Zebbug ZBG 3244, Malta)

Background: The ETC has been under development for 2 years and among its characteristic features is the development of team training. During early pilot stages, it became apparent that there was not a readily available model for team training and accordingly, the working group struggled to design a programme that would introduce new faculty to an approach while rehearsing it for existing faculty.

Summary of work: Following the second pilot in Stavanger, Norway in May 2007, an instructor training day was introduced and among the features for the Rome (3rd) and Malta (4th) pilots was a demonstration by experienced faculty, led by the course director, followed by practice in three stations: airway, thoracic and shock.

Summary of results: On both occasions, the second half of the programme was abandoned and the first half repeated during the afternoon session. The apparent failure of the morning session can, however, be reconceptualised as a necessary experience from which learning can emerge from the processes of observation and reflection, conceptualisation and experimentation, leading to eventually successful outcomes.

Conclusions: The experiential learning cycle is a helpful tool to explore the development of instructor competence in complex new approaches to scenario training.

Take-home message: Mistakes are not sins to be punished but opportunities for lessons to be learned.

Implementation of a “Train-the-teacher workshop” for a new curriculum for teaching clinical examination and history taking

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Background: To implement a new standardized curriculum for teaching clinical examination and history taking a teacher-training course was set up.

Summary of work: Prior to the course all teachers (n=14) attended a 6-hour interactive “Train-the-teacher workshop”. The new curriculum, the teaching methods and information on standardized patients were presented. The teaching method for clinical skills according to Rodney Peyton was introduced. Trying to get used to the Peyton-like method a special technique of folding (origami) and working in small groups with examples of physical examination were carried out.
Is one day long enough to introduce teaching methods to junior doctors?

Don Bradley*, Leena Patel* (University of Manchester, Manchester Medical School, Oxford Road, Manchester M13 9PT, United Kingdom)

Background: Teaching and education skills are a requirement of most post graduate curricula. There are many teaching and training courses, but they are either too detailed for the novice or last several days.

Summary of work: We organised a one day course to introduce teaching and training to junior doctors, consisting of lectures, small group work, role-playing and interactive sessions.

Summary of results: Sixteen trainees attended the day. Grades varied from Foundation Year 2 to 4th Year Specialist Registrar. There was a mix of specialties and mean age was 29.5 years (SD 2.6). 14 participants felt their learning objectives had been achieved. All 16 would recommend the course to their colleagues. There were no adverse comments regarding the short time and the packed programme. Median score of the sessions was 3.69 (range 2-4). Four commented that they were inspired to do more, one wanted an earlier start and one was pleased they had the certificate they attended for.

Conclusions: A one day course as an introduction to teaching and training skills was welcomed by the junior doctors attending.

Take-home messages: In a cash and time strapped NHS, courses like this may help serve better direction of resources at both individual and organisational levels.

What does a quality Faculty Development programme (FDP) look like?

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Background: Faculty Development (FDP) was implemented to ensure: opportunities for staff training in teaching and assessment; quality assurance of teaching and learning; approval from professional regulatory bodies; accreditation from post-graduate training committees; accountability in higher education; medical students attain the professional standards expected by the public.

Summary of work: A Director designated to lead the FDP was appointed. A range of half and full day sessions relevant to teaching, assessment, communication and educational media are organised throughout the academic year. The sessions are interactive, practically applicable and facilitated by experienced and enthusiastic faculty members. Feedback from participants is obtained which guides periodic reviews and modifications to the FDP.

Summary of results/conclusions: The FDP attracts over 800 attendees/year. It is well organised, free, easily accessible and meets the wide training needs of all staff. The success of the FDP has contributed significantly to enhancing the quality of medical education in Manchester. The latter is highly rated in national league tables.

Take-home messages: A quality FDP fulfills expectations from students, participants, patients, the general public, hospitals and professional regulatory bodies.

An Innovative Masters in Medical Education at King Saud bin Abdulaziz University for Health Sciences College of Medicine in Riyadh

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Background: In February 2007, KSAU-HS COM initiated its Masters in Medical Education. Based partially on the Maastricht structure, most is locally developed in Riyadh by a team of 11 teaching faculty.
**Summary of work**: The Masters emphasizes educational theory, practice, and leadership in the health professions context, over twelve 6-week courses, including thesis. Four full-time senior faculty and an outside consultant, with over 125 years of medical education experience in about 15 countries between them, head ten of the Blocks. An additional six junior faculty serve mostly as co-coordinators. Educational methods include lectures, seminars, PBL, group projects, student projects and presentations, and exams, in addition to the relevant reading/research.

**Summary of results**: Two batches of 17 have been admitted to date, selectively drawn from 150 applicants from many institutions each year. Students' disciplines include various medical specialties, nursing, and auxiliary health professions. Ages range from 25-45, and levels of responsibility include deans, associate deans, unit heads, and others. Batch 1 will graduate in February 2009, Batch 2 the following February.

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**4Z/P1**

**The comparative analysis on the rate of return to investment in education between engineering and medical graduates**

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**Background**: This study aims to clarify why medical schools in Korea are very popular in terms of economic factors. Since most excellent students in high schools have chosen medical schools instead of science and engineering colleges (S&E), this study compares the income and costs of the two college graduates.

**Summary of work**: This study will inform how cost and benefit become different through the age-earning profile and how the difference in income between each major graduate based on the rate of return results in difference in personal income. I studied the rate of investment (ROI) of each major.

**Summary of results/Conclusions**: First, except for the first 10 years of education and training period, the lifelong earning of medical school graduates is much higher than S&E graduates. Because many medical graduates become practitioners, middle-aged doctors are able to earn as much money as they were. Second, the effects of on-the-job-training (OJT) is much longer for medical school graduates. Although they invest much more time and money on their OJT, the net effect of their OJT is higher than S&E graduates. Lastly, going to medical schools is much more profitable than going to S&E colleges if the annual interest rate remains low. Even medical school graduates who had borrowed loans would enjoy the 4.5% interest gains after graduation.

**Take-home messages**: All things considered, medical school is very attractive for high school students in terms of its stability as well as its profitability. In this study, I believe that doctors as specialists achieve the effect of education investment.

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**4Z/P2**

**Clinical nurse educators shaping medical students’ learning and professional practice**

_Robyn Hill, Jill French,*, George Somers, Debra Nestel (Gippsland Medical School, Monash University, Building 3W, Room 228, Northways Road, Churchill 3842, Australia)_

**Background**: Undergraduate medical education is generally the domain of medical practitioners. Inadequate induction and supervision of medical students in clinical settings may result in uncertainty about roles and structure, lack of confidence, poor professional performance and failure to achieve curriculum related objectives. Clinical nurse educators have often provided informal support for medical students.

**Summary of work**: In our graduate entry medical program, we have formalised early teaching and supervision of medical students by clinical nurse educators. Educators provide induction, teaching and assessment with small groups of medical students over 17 days in first year. We will present the outcomes of our program evaluation. We present an argument for expanded roles for clinical nurse educators in medical education, especially in the clinical environment.

**Take-home messages**: Benefits accrue to clinical nurse educators and medical students; Students learn in the context of real world health service delivery; Clinical nurse educators function as positive role models; Medical students develop an early understanding of the culture and professional attributes of the health care team; Structured teaching ensures clinical skills learning objectives are attained.

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**4Z/P3**

**Reorganizing health facilities according to a hierarchical healthcare system to prepare future professionals**

_Luiz Carlos Zeferino,*, Paulo Eduardo M R Silva, Lair Zambom, José A Gontijo, Luis A Passeri (School of Medical Sciences - State University of Campinas (UNICAMP), Rua Madre Paulina 66, Campinas 13085-150, Rua Vital Brasil 251, Campinas, 13083-888, Campinas 13085-150, Brazil)_

**Background**: Teaching hospitals in Brazil have assisted patients with more complex diseases, leading teaching staff to be engaged in very specialized fields. Consequently, The medical training in these hospitals has shown to be inappropriate for preparing future doctors to work at primary community health centers or less complex hospitals. Our teaching hospital shows similar characteristics.

**Summary of work**: Within this educational scenario, after 2002, one hospital of intermediary complexity and another of lower complexity were integrated into our University Hospital. Simultaneously, the Medical School at the State University of Campinas (UNICAMP) started restructuring the medical curriculum, extending the apprenticeship to community health centers and to other hospitals, in an attempt to offer undergraduate medical students adequate and sufficient experience to improve their expected competencies.

**Conclusions**: Faculty staff should be trained to teach in different hierarchical levels of the health system. The influence of the tertiary hospital staff on the profile of undergraduate medical students seems to be gradually reducing.

**Take-home messages**: Constructing an efficient healthcare system, and preparing future professionals appropriately continue to be a challenge for developing countries.
4Z/P4
Senior level medical appointments: identifying selection criteria and methods
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Background: In a climate of change in medical education and leadership within the UK, senior level medical recruitment and selection (ie to Consultant level) is becoming increasingly important. However, there is no documented evidence available in the research literature exploring methods of selection in Consultant recruitment.

Summary of work: A review of the current selection process for Consultant recruitment in Scotland was conducted. There were two linked activities. A literature review on best practice selection, and second, consultation interviews to establish the views and experiences of key stakeholders.

Conclusions: Take-home messages: The evidence suggests that the current appointments process for consultant recruitment in Scotland is in need of improvement including: 1) identification of the selection criteria - stakeholders believed that improvements could be made to the identification and assessment of selection criteria (e.g. teamwork, communication skills, leadership etc). 2) Selection methods - interviews were supported as a method for recruitment at this level. However, there was strong support for piloting the use of other selection methods (eg presentations, work-based exercises, personality measures). A clear message from the research is that piloting is essential to generate evidence of the validity, reliability and utility of selection methods in this context.

4Z/P5
This is driving me crazy! Mediation in medicine: the role of a Bio-ethicist and how they can help you resolve patient or team member disputes
Devra Cohen-Tigor*, Rosamond Rhodes* (Union Graduate College/Mount Sinai School of Medicine, Saratoga Springs, New York, United States)

Background: Bioethical conflicts are common in today’s healthcare. In the US, strong patient rights and consumers movements have established the patient/family as central decision-makers. Yet, healthcare providers with different perspectives, and insurance companies and medical institutions with an interest in cost-saving, have contributed to mistrust and contention. Bioethics conflict resolution arises out of the need to assist those involved in mediating discord and reaching fair compromises.

Summary of work: Our work in medical education has led to a model that facilitates conflict resolution. It requires background knowledge of principles of bioethics and communication skills. Starting with that foundation, healthcare professionals should approach a conflict by following several steps: (1) Elicit the concerns from the family and team. (2) Identify the ethical conflicts involved and distinguish them from communication issues so that they can be appropriately addressed. (3) Map out an approach for leading the team and family to a conflict resolution. (4) Synthesize the knowledge and skills of effective bioethics conflict resolution and employ them in helping the parties.

Conclusion: Comprehending the guiding principles of bioethics and employing effective communication can greatly assist healthcare providers in dispute resolution.
Take-home message: Bioethics conflict resolution requires health professionals to synthesize principles of bioethics with effective communication.

4Z/P6
Patient involvement in medical education: a systematic review
Naomi D Quinton*, Vikram Jha, Hilary L Bekker, Trudie E Roberts (University of Leeds, Medical Educaiton Unit, Level 7 Worsley Building, Leeds LS2 9NL, United Kingdom)

Background: There has been emphasis on a more active involvement of patients in medical education, including employment of patients as experts or simulated patients to contribute to the learning experience of medical students. This review integrates evidence on the effectiveness of patient involvement in medical education and answers the following: What are the roles patients may adopt? What aspects of the curriculum have patients been involved in? What settings have been employed to involve patients? Which interventions involving patients are effective? Have issues on ethics, psychological impact and educational policy been addressed?

Summary of work: Cross-sectional survey of primary empirical research examining involvement of patients in medical education employing a systematic review method.

Summary of results: Fifty four papers were included. Patients are involved in teaching clinical and communication skills. Few studies report patient involvement in formal assessment or curriculum design. There is paucity of studies that employ theory to inform interventions. Impact on patients is inadequately explored.

Conclusions: Education policy should address long term impact on patients and students and avoid ‘tokenism’ in patient involvement.
Take-home message: Future research should include specific measurable outcomes and use educational theory to inform interventions.

4Z/P7
Do physicians at university hospitals need a special curriculum during medical school?
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Background: University hospitals are highly specialized centers, handling patient care, research and teaching. Therefore, academic physicians in university hospitals may have special educational requirements.

Summary of work: We compared demographic variables, curricular evaluation and individual choices as well as career development classified by first job in university hospitals based on the ‘University Witten/Herdecke Alumni-Database’. We considered p-value <0.05 as significant using chi-square, t-test and multivariate analysis.

Summary of results: 89 (35%) alumni started their career at university hospitals. No differences were observed regarding age and study duration; however male gender (65% vs. 44%, p=0.001), studying abroad (92% vs. 78%, p=0.004) and PhDs (82% vs. 62%, p=0.001) were associated with a first job in a university hospital. Also, they worked more often abroad (39% vs. 20%, p=0.001) and in leading positions (34% vs. 22%, p=0.04), were involved in research projects (80% vs. 34%, p<0.0001) and student/physician education (88% vs. 54%, p<0.0001).
They had higher demand of research competencies (2.8±1.5 vs. 4.0±1.5, p<0.0001) and analytical thinking (2.0±1.4 vs. 2.4±1.5, p=0.05). After adjusting, working at university hospitals remained independently associated with higher demand of research competence (β=-0.71, p=0.002).

Conclusion: University Hospital physicians were more internationally and academically orientated. Their work was associated with a special demand of research competences.

4Z/P8
The importance of effective organisational support for doctors in training
Pauline Swan*, Barbara Gow* (Oxford Deanery, The Triangle, Roosevelt Drive, Headington, Oxford OX3 7XP, United Kingdom)

Background: It is easy to overlook the role played by administrative and management staff in supporting trainee doctors. This presentation outlines the importance of effective organisational support, how it can be achieved and the impact it can have. As the primary informal point of contact for the trainee, properly trained deanery administrative staff offer practical, non-judgmental support in helping the trainee navigate their way around issues relating to their appointment.

Summary of work: The involvement of key staff in the recruitment and selection process enables the relationship to develop very early on in the trainee's career with the deanery. They help to present the 'friendly face' of the deanery and are key in building good, lasting relationships between the trainee and deanery personnel. The relationship is maintained as staff expertly guide trainees through various issues including removal expenses, travel allowance, inter-deanery transfers, ARCP panel process. As well as providing safe and confidential support for the trainee, the overview acquired by staff can help identify trends or issues within the organisation that may require action.

Conclusion: In addition to good medical education the importance of developing an effective support mechanism within the deanery administrative and management team should not be underestimated.

4Z/P9
The influence of formal training and MSF on leader performance in specialist training
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Background: Formal training programs for leaders in specialist training have evolved. Knowledge of the effect on leader performance is limited.

Summary of work: The study was an intervention study with a control group. The intervention was a 7-days leader course for leaders of specialist training at departmental level (CRE). Performance was measured by a multi-source feedback process (MSF) carried out before and one year after the course. Respondents were doctors in the departments. Results of the MSF were reported in 14 dimensions.

Summary of results: The intervention group (I) consisted of 27 CREs and 289 respondents. The control group (C) comprised 15 CREs and 131 respondents. At baseline the I-group had significantly higher scores than the C-group in six dimensions. No difference between I- and C-group was found one year after. A significant rise in mean scores was found in two dimensions in the I-group compared to three dimensions in the C-group. In both I- and C-group one dimension had a significant lower score one year after compared to baseline.

Conclusion/Take-home message: The combination of formal training (7-day course) with MSF improved leader performance. The improvement, however, was equal to the improvement initiated by MSF alone.

4Z/P10
Medical leadership Competency Framework for UK Doctors, test site evaluation
Veronica Wilkie*, Peter Spurgeon*, John Clark (Institute of Clinical Leadership, Warwick Medical School, University of Warwick, Coventry CV4 7AL, United Kingdom)

Background: In 2007 the Academy of Royal Medical Colleges and the NHS Institute in the UK commissioned a project to develop a leadership competency framework.

Summary of work: During 2007 and 2008 5 test sites were engaged to look at the applicability for integration of the leadership competencies into existing undergraduate curricula, postgraduate training and CPD development. A survey of current activities in this area, as well as focus groups to look at future development needs was carried out.

Summary of results: The competency framework was well received. At the undergraduate level much of what was being suggested was already being done but not explicitly so; Postgraduate training wanted explicit integration into curricula so that it could move forward; There was little formal training outside of educational institutions for those doctors already trained, but the framework was seen as relevant and development was seen as essential. All levels recognised the need for tutor development and training.

Take-home messages: Leadership competencies are recognised as important in developing Doctors in the UK. A lot of the training is already done in UK medical schools but needs to become explicit. Integration of the competencies into Undergraduate and Postgraduate curricula is vital with appropriate support given to the trainers.

4Z/P11
The impact of a leadership course for residents on their teaching of medical students
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Background: Since physicians serve as leaders, it's important that residents develop leadership knowledge and skills during residency. This presentation will describe the curriculum and outcomes of a resident as teacher course specifically designed to improve leadership skills of residents, as applied to their clinical teaching encounters, at the University of Massachusetts Medical School.

Summary of work: Surgery residents in years 1 through 5 completed the course as a required component of their residency. The course aimed to improve residents' understanding of leadership and its relationship to clinical teaching encounters, and then apply it to their work. Evaluation measures were resident self-reports regarding leadership skill and confidence level, and evaluation of their leadership in teaching by third year medical students.

Conclusions: End of course data across 2 years showed that 54% of residents "strongly agreed" and 46% "agreed" they could "apply elements of effective leadership to clinical encounters". As evaluated by third year students, data showed a 7% to 10% increase in resident performance on seven specific leadership elements during the two years after the course, and a 9% increase in overall rating of residents.

Take-home message: Vital to this ongoing program is the active participation of its residency director and clerkship director.connecting the dots: understanding medical student experiences
4AA Postgraduate education 1

4AA/P1
Early identification of educational problems: a challenge for future educators
B T Langham*, I H Martin, A Dickenson (East Midlands Healthcare Workforce Deanery and Derby Hospitals NHS Foundation Trust, Kings Meadow Campus, Lenton Lane, University of Nottingham, Nottingham NG7 2NA, United Kingdom)

Summary of work: A number of our Foundation Year 1 doctors have been identified as “struggling” by their educators and the multi source feedback assessment tool (mini-PAT). From previous information gathered we asked the question as to whether these trainees could have been identified at an earlier stage.

Summary of results: 2 sets of data were available prior to these trainees commencing their 2 year Foundation Programme within our Trust. These were: 1. A transfer of information from the Medical School. 2. OSCE style assessments in the shadowing period prior to commencement of full time employment. We compared the results of the trainees with a mini-PAT score of <4 against those trainees who had been identified as having potential problems from the 2 sets of data.

Summary of results:For the 2 successive years of 2006/2007 we correctly identified from the data 92% of the trainees who subsequently had problems within the first few months of their Foundation Programme.

Conclusion: Data from a variety of sources can be used successfully to anticipate future problems with Foundation Doctors.

Take-home message: The challenge, having recognised a small group of trainees who may struggle in their postgraduate training, is to put effective educational strategies in place.

4AA/P2
Analysing the Foundation Year 1 doctors teaching programme in a district general hospital
Shabanna Din*, Helen Farrimond, Fahad Yousaf (Royal Blackburn Hospital, Haslingden Rd, Blackburn BB2 3HH, United Kingdom)

Summary of work: A project was completed analysing the Foundation Year One (FY1) teaching programme in a district general hospital. Initially the “Curriculum for the Foundation Years” was considered, to identify recommendations for the delivery of teaching. We then assessed the specific methods of teaching used in the FY1 teaching programme. Data were collated on the timing and organisation of formal teaching sessions. The hospital’s teaching feedback forms were analysed, and negative and positive themes identified. Using feedback from the FY1s, suggestions for improvement were given.

Summary of results: Overall teaching was well received. Teaching was predominantly through formal lectures, although interactive and practical “hands-on” teaching was preferred. Nearly 50% of teaching was given by specialist registrars or consultants. Non-health care professionals delivered as many as 25% of sessions. It was perceived that key sessions were delivered too late in the year. The feedback forms used were not evidence based and not validated as assessment tools.

Conclusion: It was concluded that important clinically relevant sessions should be scheduled early in the year. Consultant-led teaching was identified as the most beneficial. Programme directors should consider other methods of formal teaching, and use practical resources for clinical skills.

Take-home message: Consultation with FY1s is essential to achieve high quality education.
4AA/P3

Does the assessor determine the likely outcome of direct observation of procedural skills (DOPS) in foundation programme doctors?

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Background: Continuous review and work based assessment are fundamental to the foundation programme. A number of assessment techniques are employed which can be either planned or spontaneous. Direct observation of procedural skills (DOPS) provide a structured checklist to assess the performance of practical procedures and should be completed at least twice for each placement in foundation year one (FY1). Assessors may be consultants, specialist registrars, general practitioners or appropriately qualified nurses. Our hypothesis is that more junior assessors or those that work closely with the doctor in question are less likely to award a low mark even when appropriate.

Summary of work: All FY1 trainees commencing employment in August 2006 with the Leeds Teaching Hospitals NHS Trust were identified from the Yorkshire Deanery website. Data were collated with respect to the timing of DOPS, grade of assessor and marks awarded for the constituent parts of the checklist. Data were analysed using Microsoft Excel.

Conclusions: The results will be presented. Assessment and appropriate feedback underpin the work based learning of the foundation programme. If marks awarded are not objective then this needs to be addressed in the future revision of postgraduate assessment strategies.

Take-home message: Work based assessments need to be interpreted with care.

4AA/P4

Feedback discussion - best time to provide career advice and guidance - reflections of Foundation trainee and consultant supervisor

Joy Saibal Shome, Subir Mukherjee* (East Kent NHS Trust, QEWM Hospital, St Peters Road, Margate CT9 4AN, United Kingdom)

Background: Appraisal, assessments and feedback of performance are now an integral part of the Foundation programme. Career advice and guidance are also highlighted as an important tool for trainees to decide on future career and application for Specialist training. However, timings of this may not correlate with individual trainee's needs and aspirations. JSS was a Foundation trainee repeating the F2 year as part of the Health Department initiative to enable trainees who missed out on training posts in the 2007 round during the MTAS fiasco. Career advice and guidance was therefore very important to the trainee's individual needs. Career advice was built in as an integral part of a feedback session enabling the trainee to plan the specialist training application process including preparation of the application form, interview practice and advice on multiple deanery applications. The trainee was shortlisted and successful in two interviews and better career advice during feedback session played an important role in this.

Conclusion: Trainee felt more empowered to discuss various aspects of career aspiration with trainer and form individual plan to meet aspiration. Consultants providing career advice need to reflect when is the best time to deliver this for the individual trainee.

4AA/P5

Provision of learning opportunities for Foundation Year 1 doctors in a district general hospital

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Background: The Foundation Programme aims to equip doctors with a range of generic competencies before embarking on specialist training. To achieve this there must be provision of adequate learning opportunities.

Summary of work: To assess this in our hospital we 1) prospectively reviewed patients admitted during ten medical on-calls assessing whether a) the clerkling doctor was a Foundation Year 1 doctor (FY1) b) whether the FY1 presented their cases to the consultant c) whether these patients were transferred to the FY1's home ward enabling continuity in learning and 2) reviewed the Foundation lecture programme assessing a) attendance and b) feedback via a questionnaire.

Summary of results/Conclusions: Of a total of 158 patients admitted a) 4.4% (7/158) were clerked by an FY1 b) 57.1% (4/7) of these were presented to the consultant c) 14.3% (1/7) were transferred to the FY1's ward and 2) review of the programme demonstrated a) overall average lecture attendance was 62% (range 14-93%) and b) of questionnaire respondents (39.4% (13/33)), 69.2% (9/13) agreed that the programme was beneficial.

Take-home messages: With FY1 doctors clerking only 4.4% of medical admissions they are unlikely to achieve generic competencies without improvement in the provision of 'on-the-job' learning opportunities in our hospital.

4AA/P6

Predictors of Foundation training application success: what are the relationships between academic ranking, application form scores and finals results?

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Background: Since 2006, students applying for foundation training have had their prior academic performance incorporated into their applications. Students are ranked by their University and awarded points towards their application, proportional to their academic quartile. Top quartile students receive 45 points whilst those in the bottom quartile receive 30. The foundation training application form is question-based and scored out of 55. The combined application score (out of 100) is used to allocate students to Foundation Schools and ultimately to individual rotations. This study seeks to explore the relationships between academic ranking and finals results, and also between academic quartiles and application form scores.

Summary of work: All final year students at the University of Manchester Medical School have been invited to anonymously participate in the study via a website. They have also been asked for consent for their final exam results to be looked up. There is also space for them to share their experiences. The study is currently ongoing.

Summary of results: Provisional results, using Spearman's rank, support the hypothesis that there is no significant correlation between academic quartile and application form score (correlation coefficient -0.068, n=29, two-tailed significance level 0.726). Data relating to finals results (not available until July 2008) will also be presented.
4AA/P7

Patient views of the doctor-patient relationship
Mais Al Hity*, Naomi D Quinton, Vikram Jha, Trudie E Roberts (University of Leeds, Medical Education Unit, Level 7 Worsley Building, Leeds LS2 9NL, United Kingdom)

Background: The importance of communication skills has been highlighted by the General Medical Council. Medical trainees and junior doctors find it difficult to assess which doctor communication behaviours patients desire. This study explored patients' views of consultations with doctors in three healthcare settings and examined if the view of the doctor-patient relationship is different between patients attending medical and surgical specialties or GP surgeries.

Summary of results: Interviews with patients (n=103) were carried out in the three different settings. Responses were recorded on a 5-point Likert scale. Each question reflected one of four doctor communication behaviours. Statistical analysis of the data was carried out.

Summary of results: Patients ranked doctor behaviours in this order: technical, affective, low doctor controlling, and high doctor controlling. The three most highly ranked doctor behaviours corresponded with published findings.

Conclusions: Age and gender are factors in patients' preference for their doctor's communication behaviour. What patients desire in doctor-communication behaviour is not influenced when they attend medical, surgical or GP doctor consultations.

Take-home messages: We need to look at ways to incorporate these findings into the medical curriculum to benefit medical trainees and junior doctors.

4AA/P8

Comparison of evidence-based answer retrieval from four bedside information sources: a randomized controlled trial
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Background: It is recommended to take a “4S” approach to evidence-based information access, that means starting with systems and proceeding to synopses, syntheses and studies if failure to retrieve evidence-based answers within systems. The present state of evolution of systems is bedside sources of evidence-based information. To choose the appropriate databases regarding the limited financial resources particularly in developing countries is a concern for medical libraries.

Summary of work: This study was a parallel randomized (double blind) controlled trial. Ninety six first-year medical residents were randomly allocated to four parallel groups using: 1) ACP PIER, 2) Essential Evidence Plus, 3) First Consult, and 4) UpToDate. Each participant received three scenarios and asked for retrieving answers within allocated database. Retrieved answers and time-to-answers were recorded by specially designed software.

Summary of results/Conclusions: 82% of questions about diagnosis were answered in UpToDate, 56% in First Consult, 40% in Essential Evidence Plus and 40% in ACP PIER (P=0.014); for questions of prognosis, the answers found 69%, 43%, 31%, 27% by these databases respectively (P=0.003). Therapy questions were answered 91% by UpToDate, 65% by First Consult, 54% by Essential Evidence Plus and 54% by ACP PIER (P=0.027). None of these databases stands superior regarding time-to-answers for questions on diagnosis (P=0.584), prognosis (P=0.396) and therapy (P=0.108).

Take-home messages: Users reported that they found the answers to more questions with UpToDate than the other resources evaluated. However, the time for reaching the correct answers does not obviously differ among evaluated bedside information sources.

4AA/P9

Evaluation of a pilot postgraduate infectious diseases fellowship program in a Japanese medical university
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Background: A pilot postgraduate infectious diseases fellowship program was implemented at Jichi Medical University in 2006. Standardized requirements for a training curriculum have not been established nationally or internationally.

Summary of work: A self-evaluation of the training program during the first 2 years was performed by referring to the requirements (16 items) of the Infectious Diseases Society of America. Each item was evaluated on a scale of 0-2 (0: not met, 1: partially met, 2: met).

Cases seen by the infectious diseases service were also analyzed to evaluate the diversity of patients.

Summary of results: The total score obtained was 17 out of a possible 32. The number of consultations, clinical microbiology rotations, educational conferences, medical economics, and antibiotic utilization met the requirements. Experiences with patients with HIV, sexually transmitted infections, and travel medicine were not able to be offered in our program. Medical and surgical cases were 37% and 33% in 2006, and 31% and 24% in 2007, respectively.

Conclusions: Our pilot postgraduate program needs to improve in the areas where targets were not met.

Take-home message: The lack of standardized requirements for a postgraduate infectious diseases program in Japan should prompt the evaluation of currently existing programs and suggest future feasible recommendations.

4AA/P10

The 1st year intern has more confidence in treatment of critical ill patients after taking anesthetic course
R Wattanavinit*, P Rimpeupun, A Neramittakapong, H Howhan, C Sodapak (Udomtranee Hospital, Amper Meung, Udomtranee 41000, Thailand)

Background: Due to government health policy and revised job descriptions, 35 1st year interns needed to refresh skills and knowledge to treat critically ill patients before learning new skills.

Method: During the first 2 days of the two months, the interns are coached by anesthesiologists in airway management/intubation, fluid resuscitation, fluid therapy, regional block/local anesthesia, oxygen saturation, acute pain management and shock. At the end of the year, the interns are evaluated with questionnaires and interview.

Summary of results: There is statistically significant difference of knowledge and skills in each topic before and after taking the anesthetic course (Wilcoxon Signed Ranks Test; P <0.05).

Conclusion: The 1st year interns at Udon Thani Centre Hospital gain confidence in treatment of critically ill patients after taking the anesthetic course.
Taking time out: junior doctor attendance at weekly teaching sessions
Richard Higgins*, Robert Gregory (East Midlands Healthcare Workforce Deanery, Rutland House, 11 Merus Court, Meridian Business Park, Leicester LE19 1RJ, United Kingdom)

**Background:** Classroom-based, taught education programmes for junior doctors are common across the UK. These programmes are often rated highly by doctors. However, an analysis of attendance patterns reported in a previous study (within a single NHS Trust) revealed a significant problem of non-attendance, with barriers to attendance including service commitments and a lack of protected time for education (Higgins et al., 2006).

**Summary of work:** The authors have since conducted a further analysis of attendance data spanning seven years (2001 to 2008) within the same Trust. Overall, recorded attendance rates have improved significantly since August 2005. We focus on the barriers to attendance previously identified and how some of these barriers have been overcome.

**Conclusions:** The introduction of the Foundation Programme in 2005 provided a timely opportunity to develop strategies to encourage attendance, including greater repetition of sessions across locations and better protection of doctors' time for education. **Take-home messages:** While annual leave, sickness and service demands will prevent doctors from attending all sessions in a programme, recent evidence-based developments have enabled an improvement in attendance. These developments may have implications for the organisation and delivery of education programmes for junior doctors and other healthcare workers.

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What price European Working Time Directive (EWTD) compliance? A tool to measure training climate
J L Clarke*, K Farrell, H A Davies, J G M Crossley, D Bee, P A Stark, F Patterson, M J Bannon, N D S Bax (Academic Unit of Medical Education, University of Sheffield, Sheffield S10 3GJ, United Kingdom)

**Background:** The implementation of the European Working Time Directive (EWTD) has restricted the number of hours worked by doctors in training in the UK. Widespread concern has been expressed regarding the adverse effects of a shorter working week and new shift patterns on the quality of postgraduate training.

**Summary of work:** This paper reports on the development and piloting of a questionnaire designed to measure the quality of the postgraduate training environment giving specific consideration to the impact of EWTD. All consultants and trainees in 3 UK deaneries (approximately 4,500 doctors) were invited (by email) to complete the questionnaire on-line. Respondents represented all specialties and comprised consultants (n = 470) and trainees (n = 1048).

**Conclusions:** Clinical service pressures prevented 56% of junior doctors accessing appropriate formal training due to adverse shift patterns. Junior doctors who stated training is given insufficient priority and who report entering inaccurate data on EWTD monitoring forms was 44% and 26% respectively. **Take-home messages:** The instrument represents a valid tool for the measurement of training climate and the results provide empirical evidence of the training challenges inherent in EWTD compliance.

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Developing a training climate questionnaire to monitor the impact of the European Working Time Directive
J Crossley, J Clarke, K Farrell, H Davies, D Bee*, P Stark, F Patterson, M Bannon, N Bax (Academic Department of Medical Education, 85 Wilkinson Street, Sheffield S10 2GJ, United Kingdom)

**Background:** The European Working Time Directive (EWTD) has halved the weekly working hours of doctors-in-training in the UK. This report describes the evaluation of a monitoring questionnaire to survey its impact on training. Survey results are reported separately.

**Summary of work:** Two clinicians and an organizational psychologist interviewed 45 stakeholders to identify aspects of training impacted by EWTD. Content analysis revealed five themes: 'supervision', 'training opportunities', 'communication', 'resources' and 'values'. The group developed parallel questionnaires for trainees and trainers to rate their experiences against these criteria. Factor analysis and Generalisability Theory evaluated the validity of the questionnaires based on 1518 responses.

**Summary of results:** The final version of the 35-item trainee questionnaire has an eight-factor solution (see below). Rater-to-rater variation had the greatest effect on responses in every domain (factor). The second influence on 'supervision', 'team working' and 'hours of work' was the respondent's department; for 'clinical training opportunities' it was respondent speciality; for 'formal educational provision' and 'national policy initiatives' it was the respondent's hospital; for 'personal motivation' and 'experience at night' it was respondent grade. Consultant trainers and their trainees independently scored their departments very similarly (Pearson co-efficient 0.90, p<0.01).

**Conclusions:** The data support the validity of the questionnaire. **Take-home messages:** Take the survey data seriously.
The effect of European Working Time Directive 2009 on junior doctor training and education

Jonathan Howes*, Peter Spurgeon*, Hywel Thomas, Julia Bedward, Natasha McNab, Ian Davidson (NHS West Midlands Deanery, St Chads Court, 123 Hagley Road, Birmingham B16 9RG, United Kingdom)

**Background:** The latest phase of the European Working Time Directive comes into effect in 2009 bringing down the maximum hours a doctor in training is able to work to 48. There is a fear that the reduction of hours will have an impact on the quantity and quality of education and training available for junior doctors.

**Summary of work:** The West Midlands Workforce Deanery and the University of Birmingham are evaluating 18 pilot sites in England exploring new ways of working and the impact of EWTD 2009. Qualitative and quantitative data have been collected from each pilot site on the junior doctor training and trainee's attendance at the training. The analysis will determine whether certain grades or specialties will be affected more than others and the degree of impact on junior doctors' education.

**Conclusions:** Although EWTD 2009 will mean a shorter week for junior doctors, pilot sites have found new ways of working to improve training. The introduction of new roles for others to undertake work previously carried out by junior doctors and new technology have reduced the impact of EWTD.

**Take-home messages:** A shorter working week will reduce education and training opportunities for junior doctors unless new ways of working are introduced and rotas are re-designed to ensure training will be protected.

### 4BB/P1

**Evaluating the Doctor Patient Society Course within the new integrated first semester curriculum at Ross University School of Medicine**

D Sharma*, J Johnson, B Rios (Ross University School of Medicine, Portsmouth, Roseau PO Box 266, Dominica)

**Background:** The Doctor Patient Society Course was developed in 2004 as a unique and innovative course to address from semester one, at Ross University School of Medicine, the important societal issues affecting the doctor patient relationship. These include an introduction to the dynamics of the doctor patient relationship, cultural and ethical issues, clinical dilemmas, death and dying issues, chronic illness and rehabilitation, professionalism, addiction in the professional, goals of wellness and patient centered care. Students are introduced to epidemiological issues and evidence based medicine. Students also practice history taking and the use of good interview techniques. The lectures are linked to the other subjects taught in the basic science courses centered on a common theme.

**Summary of work:** The course was evaluated in October of 2007, by several measurements including reviewing the students' observations and from the course director's assessment form.

**Summary of results:** The course received a rating higher than the other courses in the first semester. Students particularly valued the clinical relevance of the basic science subjects which were emphasized through this course.

**Conclusions:** This course is perceived as a valuable addition to the first semester curriculum at Ross University.

**Take-home message:** Education can change event reporting attitude and behaviour of residents.

### 4BB/P2

**Changes in medical event reporting attitude and behaviour after a 3-month patient safety curriculum for residents**

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**Background:** It is believed that event reporting contributes to safer health care in a constructive way, as awareness in the weaknesses of a system could be considered as a starting point for improvements.

**Summary of work:** This study explored the effectiveness of a patient safety curriculum on the voluntary event reporting attitude and behaviour of residents. Two courses were organised comprising one plenary day, followed by two half-days in smaller groups where discussions and practicing skills were main objectives.

**Summary of results:** Positive changes were found in the attitude and intentions of the residents directly after the course, as well as three months later. Besides, residents declared to have reported more frequent medical events after following the course.

**Conclusions:** After attending the curriculum participants are able to assess more appropriately which medical events are worth reporting. Participants attribute their increased reporting frequency to the patient safety course.

**Take-home message:** Education can change event reporting attitude and behaviour of residents.

### 4BB/P3

**Integration of sustainable development at Uppsala University Medical school: considerations from the Medical Students' Council**

Oskar Eriksson*, Erik Noppa* (Medical Students' Council, Uppsala University, Medicincentrum, ing. 15, 2 tr Uppsala Akademiska sjukhus, Uppsala 751 85, Sweden)

**Background:** In 2006 a paragraph on the integration of sustainable development in university education was introduced in the Swedish law of higher education. The Medical students' council at Uppsala university was commissioned to investigate how this should be applied in the medical school curriculum, and here we present our considerations.

**Summary of work:** We have made an inventory of to what extent issues of sustainable development are present in the curriculum today, and identified some areas with good potential for further development. We suggest the following subjects to be developed in a sustainable development perspective: Multiresistant bacteria and the overuse of antibiotics; Ethical and socioeconomic aspects on expensive treatments; The handling of potentially hazardous drugs, eg cytotoxic drugs. Furthermore we suggest sustainable development education to have a clear connection to medicine and be taught in an integrated way rather than as an individual subject. It's also imperative that it is perceived as relevant to medical practise by both students and teachers.
Conclusions: Medical school provides many opportunities to integrate sustainable development into the curriculum, some of which we have exemplified. It is, however, of great importance that it is clearly connected to the medical profession in order to motivate students and teachers.

Take-home message: Start by making an inventory of what is already present in the curriculum; Focus on subjects related to medicine.

4BB/P4

European ultrasound education
Jan Dodgeon*, Ricardo Ribeiro, Tuula Fridell, Charlotte Larsen, Anne Sykes, Luis Manca (University of Salford, Allerton Building, Frederick Road, Salford M6 6PU, United Kingdom)

Background: The complexity of diagnostic ultrasound equipment and its range of clinical applications are rapidly increasing, creating a rising demand in education and training for ultrasound users. This, allied with a lack of uniformly accepted standards, creates a potential problem for ensuring future operator competency and therefore accuracy of medical interventions.

Summary of work: To help address these problems, we have developed a European credit-bearing introductory course, built around a two week intensive programme. This course, the first of its kind so far as we are aware, is aimed at postgraduate practitioners from a variety of professions including radiography, medicine and nursing. The course is supported by EU funding from the Lifelong Learning Programme for students from four countries with different approaches to ultrasound practice and education. The course uses innovative teaching methods, including a Virtual Learning Environment and practical scanning seminars with underpinning reflection and critical thinking, giving students the skills to continue their own subsequent personal development. This ground-breaking course also offers development opportunities for staff members of the partner institutions, since joint course design and delivery enable sharing of educators’ skills and competencies. Ultimately, participating institutions hope to develop a joint European Masters programme, supporting harmonisation within ultrasound practice and education.

4BB/P5

Teaching systems based practice learning: a focus on public and patient safety for driving in people with episodic loss of consciousness in Arizona
Joseph Drazkowski*, Jonathan McKinnon, Katherine Noe, Susanne Gauthier, Joseph Sirven (Mayo Clinic Arizona, 5777 E Mayo Blvd, Phoenix 85045, United States)

Background: Driving is a privilege important to the person with epilepsy (PWE) and is governed by laws in almost all countries. Driving restriction of PWE presumes improved driving and public safety. Healthcare providers are usually the source of information for driving laws concerning medical conditions. Informing patients about driving laws places the health care provider at odds with patient desires.

Summary of work: Coordinating systems based practice learning (SBP) into a fellow project required the identification of a clinical problem and designing a study incorporating SBP concepts. “High profile” local car crashes involving PWE prompted investigation into how health care providers counsel patients on driving. The Mayo Clinic Arizona database for qualifying events was queried. Clinical records were reviewed for counseling accuracy for people seen in the emergency department (ED).

Summary of results: 267 cases were identified. Appropriate counseling occurred in 10% of patients evaluated by ED providers and 39% by Neurologists. Computerized ED discharge instructions were modified to include prompts for counseling on driving.

Conclusions: SBP teaching can be incorporated into a trainee’s research/education and can ultimately influence clinical practice and public health.

Take-home message: Improvements in medical practice can be initiated by trainee investigation utilizing SBP concepts.

4BB/P6

Thai medical education in radiology
Phenrui Sirikunakorn* (Bangkok Metropolitan Administration Medical College and Vajira Hospital, 681 Samsen Rd, Dusit District, Bangkok 10300, Thailand)

Background: Bangkok Metropolitan is the capital of Thailand with approximately 10 million people. Bangkok Metropolitan Administration Medical College and Vajira Hospital is the institute that aims to provide 80 medical doctors in each academic year and to encourage good health for people in Bangkok area. For department of Radiology, it consists of Diagnostic Radiology, Nuclear Medicine and Radiotherapy.

Summary of work: We teach medical students the knowledge of 1. The normality and abnormality of Radiographic findings of common disease focusing on modality of imaging, indication, contraindication of radiographic examinations; 2. The principle of Radiation Therapy and cancer management; 3. Medical use of Radionuclide in diagnostic purpose of all systems, Thyroid function test and bone mineral densitometry.

Summary of results: Our radiology course can promote students to obtain the competencies in 1. Professional habits, attitudes, morals and ethics; 2. Communication and interpersonal skills; 3. Scientific thinking; 4. Clinical skill and team work.

Conclusion: The responsibility of Department of Radiology, BMA Medical College and Vajira Hospital is to teach medical students the knowledge-based education of Radiology as well as professionalism, attitudes and ethics.

Take-home message: The professionalism, attitudes and ethics are as important as knowledge-based education.

4BB/P7

Pre-hospital emergency care teaching
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Background: Any doctor, whatever their level of experience, can be first on the scene of an accident. However, training in Basic and Advanced Life Support which is part of the core medical school curriculum in the UK is generally hospital based. It does not equip students to deal with out of hospital emergencies where awareness of potential dangers and ability to make a rapid initial scene assessment are vital skills.
Summary of work: A programme of half-day small group pre-hospital trauma management teaching for all fourth year Dundee medical students started in 2006. Two hour introductory sessions for second year St Andrews students were introduced in September 2007. All teaching is provided by the British Association for Immediate Care (BASICS) Scotland.

Summary of results: Altogether more than 330 students in Dundee will have experienced the half-day programme by the end of the 2007/8 academic year. In addition 144 St Andrews students have had sessions. Both programmes have been rated highly by both students and staff.

Take-home message/conclusion: (1) Pre-hospital trauma management is an important area often not covered in existing undergraduate curricula; (2) Teaching in this area is achievable and well accepted by tutors and students; (3) Agreed competencies need to be considered for inclusion in national curricula.

4BB/P8
Preclinical stage medical students’ attitudes toward disabled people
Hatice Sahin (Ege University, Faculty of Medicine, Department of Medical Education, Ege University, Faculty of Medicine, Department of Medical Education, Bornova, Izmir 35100, Turkey)

Background: The aim of this study is to assess the attitudes of freshmen and sophomore medical students towards disabled people and to present suggestions related to the implementation of disability in the undergraduate medical curriculum.

Summary of work: Data were collected using the Attitudes towards Disabled Persons Scale (the Turkish version) scored on 5-point Likert Scale. Student t test, Two-Way ANOVA and CHAD were used for the analyses.

Summary of results: 471 students participated, response rate being 80.9%. Mean attitude scores displayed no difference in terms of class. Attitude scores were found to be higher in females (123.90), and in those having contact with disabled people (123.40) and prior knowledge about attitudes (122.34).

Conclusions: Establishing early contact with patients and disabled people, adopting practical educational strategies, and providing the students with information on attitudes about disabled people will pave the way for introducing a social model of disability into the curriculum, which will consequently enable students to become conscious physicians with positive attitudes.

Take-home messages: "Social model of disability," which focuses on the individual rather than the disability itself, should be included in the medical curriculum so that the awareness level of prospective physicians will be improved and they can be more successful in formation of a good patient–physician interaction and promotion of health care services.

4BB/P9
Why are we teaching genetics? A study of patients’ expectations and preferences and the implications for education and training
Catherine Bennett*, Sarah Burke, Julie Bedward, Peter Farndon (NHS National Genetics Education and Development Centre, Morris House, c/o Birmingham Women's Hospital, Edgbaston, Birmingham B15 2TG, United Kingdom)

Background: To know what genetics to teach, we need to know where genetics impacts on clinical practice and what genetic information patients expect from health professionals.

Summary of work: In the UK, a qualitative telephone interview study was conducted with 27 people with or at risk of genetic conditions and parents of children affected by genetic conditions to explore their views. After transcription, key themes were identified.

Summary of results: A wide range of healthcare professionals provide genetic information or may be asked about the genetics of conditions. Interviewees did not expect all health professionals to have detailed knowledge of all genetic conditions but they expected them to be aware of relevant genetic conditions and where to refer patients. Over half wanted to receive genetic information from their regular specialty consultant or specialist nurse. GPs were viewed as the best group to co-ordinate support and information for genetic conditions. Participants expected health professionals to be non-judgemental, use genetic terminology appropriately and understand the familial implications of genetic information.

Conclusions/Take-home messages: Patients expect health professionals to understand the applications of genetics to clinical practice. Genetics education and training for health professionals needs to be based on these clinical applications.

4BB/P10
A method to reduce prescribing errors: would an evolution in training improve the recognition of medications by healthcare professions?
C R Davis*, P Bevis, E C Toll, H Burden (Southmead Hospital, Southmead Road, Bristol BS10 5NB, United Kingdom)

Background: Up to 20% of adverse events in hospital are due to medication errors. One unpublished cause includes doctors prescribing a medication based purely on the description by a patient. Pharmacists might identify an unknown drug with a patient’s medication, whilst nurses identify drugs when distributing medication. This study aims to quantify the accuracy of healthcare professionals at identifying medications based on appearance alone.

Summary of work: Members of the multidisciplinary team were presented with five commonly prescribed hospital medications and asked to identify the generic name of each drug. A mean recognition rate (MRR) was calculated for each group, corresponding to the percentage of correct responses. Inter-professional comparisons were made using Dunn’s multiple comparison tests.

Summary of results/Conclusions: 56 participants completed the study (93% response rate). There were significant inter-professional differences in the MRR, with pharmacists able to identify 61% of medications – significantly higher than doctors (19%, p<0.001), physiotherapists (11%, p<0.001) and nurses (35%, p>0.05).

Take-home messages: This study has shown that the majority of healthcare professionals are unable to accurately identify a range of commonly prescribed medications. Perhaps if medicinal recognition was encouraged as part of the undergraduate and postgraduate curriculum, the burden from prescribing errors could be reduced.
Participatory approach in teaching of Hygiene-Environmental Medicine

Ludmila Sevcikova, Lubica Sobotova, Jana Jurkovicova, Zuzana Stefanikova, Tana Noskova, Janka Volekova, Helena Rapantova, Lubica Aghova, Viera Kristova* (Comenius University, Institute of Hygiene, Faculty of Medicine, Spitalska 24, Bratislava 813 72, Slovakia)

Background: The educational process in Hygiene-Environmental Medicine includes various ways of importing knowledge, developing skills and attitudes, and promotes social actions. Participatory education is an interactive approach to learning, based on real-life experiences and critically analyses the organizational and systemic causes of problems. Summary of work: Interactive teaching methods, small group exercises and problem based learning have been commonly used and included self investigation and evaluation of the basic environmental factors (physical, chemical and microbiological qualities of indoor air and water samples), elaboration of the hygienic investigation record from the hospital ward (assessment of the microclimate, acoustic well-being and microbiological contamination). Concerning behavioural and life style factors, nutrition and physical activities have been evaluated in the framework of total cardiovascular risk assessment. Health consultancy for medical students as another interactive teaching method was constructed with several simple screening methods used also in field conditions aimed at recognition of persons at high risk.

Conclusion: Participatory methods help students to develop critical thinking, practice problem-solving and decision-making and gain the confidence to take effective actions in the field. Self-evaluation of health-status is important for future practice. Take-home message: Interactive methods are effective in teaching of Environmental Medicine.

What do students want to learn about medical ethics?

F Fehr* (Heidelberg University, Institute for History of Medicine, Hausacherweg 23, Heidelberg 69118, Germany)

Background: In Germany perhaps more than elsewhere, ethics as a philosophical discipline was understood as a predominantly theoretical endeavour long into the 1970s. The rising popularity of applied ethics and, in particular, medical ethics has changed the scene; a more practical approach and innovative didactics have arrived in the discipline. Due to a reform of the medical curriculum in 2002 and the recommendation of the German Academy for Ethics in Medicine (AEM) for a core curriculum in medical ethics, these developments now have an institutional basis.

Summary of work: In our educational research, we inquired in the students’ view of medical ethics. Therefore we identified in the AEM core curriculum 10 central themes and asked 200 students of 4 subsequent years to rank them for importance for the medical curriculum and professional life.

Summary of results: Surprisingly we found an unanimous trend towards themes at the beginning and end of human life, followed by professionalism, genetic therapy and research with children and the psychiatric ill. The students preferred a teaching format in small case based groups and a seminar-like teaching style.

Conclusions: Our findings influenced the development of the medical ethics course taught in HEICUMED (Medical Curriculum Of The University Of Heidelberg). The detailed course evaluation reflects our reliance on students’ preferences and perceived needs. We identified items for teaching efficiency, ethical reasoning skills and personal moral development. According to the high concordance of perceived importance and learning gain we judge the systematic inquiry in students’ learning preferences as highly efficient for their motivational and ethical development.

Perception of physicians and medical students on common ethical dilemmas in a Pakistani Medical Institute

Bushra Khizar*, Mobeen Iqbal (Shifa College of Medicine, Pitras Bukhari Road, H-8/4., Islamabad 44000, Pakistan)

Background: Knowledge about medical ethics is limited in Pakistan. The teaching of ethics in both under and post-graduate education is not formal. The aim of the survey was to assess the knowledge, attitudes and practices among the medical professionals in relation to medical ethics in an attempt to identify the medical ethics learning needs of Pakistani doctors.

Summary of work: A self-administered structured questionnaire about knowledge, attitudes and practices regarding some common bioethics topics was devised and distributed among medical students and doctors attending a one day medical ethics workshop held at Shifa College of Medicine. The issues included clinical rationing of care, abortion, medical futility, and conflict of interest.

Conclusions: There seems to be a strong element of beneficence in the perceptions of the physicians while making decisions in ethical dilemmas. Physicians also had trouble accepting discontinuation of medical treatment in infants with severe physical or mental impairment or elderly at risk due to terminal disease or vegetative state.

Take-home message: Medical Ethics should be incorporated in both under and post-graduate medical education. Knowledge and necessary Skills are required by medical professionals in order to adopt attitudes helping them in sound ethical decision making.

The attitudes of older people living in institutions and their carers to ageing. Results of research and consequences for long-life education

Hana Janeckova*, I Holmerova, H Vankova, E Dragomirecka (School of Public Health, Institute of Postgraduate Medical Education, Ruska 85, Prague 10005, Czech Republic)

Background: Older people in the Czech Republic feel endangered by the demographic prognosis regarding ageing of the population. Recent outcomes showed a prevailing social stereotype of ageing as a negative one. The objective of our project was to explore the attitudes of older people living in institutions and their carers to ageing.

Summary of work: Attitudes to Ageing Questionnaire (WHO AAQ) was used to measure attitudes of 203 randomly selected residents of homes for the elderly and 90 carers. They expressed the degree of their agreement with 24 statements presented in the questionnaire regarding positive or negative attitudes to ageing. WHO QOL-OLD questionnaire and other tools were also used.

Summary of results: The influence of various factors on the attitudes was evaluated. In personnel, the higher exhaustion, the worse attitude to ageing was observed. Old people accepted old age more positively, appreciating their ability to move, to commit their experience, to cope with their life, to use wisdom etc.
Conclusions: The attitudes to ageing were significantly influenced by cognitive abilities, health status and quality of life. The results can be used in training programmes both for professionals and for older people.

Take-home messages: Older people themselves can express the most realistic appraisal of the last stage of life. (Granted by IGAMZCR 8488)

4BB/P15
Study of occupational medicine in agriculture by home stay
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Background: 50% of occupation in Thailand is in agriculture. The trend of using insecticide has been increased. 5% of agricultural workers who were examined in the hospital outpatient clinic have occupational disease such as back pain, joint pain and insecticide poisoning.

Summary of work: (1) Lecture in the classroom covering: (a) Occupational Medicine in agriculture; (b) Process of problem solving; (c) Risk factor of agricultural workers; (d) Factors affecting the solution of community problems. (2) Practice with agricultural worker's family by home stay in the village. Each student was assigned one agricultural worker's family. The students study (a) lifestyle and the process of agriculture; (b) a walk through survey in agriculture, identifying risk, risk assessment and risk management with the agricultural worker for prevention of occupational diseases; (c) reduce chemicals by using ecological and biological methods; (d) campaign to preserve the environment by planting a tree and burying weeds instead of burning them.

Summary of results: The medical student begins to understand agricultural working, and agricultural life style, and understands nature and how to preserve the environment. The agricultural worker knows how to reduce chemicals and occupational disease to increase quality of life.

Conclusion: The student can learn from the real life style of the agricultural worker, and can suggest to them to reduce chemicals and campaign to preserve the environment.

Take-home message: Expand the preserving the environment project to the people.
5A1

Acquiring knowledge and skills, learning from animal learning
Professor Jan A.R.A.M. van Hooff (Netherlands)

“Animals simply know what to do and when; that is instinct”. Well, it is not as simple as that. Animals, and I mean in the first place “our kind of animals”, namely mammals and also birds, actively construct their image of the world on the basis of experience, learning. Of course this capability rests on inherited and often species specific developmental dispositions that have become phylogenetically adapted to the challenges of the environment in which a species evolves. Traditionally two forms of learning have commanded the attention of animal behaviourists: Pavlovian associative learning and Skinnerian operant conditioning. These are forms of individual learning. In recent decades behavioural biologists have begun to appreciate more and more the important role of social learning in structuring the habits of animals. This can take various forms, such as emotional contagion, emulation, sharing of attention and of imagination, and imitation. An intriguing question is to what extent behaviours such as imitation and teaching require higher forms of consciousness and empathy. We are dealing here with processes that, also in animals, are at the basis of traditions and (proto)cultures, characteristics till recently considered to be the hallmarks of humanity.

5A2

Making Basic Science relevant: teaching for transfer
Professor Geoff Norman (McMaster University, Canada)

Medical students typically spend half their undergraduate career mastering concepts in the basic sciences. The unstated assumption is that these concepts will be useful to them in understanding clinical problems. That is, it is the hope of teacher and learner that, when a senior student encounters a clinical problem, s/he will be able to recall the relevant basic science mechanisms. Many anecdotes from both teachers and students suggest this is not the case; teachers speak of students who “know the facts but can’t problem solve” and students report having to relearn basic science when they reach the clinical years. The process of recalling relevant concepts to solve new problems is called “transfer” by cognitive psychologists. An extensive literature has shown that, consistent with the examples above, transfer is notoriously difficult – typically 10-30% of students who have learned a solution will be able to recall it when confronted with a new problem. However, research has also identified some strategies that can dramatically improve transfer, primarily related to deliberate practice with multiple examples. In this talk, I will review the evidence about transfer, and describe some recent research in medical education that points to teaching strategies to improve transfer.

5A3

Learning medicine in workplaces
Professor Tim Dornan (University of Manchester, UK)

Experience in workplaces is a quintessential part of medical education. At first, students observe workplace activities as outsiders. Then, they frequent workplaces, taking on increasingly participatory roles while they continue to study the principles and practice of medicine. When they qualify, they change abruptly from supernumeraries to paid members of the workforce and learning activities are subservient to patient care. From then on, the workplace is a natural habitat from which they sometimes take time away for educational activities. This presentation sets out to answer questions like: How do people at the various stages of the medical education continuum learn in workplaces? What do they learn? What is the relationship between work and learning? What is the status of the roles of “apprentice” and “master” in the modern age? How does contemporary medical education practice measure up to dominant theories of learning? What new pedagogic approaches should we be adopting?
6C Using virtual patients in the curriculum

Stewart Mennin (Professor Emeritus, University of New Mexico School of Medicine; Former Assistant Dean, Educational Development and Research; Principal, Mennin Consulting & Associates Inc)

How we understand what we do as concerned scholars and medical educators guides our framework for educational change, teaching, planning and curriculum design. Literature based on systems and complexity science presents knowing and understanding in ways that are different from what we typically read and discuss in medical education. The implications of non-linear causality, non-representational cognition and embodied enacting mind will be presented and discussed as part of an emerging understanding of how we interact with and come to ‘know’ the world in which we live. These ideas extend and inform how we learn, remember and experience information.

Take-home message: The experience gained through JUMC and LMU collaboration in the first year of participation in the eViP project could prove to be important for other medical schools considering the inclusion of VPs into their curricula.
6C/SC2
Comparing approaches to the development of a ‘virtual’ healthcare clinic
Ian Sheeler*, Jerome Di Pietro*, Sam Press (St George’s - University of London, London SW17 0RE, United Kingdom)

**Background:** In line with the growing interest in virtual simulations as learning spaces, The Virtual Clinic project is exploring alternative approaches to contextualised learning by embedding materials and resources within online simulations of real-world settings.

**Summary of work:** St George’s has developed four prototypes each virtually representing a healthcare clinic. Each prototype takes a different approach to navigation and interaction ranging from interactive 3D and gaming environments to QuickTimeVR panoramic images and simple graphics with ‘hotspots.’

**Summary of results:** Evaluation in May 2008 will take the form of user trials and focus groups, each prototype being assessed in terms of its ability to engage and facilitate learning. The degree to which each prototype enables the sharing and repurposing of activities will also be considered.

**Conclusions:** The evaluation of our prototypes will indicate whether a bespoke interactive environment can be developed that is engaging to learners and what kind of user interactivity truly creates an immersive experience.

**Take-home message:** Institutions interested in virtual learning spaces such as Second Life may find that developing a custom-built virtual learning space is more effective in terms of cost and meeting the needs of learners. http://bioinf1.sgu.ac.uk/vclinic/

6C/SC3
Blended learning: virtual patients in hematology
Kalle Romanov*, Tom Petterson (Research & Development Unit for Medical Education, POB 63, University of Helsinki, Helsinki 00014, Finland)

**Background:** During a conventional course of hematology four optional virtual patients were offered to the third/fourth year students (N=106). Our web-based virtual patients allow students to perform extensive examinations (medical history, clinical examinations, laboratory tests, imaging). An immediate feedback of cases was displayed after submitting a diagnosis. The virtual patients were available between day 1 and 9 of the course. On day 10 all students received a summary of virtual patients. Day 12 comprised the course exam (six essays and 60 yes/no statements).

**Summary of work:** We investigated how students utilized virtual patients and if the use was associated with the learning outcome. Summary of results: 55 (52%) of the students examined all patients, 28 (26%) did not examine any patients. Proportion of correct diagnoses and duration of examination were 99% for hemorrhagic anemia (22min), 86% for thrombocytosis (30min), 85% for lymphocytosis (28min) and 75% for pancytopenia (25min).

**Conclusions:** The sum score of essays in the course exam was higher among students who carried out all four patients compared to those who entirely refrained from them (43.7 vs. 40.6; p<0.05). The sum score of statements was similar between these two groups.

**Take-home message:** Blended learning with optional virtual patients may help students to understand complex entities in medicine.

6C/SC4
Using e- and game-informed learning to develop new teaching and learning approaches to clinical education in Malawi
Michael Begg*, David Dewhurst (University of Edinburgh, Learning Technology Section, 15 George Sq, Edinburgh EH8, United Kingdom)

**Background:** Medical and healthcare curriculum delivery in Malawi is in the early stages of moving from a traditional, didactic teaching approach to one in which learning is more inquiry-based and self-directed.

**Summary of work:** With eLearning seen as a primary tool in this initiative, the University of Edinburgh’s Learning Technology Section within the College of Medicine and Veterinary Medicine have, with a project grant from the Scottish Executive International Development Fund, been working with Malawian medical and healthcare educators to design, develop and deliver electronic teaching and learning resources – particularly, virtual patient cases. Training the trainers workshops in Malawi together with an online collaborative working environment have been used to develop a multi-disciplinary community of practice among educators who are learning and practicing skills in developing new forms of e-content, and also the skills to disseminate these to colleagues.

**Summary of results:** Here we report on the challenges of working with multidisciplinary groups facing significant change, and the introduction of novel game-informed approaches to content development. Data from evaluations undertaken in 2007 and 2008 are reported which emphasise the importance of local context in developing case context and describe barriers and drivers faced by the project in sustaining engagement and carrying through implementation.

6C/SC5
Correlation between medical students’ grades and computerized multimedia simulated patient cases generated by DxR Clinician Software
Montarat Chinda* (Mahidol University, 270 Ramathibodi Hospital, Praram 6, Rachathewi, Bangkok 10400, Thailand)

**Background:** Medical education through computer software has been widely used among medical students throughout the world. DxR Clinician is available software in Thailand. It is useful for problem-based learning which helps students to improve diagnostic performance. This study aimed to assess the correlation between formative family medicine scores of fifth year medical students and scores of diagnostic reasoning ability provided by DxR Clinician software.

**Summary of work:** In 2006, 116 medical students from Mahidol University, Bangkok, Thailand, were assigned to complete cases in DxR Clinician software. 12 groups of students conducted 12 patient cases. The study compared the degree of correlation between the Clinical Reasoning Score (CRS), Level of Diagnostic Performance (LDP) and scores from formative evaluation in family medicine rotation by using SPSS program.

**Summary of results:** 116 students completed cases. There were no significant correlations between CRS scores and grading scores (p<.001). Moreover, the students who had high family medicine grades had low LDP.

**Conclusions:** The diagnostic reasoning scores generated by computerized simulated patient software could not determine the knowledge level of the students. There was no correlation between the levels of diagnostic performance and students' scores.

**Take-home messages:** Teachers should justify the students' scores when using this educational tool.
6D/SC1
Assessing for learning? Medical students’ experiences of two forms of formative assessment
Maria van de Ridder*, Karel Stokking, William McGaghie, Olle ten Cate (University Medical Center Utrecht, School of Medical Sciences, Universiteitsweg 98; HB4.05, Utrecht 3584 CG, Netherlands)
Background: Feedback is considered import to acquire clinical skills. However, research evidence shows that feedback does not always improve learning and its effects may be small.* The variety of feedback provision may mask its effects. In a randomized controlled trial we investigated the effect of positively (P) and negatively (N) packaged feedback messages (FBM) on satisfaction, self-efficacy, performance, and transfer.
Summary of work: Students (n=74) performed a clinical skill, received either a P-FBM or N-FBM. Dependent variables were questionnaire-based satisfaction, self-efficacy measured with visual analogue scales, videorecordings of a repeated performance analyzed by two raters, and the solving of diagnostic problems on standardized patients. Results were statistically analyzed using ANOVA and MANOVA.
Summary of results: A statistically significant difference was observed (p < .05) for satisfaction, self-efficacy and performance. The effect sizes, using partial eta2, are respectively: .43, .07 and .14. Over time these results changed. No statistical difference was found for transfer.
Conclusions: These results suggest that students who received P-FBM are more satisfied, had higher self-efficacy and performed better than students who received N-FBM. But other factors, such as time and group differences might also influence (mediate) these outcomes.

6D/SC2
Randomized controlled trial on positive and negative packaged feedback messages
Monica van de Ridder*, Karel Stokking, William McGaghie, Olle ten Cate (University Medical Center Utrecht, School of Medical Sciences, Universiteitsweg 98; HB4.05, Utrecht 3584 CG, Netherlands)
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Conclusions: These results suggest that students who received P-FBM are more satisfied, had higher self-efficacy and performed better than students who received N-FBM. But other factors, such as time and group differences might also influence (mediate) these outcomes.

6D/SC3
From “feedback” to “feed forward”: Research and theory to inform feedback, learning and performance improvement
Joan Sargeant*, David Bruce, Peter Cantillon, Karen Mann (Dalhousie University, 5849 University Ave, Halifax B3H 4H7, Canada)
Background: While receiving constructive performance feedback in clinical settings is critical to learning and improvement, providing effective feedback remains an underused teaching strategy. Further, few studies address the impact of feedback upon recipients’ performance; i.e., how “feedback” is used to “feed forward” to guide improvement.
Conclusion/Take-home message: Our findings suggest that every attempt be made prior to the acquisition of such software to identify educational needs and to prioritize aspects related to its intended use in each medical school.
Summary of work: We review empirical and theoretical literature in general and medical education related to provision and use of feedback, and summarize results.

Summary of results: Effective feedback informs learning gaps, skill development, task mastery, performance improvement, and development of self-assessment capacities. Clinical teachers often do not recognize the potential of feedback for learning and improvement, tend to be uncomfortable providing negative feedback, and rarely facilitate reflection on performance to promote learning and improvement. Of note, teachers rated most effective in providing feedback were reflective about their practice and were goal-setters.

Conclusions: Facilitation strategies which actively engage recipients in assessment, reflection and improvement can aid feedback use; i.e. to “feed forward” for improvement. Research is required to determine best use of these strategies and specific outcomes. Faculty development can help prepare faculty in appropriate strategies.

Take-home messages: Feedback is an underused teaching and improvement strategy. Specific strategies can enhance feedback use.

6D/SC4
Using a Relative Ranking Scale to enhance feedback during resident assessments
Milena Forte*, June Carroll, Brian Hodges (Mount Sinai Hospital, University of Toronto, Granovsky Gluskin Family Medicine Centre, 60 Murray St, 4th Floor, Box 25, Toronto M5T 3L9, Canada)

Background: The Relative Ranking Scale (RRS) asks learners to rank a defined set of skills relative to each other and cross-check this ranking with expert opinion. It differs from previous self-assessment models in that learners are not asked to gauge their overall level of competency, nor compare themselves with peers. Rather, they provide a rank order of their strengths and weaknesses. The RRS has been studied as a self-assessment tool but not as a feedback and self-reflection tool.

Summary of work: Faculty and family medicine residents (FMR) at one academic site completed and discussed the RRS at quarterly evaluations. Three faculty and 3 FMR focus groups were conducted over the year to explore the experience of using the RRS. Focus groups were transcribed and analyzed using grounded theory and thematic analysis.

Summary of results/Conclusions: Participating residents felt the RRS promoted more interactive dialogue and enriched discussion around strengths and weaknesses compared to traditional peer-referenced, Likert scale evaluations alone. They also associated the tool with increased self-reflection. Faculty reported the RRS helped structure discussion and increase specificity of feedback.

Take-home messages: The RRS incorporates learner self-assessment to enrich expert feedback. It is a useful adjunct to traditional global rating forms.

6D/SC5
Student self-assessment experience in the PBL course at a College of Veterinary Medicine
Maria Fahie, John Tegzes* (Western University of Health Sciences, College of Veterinary Medicine, 309 E. 2nd St., Pomona 91766, United States)

Background: In order to foster self-directed, life-long learning, the process of student self-assessment in PBL process skills is a threshold event in the Veterinary Basic Sciences course. Our self-assessment process includes facilitated discussions and student completion of a written self-assessment form. Five main categories of skills are assessed: self-directed learning, communication skills, work ethic, interdisciplinary knowledge, and analytical/problem solving skills.

Summary of work: In the past 5 years, several different forms have been developed and used. Currently, we are not enforcing use of any particular form, since all had weaknesses. Students are simply required to communicate in some written form.

Summary of results: Based on feedback from students and faculty we are not convinced that past or current practices are achieving our goal of fostering self-assessment skills. Students often undervalue the process and consider the written self-assessment a waste of valuable study time. Faculty are similarly uncomfortable and have difficulty acting as role models.

Conclusions: Regardless of the tool used, self-assessment requires training about its value and purpose before it will be accepted and used appropriately.

Take-home messages: Self-assessment is a powerful tool in veterinary education, but training is imperative for it to work effectively.

6D/SC6
Formative assessment: students’ goals and activities
S TT Hubers, G J Bok*, R J Veeneklaas, P van Beukelen (Faculty of Veterinary Medicine, University Utrecht, Yalelaan 1, Utrecht 3584 CL, Netherlands)

Background: In Medical Education, formative assessments are considered an integrated part of modern learning environments. Research shows that students have their own goals when entering a learning environment. We argue that students also have goals of their own when taking part in formative assessments and that these goals influence the way they approach these assessments. Therefore, we want to get insight into students’ goals when taking part in a formative assessment and insight in their learning activities within this environment.

Summary of work: Within the Faculty of Veterinary Medicine Utrecht students are able to voluntarily take part in online formative self-assessments in basic sciences. An open-ended questionnaire was used to ask twenty-five students about their goals and their way of using the formative self-assessments.

Conclusions: Most students start using the assessments shortly before the actual exam. Students mention different goals. Their main goals include both checking their knowledge and using the assessments as an actual learning tool. Studying the feedback is an important way to reach the latter.

Take-home messages: Most students state they have achieved their goals. We recommend that formative assessments are designed suitable for both checking knowledge and as a learning tool.
6E/SC1
Attitudes of teachers toward the objectives of medical schools
*M Lovric-Bencic*, G Pavlekovic, D Anticevic, S Kukolja-Tardi, M Taradi (Department of Internal Medicine, Medical School, University of Zagreb, Croatian Association for Medical Education, KBC Zagreb, Kispaticeva 4, Zagreb 10 000, Croatia)

**Background:** We took “The Medical School Objective Project” established by AAMC, and published in Academice Medicine 1999, as a basis for the development of a questionnaire. It was a 5-point Likert scale questionnaire (1-not agree, 5-agree) with 30-items related to the four attributes of the physician: altruistic, knowledgeable, skillful and dutiful.

**Summary of results:** The teachers exhibited a great agreement with the suggested objectives in all attributes. Especially high agreement was found within the attribute of ethical responsibility (toward the patient 4.9, toward the patient’s family 4.9). Less agreement was found within the attribute of dutifulness, objectives related to conflict of interest due to financial and organisational aspects of health care (4.2) and social responsibility of the future doctors (4.0).

**Conclusion:** The results show that there are not big differences between AAMC experts and Croatian teachers in opinions on how future doctors should be prepared to meet society’s expectations.

**Take-home message:** We had also good experience in using the questionnaire as a tool to facilitate discussion about curriculum development within the teaching course “Art of medical education”.

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6E/SC2
Determining an undergraduate paediatrics curriculum for New Zealand
*Ralph Pinnock*, A Alison Jones (University of Auckland and Starship Children’s Hospital, Department of Paediatrics, Child Health and Youth Health, Faculty of Medical and Health Sciences, Park Road, Auckland 2033, New Zealand)

**Background:** Our New Zealand paediatrics undergraduate curriculum is based on a traditional framework of clinical exposure in a department of paediatrics setting. To assist students to develop their clinical reasoning skills we used a ‘presenting complaints’ approach, similar to what has been introduced elsewhere.

**Summary of work:** Using a Delphi type approach, we sent a series of four questionnaires to paediatricians in New Zealand. The aim was to develop a list of common presenting complaints for an undergraduate paediatrics curriculum. After the fourth round of questionnaire distribution, twenty five presentations had been listed and no further presentations were suggested. Further consultation led to the determination of the key knowledge and skills required to manage each of the presentations.

**Conclusions:** We achieved consensus on the contents of an undergraduate paediatric curriculum for New Zealand and have defined the knowledge and skills students are expected to learn.

**Take-home message:** Using presenting complaints as a structure for a curriculum is consistent with the current understanding of the development of clinical reasoning skills. It is possible to reach consensus on the presentations and the knowledge and skills required to manage them.

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6E/SC3
Development and integration of a web-based learning objectives database
I Hege*, K Radon, D Nowak, M R Fischer (Medical Education Unit, University Hospital Munich, Medizinische Klinik - Innenstadt, Ziemssenstr. 1, Munich 80336, Germany)

**Background:** A clear and consistent formulation of learning goals and objectives is a key prerequisite for successful curriculum development. Although a major curriculum reform has been realized at the medical school of the Ludwig-Maximilians-University (LMU), communication about the curriculum has been neglected and learning objectives have so far not been defined consistently.

**Summary of work:** Therefore we developed and analysed a curriculum map based on learning objectives in two exemplary medical content domains (occupational and environmental medicine) using a web-based database. The results of the analysis were discussed and changes implemented into the curriculum. The analysis of the curriculum maps identified the priorities of the respective curricula, non-covered learning objectives, redundancies and the integration level of covered learning objectives. The results of the analysis are discussed and changes are currently implemented into the curriculum.

**Conclusions:** Our application is suitable to support the development of a curriculum map based on learning objectives. It is a suitable tool to support a productive discussion about curriculum planning and visualized the taught content for all teachers and students. The development of a curriculum map including all content domains is under way.

**Take-home messages:** A curriculum map based on learning objectives enhances discussion about the curriculum and is a starting point for implementing and documenting changes.

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6E/SC4
Mapping the curriculum to published learning outcomes: a systematic tool to review course content
*Amanda Fleet*, S Simon Guild (University of St Andrews, Bute Medical School, Bute Buildings, St Andrews KY16 9TS, United Kingdom)

**Background:** Mapping is a way of ensuring that the curriculum matches published learning outcomes (Scottish Doctors and General Medical Council) and allows a systematic review of the curriculum as a whole.

**Summary of work:** We developed an online mapping tool which was based on the Scottish Doctors Learning Outcomes (SDLO) and used it to map all the taught elements of the medical curriculum at St Andrews. This was relatively straightforward as our curriculum is managed electronically with a database entry for each taught element. Once we had mapped to the SDLO, we then utilised a mapping tool developed by Edinburgh University to map to the learning outcomes described in the GMC’s ‘Tomorrow’s Doctors’.

**Summary of results:** We mapped the curriculum to level 4 of the SDLO and were therefore able to interrogate the data from different angles and see whether there was overlap of teaching or inadvertent omission of topics in the curriculum.
Conclusions/Take-home messages: Mapping the curriculum to published learning outcomes allows a systematic review of the curriculum and to define core areas. Finding out overlaps and omissions allowed the more effective management of teaching time.

6E/SC6
Development of core competencies in drug development in medical oncology: an unexplored field
I Duran, L L Siu, A Jimeno, D M Panisko*, L Seymour (Department of Medicine, University of Toronto, 3-805 RFE, Toronto General Hospital, 190 Elizabeth St., Toronto, Ontario, MSG 2C4, Canada)
Background: The field of drug development (DD) has emerged within medical oncology and many specialists have been trained. However, no published document beyond the pharmacology literature provides a framework from which a DD core competency curriculum could be developed. No programs have defined how knowledge, skills, and attitude acquisition of DD by trainees might be evaluated.
Summary of results/Conclusions: A questionnaire and modified Delphi technique were used to obtain consensus on a model of core competencies in DD. This survey was sent out to 43 international oncologists and pharmaceutical-based leaders with teaching expertise in DD (response rate 72%).
Summary of work: 137 items in 12 domains were assessed. A remarkable amount of agreement was observed in clinical trials methodology, principles of DD, ethics, pharmacokinetics, pharmacodynamics, statistics and patient care. The average score was >4/5 and the unanimity score >50% for these domains, indicating strong consensus on their incorporation into a curriculum. More heterogeneous responses were noted for functional imaging, practical skills acquisition, continuing education, manuscript/grant writing and others.
Conclusions/Take-home messages: This survey represents the first formal attempt to identify core competencies in DD in medical oncology. Substantial agreement observed among respondents represents a clear opportunity to formalize an international consensus document.

6F/SC2
Spatial abilities of medical residents in programs with different levels of procedural skills content
Jean Langlois*, George A Wells, Marc Le Courtois, Germain Bergeron, Elizabeth Yetisir, Marcel Martin (Faculty of Medicine and Health Sciences, University of Sherbrooke, 3001, 12e Avenue Nord, Sherbrooke J1H 5N4, Canada)
Background: Spatial abilities have been related to three-dimensional anatomy knowledge and the performance in procedural skills in previous work.

Take-home message: One should evaluate the optimal educational strategies for a person with given spatial abilities to reach and maintain his/her full potential in the performance of procedural skills.

6F/SC3
Residents' representations toward patients of different cultural backgrounds
C Layat1*, N V Vu2, P Dasen1 A Baroffio2 (1Faculty of Medicine, University of Lausanne, and Unit of Development and Research in Medical Education, University of Geneva, Faculty of Medicine, Switzerland; 2Unit of Development and Research in Medical Education, University of Geneva, Faculty of Medicine, Switzerland; 3University of Geneva, Faculty of Psychology and Educational Sciences, Switzerland, Geneva 1211, Switzerland)

Background: Patient-physician communication is central in patient education. Adherence to treatment, especially for migrant patients, is less than 50%. One challenge of physicians' communication is to be aware of their own subjective part (perceptual skills, etc.).

Aim: To analyse residents' representations toward non-adherent patients of different cultural backgrounds and to compare residents' relational approach.

Summary of work: 2 standardised patients (SP) were involved: one Swiss and one migrant (Kosovo). Stimulated recall was used: we interviewed residents on how they perceived both patients and the situations.

Summary of results: Residents perceived differently the patients according to the residents' professional experience, social and cultural background. The migrant SP was represented as a foreigner, poorly educated and generally passive. The culture of the Swiss SP was not relevant. Nevertheless, residents perceived the Swiss SP as well educated and generally assertive. In addition, residents were more "patient-centred" with the Swiss patient than with the migrant patient.

Conclusion: Residents' subjective part guides their representations toward patients of different culture relational approach. Inequity in social healthcare is identified.

Take-home message: Intercultural communication is central in healthcare, but most residents lack relevant skills. The residents' subjective part must be integrated in medical teaching.

6F/SC4
Postgraduate educational environment in teaching hospitals in Iran
Mohammad E Khamseh*, Nasibeh Vatankhah, Hamid R Baradaran (Medical Education & Development Centre, Iran University of Medical Sciences, Tehran 14155-5983, Iran)

Background: Educational environment is an important educational measure in the quality of the doctors' postgraduate training. Since there is little known about this issue, this study performed to measure the educational climate at a national level in Iran.

Summary of work: The Postgraduate Hospital Educational Environment Measure (PHEEM) questionnaire was completed anonymously by 655 voluntary specialist registrars in different specialties in Iran.

Summary of results: The results showed that teaching hospital areas in Iran provided good overall educational environments. The mean score of perception of teaching was 31 out of 60 indicating the teaching is in the right direction. The trainees perceived not good social support (mean score 21.6 out of 44) and gave quite a low score (28.6 out of 56) in their perception of autonomy indicating that they had a negative view about their roles in educational training.

Conclusions: Although the educational environment in postgraduate training in teaching hospitals in Iran generally seems good, it is not supportive to trainees and there is a negative view about their role.

Take-home message: Postgraduate education and training boards in Iran should consider the relevant factors to improve the postgraduate training course.

6F/SC5
Just the FACTs: Evaluation of Faculty Advisory Committee Triads (FACTs), a collaborative mentorship program for postgraduate trainees
Ann Jefferies*, Martin Skidmore (Dept. of Paediatrics, University of Toronto, Room 775, Mount Sinai Hospital, 600 University Avenue, Toronto, Ontario M4G 2S7, Canada)

Background: Traditional one-on-one mentorship is challenging for multiple-site training programs. Therefore, in 2004, our 3-site Neonatal Perinatal Medicine program implemented collaborative mentorship. Its effectiveness was evaluated.

Summary of work: Faculty Advisory Committee Triads (FACTs), comprising 1 staff neonatologist from each site, were created for each trainee. Guidelines for meeting frequency and process were developed. In 2007, participants were sent a questionnaire exploring 3 domains - process, usefulness and opinion.

Summary of results: Twenty-four staff participated in 32 FACTs that mentored 32 trainees. Nineteen staff (79%) and 19 trainees (60%) completed the survey. FACTs met 1-4 times annually, too few for 35%. Staff availability made scheduling difficult. Not all trainees (47%) met with their FACT at the start of training. FACTs were helpful for career planning (81%), resource identification (73%), clinical performance advice (68%) and research motivation (62%). More staff (79%) than trainees (32%) felt FACTs helped trainees get started (p=0.01). Despite various ethno-cultural backgrounds, only 27% thought these should be matched for FACTs and trainees. More than 80% found FACTs supportive and beneficial for providing staff contacts at each site. Trainees preferred FACTs to individual mentors (90%).

Conclusions: Take home messages: In a multiple-site training program, collaborative mentorship was highly rated, despite scheduling challenges. Ensuring meetings at commencement of training may assist trainees' transition into the program.
6G Teaching and learning strategies

6G/SC1
Developing schemes in medical education
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Background: Research shows that schemes can help students acquire and organize knowledge, by supporting cognitive processing. This holds true for both self generated maps and for presenting students with schemes representing knowledge organization of experts.

Summary of work: The aim of the present study was to develop “design rules” that can be used for schematizing medical knowledge of medical experts from various backgrounds. First drafts of these design rules were based on the literature about knowledge organization of medical experts and concept mapping. Eight multi-disciplinary groups of three to five medical experts were asked to develop a scheme of the relevant medical knowledge about either hypertension, diarrhea, proteinuria, or coughing. They had significant difference (p<0.05).

Conclusions: The use of animation and short films and some slides in the beginning of every subject in lectures or lab as an advance organizer increases student interest and understanding of the concepts.

Take-home messages: Shared expert knowledge can be schematized for educational purposes.

6G/SC2
Study of advance organizers effects in learning head and neck anatomy for medical students
Amrollah Roozbehi* (Yasuj Medical Faculty, Motahari Street, Yasuj University of Medical Sciences, Yasuj 75917-41416, Iran)

Background: Advance organizer is a brief, general speech prepared by the teacher, before presenting the new material, to introduce the new lesson. In designing the advance organizer, recall of previous knowledge relevant to the new knowledge is important. It should provide a bridge that links the known to the unknown, by including an abstract outline of the new information and a restatement of old knowledge. Theoretically, this will encourage transfer and application of old knowledge, to make the new knowledge more meaningful to the learner.

Summary of results: Experts themselves were very enthusiastic about schematizing medical knowledge in multidisciplinary groups according to the draft design rules, because it helped them make explicit their combined expert knowledge. Groups addressing a similar topic produced schemes that contained similar concepts, which were structured in a similar way in the schemes. Their main challenge was to relate clinical to biomedical concepts.

Conclusions: A set of design rules is available for schematizing shared expert knowledge.

Take-home messages: Shared expert knowledge can be schematized for educational purposes.

6G/SC3
rTBL - Research Team-based Learning – experimental method to engage medical students with health management and leadership issues
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Background: TBL is increasingly used in medical education, often based on a defined content with the student team's effort usually monitored in-class. An alternative use of the same concept was adapted to serve the needs of teaching Management and Leadership to Medical students.

Summary of work: A pilot experience with three annual cohorts of 8 groups of senior medical students is reported. In teams, students had to conduct a research project into management, economics and leadership issues in health organizations and present a research paper. The aim was to change students' attitudes as they look at hospitals and clinics from an organizational/economical perspective.

Conclusions: The use of animation and short films and some slides in the beginning of every subject in lectures or lab as an advance organizer increases student interest and understanding of the concepts.

Take-home messages: Shared expert knowledge can be schematized for educational purposes.
Summary of results: There was a notable attitude change from a superficial and uninterested stance to a profound, active engagement with solution proposal. Understanding individual team members’ efforts was not easy.

Conclusions: TBL methods seem applicable outside the classroom; for unfamiliar topics team rather than individual exploration may be more engaging.

Take-home messages: Medical students can be interested in Management and Leadership in health particularly when working for solutions. TBL can be expanded into an exploratory and solution-seeking pedagogical strategy.

6G/SC4
Combined Team Based Learning “TBL” and Problem Based Learning “PBL”: a new strategy in medical education
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Background: Many medical schools have adopted Problem Based Learning (PBL) to promote active learning. However, quantitative evidence of the effectiveness of PBL is still weak. Recently, medical educators have begun to use a cost-effective teaching method called team-based learning (TBL). TBL allows a single teacher to incorporate small groups into the lecture hall or classroom and simultaneously conduct activities with all of the groups.

Summary of work: The College of Medicine at the University of Sharjah implemented a curriculum with PBL/TBL “Balanced Guided Discovery” learning approach. Recently they introduced TBL into the foundation year. The Faculty of Medicine at King Fahad Medical City uses a flexible, student-centered mixture of approaches; offering a mixture of problem based small group learning with appropriate lecture and laboratory teaching as well as TBL in different formats. Students’ feedback and assessments from both institutions to date were very positive and encouraging.

Conclusion: Combining PBL with TBL is a practical, cost effective educational approach that teaches higher level cognitive and social skills for medical students in large classes.

Take-home message: A sound approach to medical education is the one that applies multiple settings and flexible teaching strategies that promote learners' engagement and active learning.

6G/SC5
Towards validating breadth of learning style
Thelma Quince*, Željka Djuric, John Benson, James Brimicombe, Diana Wood (University of Cambridge, School of Clinical Medicine, Department of General Practice and Primary Care, Institute of Public Health, University Forvie Site, Robinson Way, Cambridge CB2 0SR, United Kingdom)
Background: “Tomorrow’s doctors” suggests life long learning may be important to medical practice. This may be facilitated by ability to utilize different styles and learn from different experiences.

Summary of work: As part of a longitudinal research programme aimed at identifying factors relevant to medical education and likely to influence the quality of patient care, 301 preclinical and clinical students entering University of Cambridge in 2007 completed Honey and Mumford’s (LSQ). We used a previously developed breadth of learning style index under which students are classified as “broad”, “moderate” or “narrow” depending on number of weak orientations towards individual styles.

Interim results: A quarter of students had “narrow” and 36% had “broad” learning styles with no differences between student type or sex. Breadth of learning was consistently positively related to cognitive empathy (Perspective Taking scale IRI).

Towards validity: To explore breadth of learning we conducted two focus groups, one comprising 6 “broad” students, the other comprising 6 “narrow” students. Topics included perception and definition of learning, physical and social influences on learning and direction and motivation. The nature of each focus group is unknown to the research team, who remain “blind” for data analysis.

Conclusion/Take-home message: Results will inform the degree of construct validity of breadth of learning style measure.

6G/SC6
Good vibrations? Study orchestrations in novice medical students
Goetz Fabry*, Marianne Giesler (Albert-Ludwigs-University, Department of Medical Psychology, Rheinstrasse 12, Freiburg 79104, Germany)
Background: The term “study orchestration” describes individual study approaches students choose in response to specific learning environments. Orchestration means that consonant or dissonant interaction of different learning strategies with other individual aspects (e.g. motivation, epistemological beliefs, professional goals) may occur.

Summary of work: We conducted a study with first year medical students (N=270, 57% female) who completed questionnaires assessing learning strategies, study motivation, epistemological beliefs, professional and personal goals. To detect study orchestrations we conducted a cluster analysis.

Summary of results: A five cluster solution was most appropriate. Two clusters could be assigned to surface-level and another two to deep-level learning. Further characteristic differences were found in motivation, epistemological beliefs and other variables. One cluster (N=31) might represent a dissonant orchestration as students appear less directed in their learning, less motivated and to deep-level learning. Further characteristic differences were found in motivation, epistemological beliefs and other variables.

Conclusions: Cluster analysis proved useful in detecting different study orchestrations. In terms of supporting students to adopt effective learning approaches these results are an important starting point to develop educational interventions customised to students’ needs. Since dissonant study orchestrations may be associated with student failure they are a primary target for mentoring.

Take-home message: Achieving a good sound is always a joint venture. Stay tuned!
6I/SC1
BEME systematic review: Virtual patients

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Background: Virtual Patients are computer-based programs that simulate real-life clinical scenarios in which the learner acts as a health care professional obtaining a history and physical exam and making diagnostic and therapeutic decisions.

Summary of work: To try and clarify these issues, we are conducting a BEME review to determine the impact of structured resuscitation training on healthcare practitioners, their clients and the wider service.

Conclusions: We will present an update of the work of the SR team.

6I/SC2
A BEME review of the impact of structured resuscitation training on healthcare practitioners, their clients and the wider service

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Background: Structured resuscitation training programmes or courses take various forms. All aim to optimise standards of resuscitation and improve patient care. There appears to be no definitive training programme length or content, or a defined optimum time after a course for when a learner should be retrained.

Summary of work: To try and clarify these issues, we are conducting a BEME review to determine the impact of structured resuscitation training on healthcare practitioners, their clients and the wider service.

Summary of results: Searching CINAHL, Pub Med and Medline revealed 3781 articles. These were reduced to 450 ‘possibles’ by a nominated group member. To date, scoring of the abstracts and subsequently full articles has resulted in 109 being included. MESH terms and references from the first 50 articles were reviewed to ensure that no relevant articles had been missed. A nominated group member gave each article a Kirkpatrick score (4 = resulting in organisational change or benefit to patients – see below). To ensure consistency and validity other group members ‘double-scored’ those articles initially classified as Kirkpatrick 3 and above.

Kirkpatrick scores

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Articles have been classified as adult, paediatric, and neonatal and coded. Preliminary findings will be discussed.

6I/SC3
How do the conditions, processes and outcomes of clinical workplace learning interlink? Progress report on a BEME review

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Background: We have published a theoretical model of Experience based learning (ExBL), which identifies ‘supported participation’ as a central condition for learning, identifies organisational, pedagogic and emotional support as preconditions, and emotional and practical learning as consequences of participation. We are also conducting a BEME review in which we have piloted use of the ExBL model as an interpretive framework for this literature, much of which is qualitative.
Summary of work: Our search yielded 75,000 potentially informative publications between 1986 and 2007. For this pilot, we screened 3000 of those citations for empirical studies of undergraduate medical students’ authentic experiences in workplaces. We retrieved 10 articles in full text, and identified any evident causal links between learning conditions, processes and outcomes.

Summary of results/Conclusions: The model provided a useful framework to arrange 68 learning outcomes into a preliminary causal interpretation; 70% were Kirkpatrick level 2 and above; 60% were also strong enough to inform a thematic analysis (> level 3). 32% of outcomes were emotions and 29% were cognitive ‘real patient learning’ outcomes, such as restructuring knowledge.

Take-home messages: A defined theoretical model proved helpful in interpreting complex products of education research, many of which were qualitative.

6J/SC1
Veterinary pathology and PBL: WesternU experiences
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At the College of Veterinary Medicine, Western University of Health Sciences (WU-CVM), Veterinary Pathology is incorporated in the Veterinary Basic Sciences (VBS) Course and presented in a problem-based learning (PBL) format in the first two years of the curriculum. This approach continues in the 3rd and 4th year of the curriculum, where it is incorporated in the clinical rotations or exists as an elective rotation, respectively. VBS are presented in a total of 64 clinical cases that are interdisciplinary in design, delivered weekly in a small group setting, and complimented by self-directed or scheduled laboratory exercises (Multidisciplinary classroom time, Quiz, Question and Answer Sessions, Clinical Skills Labs). Gross and microscopic images (slides) provide base for understanding the pathophysiology, formulation of a morphologic or etiologic diagnosis, and connection between the lesion and clinical signs. Curricular and extracurricular pathology related sessions also provide hands-on experiences and career opportunities early in the veterinary education and allow students to recognize value of veterinary pathology in understanding basics of medicine and its diagnostic application in clinical practice. One of the WU-CVM founding principles is a commitment to student-centered life-long learning, and our educational approaches in teaching Veterinary Pathology fit right in.

6J/SC2
An initial proposal for a systematic review on peer teaching
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Background: The use of students to teach has been accepted as a method for helping faculty to run their courses. However, there has been some debate about the ethical and practical aspects of this type of teaching resource.

Methodology: We shall: (1) define peer teaching for undergraduate teaching inclusively, including the variations adopted at different settings; (2) clarify the rationale behind the adoption of this system and the theoretical framework that nurtures its development; (3) try to identify the objective of each program, its characteristics, the outcomes, and the impact at four different levels: student, peer teacher, course and institution; (4) relate the characteristics of each program with its impact.

Resources: The literature will be thoroughly reviewed in Spanish and English. The collaboration of the BEME central group (A Haig) will be essential for this task. The review strategy will be precisely defined initially and re formulated based on our findings and necessities. Inclusion and exclusion criteria will be clearly set, and an analysis of the methodological quality of the reports analysed will be conducted. The working group will be initially local, although we may consider recruiting other members. We expect to start this project late in 2008 and complete it by the end of 2009 or early 2010.

6J/SC3
OSCE Systematic review: Where do we stand 2 years after the initial pilot with 200 papers?
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Background: A BEME systematic review was undertaken to identify to what extent the OSCE is a valid, reliable and feasible method of assessing the different learning outcomes in undergraduate medical education.

Summary of work: Eight hundred and ninety four papers were reviewed. An interactive Lotus database with browser interface was constructed to replace the usual BEME coding sheets, allowing the establishment of consensus on line. The computerized information system for supporting the systematic review will be demonstrated. The systematic review is examining test reliability and factors that affect reliability, such as level of learner, type of assessor, assessor training, nature of scale (checklist or rating scale), etc. Construct validity is examined by looking at the relation between OSCE scores and other measures related to competence – primarily written test scores and level of learner. Feasibility and acceptability are examined in a more qualitative analysis.

Conclusions: The major challenges identified are related to research complexity: the lack of uniformity in defining and calculating reliability, multiple approaches to validity, variability of study designs, lack of a common OSCE vocabulary and the way authors report their studies. Reviewers were obliged to redefine the initial conceptual framework to cope with the complexity of the material under analysis.

Take-home message: The codification process for a systematic review is a comprehensive process requiring enormous rigor and precise definition but at the same time great flexibility. The construction of a sophisticated electronic instrument was essential to encompass those research demands.

6J/PBL case studies
Experiences from orientation of the first two years of a medical curriculum around clinical scenarios

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Summary of work: The King's College undergraduate medical curriculum had a systems based course with lectures for individual disciplines and a practise of medicine course running through the first two years. There has been a reorientation around 37 core clinical scenario weeks. Each week begins with a clinical problem, mainly based around an individual patient, presented in a lecture theatre to 400 students. The rest of the week consists of basic and behavioural science lectures and small group sessions linked to this clinical area. Each week finishes with a summaring up of the problem.

Summary of results: The system has been well received by students. Scenarios that work best have linked intervening learning sessions closely to the case sharing slides and incorporating direct references throughout the week. Students no longer question the relevance of the topics covered, they do query the depth and extent of clinical knowledge and understanding needed for assessment. They criticise wrap up sessions that merely repeat the introduction and value sessions that introduce new ideas and concepts and bring together the other science material in an innovative fashion. Information on the structure of the programme, the successes, the difficulties of the implementation and its evaluation by students will be presented and discussed.

How do students make sense of the formative assessment opportunities available to inform their learning in a PBL-centred medical course?

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Background: The medical course at Glasgow University is centred on the problem-based learning (PBL) methodology. In order to develop as self-directed learners, it is important that students are able to monitor their own progress. The aim of this study was to investigate which aspects of formative assessment students perceive as being useful and how they use this feedback to inform their learning activities.

Summary of results: A questionnaire was developed to gather data on the perceived usefulness of the various types of formative assessment (n=148). Qualitative data were also gathered in the form of semi-structured interviews (n=5).

Summary of work: The least useful and most variable sources of feedback were written coursework comments and individual interviews. Rated more highly were the non-individualised resources such as exemplar mock examinations and course objectives. Interview data also showed that feedback from students' complex network of peers and previous experience was an important influence on learning.

Conclusions: If students are to continue to receive individualised feedback then ways must be found to improve the quality of this and help students engage with it. Students value and act upon any opportunities to self-assess themselves and hence more of these sorts of activities could be introduced into the curriculum.

Use of reflective journals to enhance learning in a PBL curriculum: significance of critical self-evaluation

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Background: Reflective journals have been used in the medical curriculum to assess areas that are difficult to assess such as students' attitudes, professionalism and teamwork. However, their use early in a PBL course to foster deep learning and enhance students' self-directed learning has not been adequately studied. The aims of this work are: (1) to assess the views of the first-year medical students about learning by reflection, (2) to analyze the reflective journals created by first-year medical students, (3) to assess the impact of training students to construct their reflective journals.

Summary of results: Students believed that reflective journals are useful to their learning and had made their learning more focused and strategic. The reflection helped them to evaluate their progress and develop a deeper approach to their learning.

Conclusions: The early use of reflective journals in a PBL curriculum might be a useful approach to foster students' learning and encourage them to adjust their learning strategies.

Through the patient's eyes: a new approach to problem based learning

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Background: In medical education problem-based learning is an approved teaching method. However, paper cases are insufficient in conveying relevant aspects of an illness such as psychological, social and cultural features of patients' lives, which frequently play a key role especially in chronic diseases.

Summary of work: Patients at Children's Hospital, Boston, MA, have created visual records of their experiences with chronic illness. They were given a camcorder and asked to create video diaries for a period of 6 weeks. Moreover they were given a list of video assignments, specific life situations that they were to document at least once during their visual narrative. We are developing a concept to integrate the rich footage into problem-based tutorials for students (work in progress) and started with a pilot case of a 20-year-old Afro-American female with Asthma.

Conclusions: The new tutorial format would not only visualize a disease from the physician's perspective but also show its impact through patients' eyes. Offered insights will guide the development of more realistic, more humane, and ultimately more effective medical care. Discussing the challenges of how to make paper cases real and how to integrate biomedical and psychosocial concerns in PBL tutorials, we introduce a new approach of teaching methods with documentaries.
Heroes, villains and professionalism

Kirsty Foster*, Chris Roberts (University of Sydney, Northern Clinical School, Royal North Shore Hospital, St Leonards, Centre for Innovation in Professional Health Education and Research, Sydney, NSW 2065, Australia)

Research Question: The aim was to explore, through the reflections of senior doctors, how experiential learning in a clinical environment might inform the development of professionalism in medical students and junior doctors. Specifically, this research addressed two inter-related questions. Firstly: “What are impressions of senior doctors on the ways in which the clinical learning environment has influenced the development of their own professionalism?” Secondly: “How do the reflections of the senior doctors provide insights into the impact of role models in the developing professional behaviours of current medical students and junior doctors?”

Context: To provide high quality holistic care modern doctors need, in addition to medical knowledge and expertise, qualities collectively referred to as ‘professionalism’. Despite rapid expansion of the professionalism literature little research has been reported about the impact of the ‘hidden curriculum’ on learning about professionalism.

Methods: In-depth, semi-structured interviews were conducted with senior doctors. Each participant in the study had been medically qualified for at least ten years and held a senior clinical position either in hospital or in general practice. Interviews aimed to stimulate a narrative account of memories from the doctor’s early clinical training which had informed their understanding of the concept of professionalism or the development of their own pattern of professional behaviour. Following an initial thematic analysis of transcripts, the data were reviewed looking in more detail at the characteristics of the learning experiences and situations which the participants had identified as particularly memorable or impactful.

Results: Twelve doctors, six men and six women, provided in-depth interviews. Nine were hospital-based specialists (representing seven specialties) and three were general practitioners. One general practitioner and one hospital specialist were rurally based. The range of time since qualification in medicine was from 10 years to 40 years. A major theme emerging from the data, and the basis of this paper, was the impact of dominant personalities involved in teaching, serving as role models and having a major impact on the development of professionalism in both positive and negative ways. Further analysis identified characteristics of these ‘heroes’ and ‘villains’ and examined the feelings and emotions engendered in the participants at the time. These memories were often clear even after many years and still provided a steer on current professional behaviour.

Discussion: This is the first study to our knowledge of its kind exploring the long-term impact of role modelling. It is unsurprising that students and junior doctors are influenced by the behaviour of the clinical teachers they encounter during their training. As novices within the medical profession they are often in awe of more senior colleagues who demonstrate excellent medical knowledge and great clinical skill. Participants in this research felt that they had emulated behaviour which they considered good and reacted against copying what they saw as unprofessional behaviour. The heroes and villains were often clinician-scientists. Scientific prowess does not always correlate with high standards of professionalism and difficulties may arise when a charismatic role model displays less than exemplary behaviour to students. The lasting effect of this depended largely on whether they felt encouraged and supported in the learning situation or ridiculed and belittled.

Conclusion: The behaviour they witness and the way in which they are treated in training both at undergraduate and postgraduate level profoundly influences the development of professional behaviour in students and junior doctors for many years. All doctors have a responsibility to ensure that their own behaviour impacts positively on the developing concept of professionalism for medical students and junior doctors. Role models should be heroes rather than villains.


Who are Tomorrow’s Doctors? A narrative inquiry of medical students’ experience of a broader curriculum

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Research Question/Aim: To explore the impact of an extended medical curriculum on the development of a professional identity.

Context: Contemporary discourse has reshaped the definition of what it is to be a doctor. This is reflected in the General Medical Council’s (GMC) guidelines for undergraduate medical education Tomorrow’s Doctors. It is clearly a time for innovation. Yet how we provide robust programmes that will produce Tomorrow’s Doctors is unclear. The GMC is keen to emphasise the importance of personal as well as professional growth, indicating the need for a curriculum less focussed on science based subjects. This would include a more integrated contribution from humanities and social sciences and the introduction of teaching approaches that are student centred and reflective. The intention is to produce doctors who are able to meet the needs of a global society. The development of a student doctors’ professional identity is complex. It is learned through interactions with peers and patients and shaped by the curriculum. This study aimed to assess the potential of the curriculum changes outlined by the GMC by eliciting accounts from a group of students intercalating in a humanities based degree. These narratives will be obtained over a three year period. This paper reports on the findings from year 1.

Methods: The study used a narrative approach to elicit participants’ accounts. The sample was cross sectional and longitudinal. Four students were drawn from an accessible population (n=38) of those intercalating at the time of recruitment (September 2006). These students would re-enter the MChB programme at year 3. To enable data to represent narratives through to the foundation years, three students who had completed an intercalated degree earlier and were about to commence year 4 were included with one junior doctor who had intercalated after year 4. Data were collected via in depth interviews at the beginning of the academic year. Follow up contact was made at the end of the academic year. Where interviews were not possible data were obtained via email or text. The researcher position was collaborative. Interviews were transcribed then summarised locating the main features of the narrative; emails and texts were pasted into word documents.

Results: The data were organised temporally and as one narrative that will be presented to the audience. Phase one is idealism and occurs prior to university; the features are of a hard working, high achiever, good at science subjects. Being a doctor feels the right thing to aim for as a career. Family members/friends are medical. Doctors are perceived as having a high status. Phase two is one of adjustment; at medical school there are different subgroups of students.
It is important to identify with a group with similar world views and career aspirations. Phase three is one of confirmation: during the intercalation year subliminal views are confirmed about the nature of medicine. Exposure to other academic disciplines is welcomed. Students become absorbed by new information. Phase 4 is one of readjustment/conflict: returning to the MBChB, it is hard to fit in with the culture of the health service, conflicts are experienced. The way medicine is seen is to be practised is challenged.

Conclusion: Preliminary results expose one of the dilemmas in medical education; the conflict between the art and science of medicine. This has impact on a curriculum that has traditionally favoured a scientific content. All students enter medical school with an element of idealism. This narrative is hinting at a challenge to bedside teaching methods that reinforce old models. This insight will be developed as the whole group are exposed to clinical medicine for the next two years.


6K/RP3
The effect of enhanced experiential learning on personal reflection
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Research Question: The aim of this study was to examine the hypothesis: the growth of the personal reflection ability of students in an enhanced experiential learning programme is stronger than that of students in a standard educational programme.

Context: Experiential learning is widely used as an educational method for stimulating the growth of students' reflective abilities and the attitude required to become a full-round reflective practitioners. Recommended principles for strengthening its effectiveness are: authentic experience, a clear portfolio structure, a supportive mentor system and appropriate assessment. These enhancements were adopted in an experiential learning programme that was part of a new competence-based curriculum program.

Methods: The level of personal reflection of an exposure group of 394 first-year medical students participating in the new enhanced experiential learning programme was compared to that of a control group of 250 second and 243 third-year medical students participating in the standard problem-based learning (PBL) programme. A pretest-posttest follow-up design was used. Personal reflection was assessed using the Groningen Reflection Ability Scale (GRAS), a one-dimensional, 5-point Likert scale. The students in the exposure group completed the GRAS at the start of their study and at the start of their second year. In the control group, the second-year students completed the GRAS at the start of their second and third year, and the third-year students at the start of their third and fourth year. The data of the second and third-year students were put together as a single data set of measurements in the standard education condition. We controlled for the variables that presumably influence the GRAS score: Gender and Time. Not every student responded at every measurement moment. Therefore, the data called for a multilevel analysis.

Results: The first-year medical students in the exposure group scored at the first measurement 50.2 and at the second 55.1. In the control group, the second-year students scored at the first measurement 52.9 and at the second 55.6 and the third-year students at the first measurement 56 and at the second 55.9. After a year, first-year medical students in the exposure group achieved a level of personal reflection comparable to that reached by students of the control group in their third year. The reflection growth curve of the control group declined slightly in the third year as a function of study time. The difference in growth of reflection was significant (p < .001), with a small to average effect size (ES = .18).

Conclusion: This study supports the suggestions that reflection on experience is enhanced by the mentioned supportive principles. The resulting effect size of 0.18 is considered as small to medium in multilevel analysis. However, it acquires more significance when the relatively small difference between the exposure and the control group is taken into account. The exposure programme combined the existing PBL elements with the new elements of enhanced experiential learning. If the exposure group and the control group were in the same study phase, a larger difference would be expected. This supports the conclusion that the effect on personal reflection was a result of the main difference between the two conditions: the enhanced experiential learning programme. A possible bias effect could be that measurements are not always of the same students. The use of nested data following a multilevel method is an appropriate solution to this problem, although this more demanding technique results in a understimation of power. A full data set would increase the power. Consequently, it is unlikely that this multilevel analysis resulted in an overestimation of the effect size.

To conclude, enhanced experiential learning has a positive effect on the development of personal reflection.


6K/RP4
Social comparison: an additional theory to the learning process of clerks
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Research Question/Aim: The aim of this study is to investigate the applicability of social comparison theory for the learning process of clerks. Focus is on the comparison behaviour of clerks (whether, how and with whom do they compare) and on the positive or negative effects of these comparisons on their learning. Based on social comparison theory the following hypotheses are tested:

1. clerks prefer to compare themselves with other clerks, more than with residents or staff;
2. direction of comparison is more often with clerks performing better (upward) than with clerks performing worse (downward);
3. effect of comparison is more often stimulating than discouraging, both after upward and downward comparison;
4. stimulating and discouraging effect is stronger among clerks high in Social Comparison Orientation (SCO).

Context: Social comparison is a frequent topic of research as is shown by the fast growing amount of literature. Most studies focus on characteristics of student and teacher, learning environment and interaction with patients. In this expanding field, little is known about the influence of social comparison on the learning process of clerks. Main motives for social comparison are self-improvement, self-enhancement and self-evaluation, which suggests an inevitable influence. Social comparison is a central feature of human social life. All people compare their own abilities and opinions - more or less - with the abilities and opinions of others, preferably with others in a comparable situation. Comparisons are made with others performing better and others performing worse. Both kinds of comparisons can lead to stimulating and discouraging effects. Knowledge of the social comparison of clerks and of its positive and negative impact on their learning might create possibilities to improve the learning process.

Methods: Two questionnaires were completed by 437 clerks (response rate 67%). The first questionnaire, the Iowa Netherlands Comparison Orientation Measure (INCOM) was used to determine the SCO. The second questionnaire concerned the direction and effect of comparison. Both questionnaires consist of 11 items (Likert-type: 1=fully agree, 5=fully disagree). The first hypotheses were analysed by comparing the mean scores of all respondents. The last hypothesis was analysed by comparing the mean scores of respondents high and low in SCO, highest and lowest quartile. All hypotheses were tested with a t-test.

Results: The clerks in this study have a mean SCO of 3.43 (SD=.575) which is comparable to the SCO of adults in other studies. They compare themselves more often with other clerks than with residents or staff respectively (p<.001). Direction of comparison is more often upward than downward (p<.001) and effect, both upward and downward, is more often stimulating than discouraging (p<.001).

In line with our hypothesis, clerks high in SCO report a stronger discouraging effect of both upward and downward comparison than clerks low in SCO (p<.005 and p<.001). They also report a stronger stimulating effect of downward comparison (p<.001) but contrary to our expectations, clerks high and low in SCO report no differences in the stimulating effect of upward comparison (p=.890).

Conclusion: The results of our study indicate that social comparison influences the learning process of clerks. Therefore, further research seems worthwhile to gain more specific knowledge of the general and behavioural characteristics of clerks high and low in SCO and of possible circumstances that could strengthen the positive effects of social comparison and reduce the negative and obstructing ones. Such increased knowledge could offer opportunities to favourably guide the learning process of clerks.


Summary of work: In 2007, the Australian Medical Students' Association and New Zealand Medical Students' Association conducted a Medical Student Wellbeing Survey at five universities. The survey investigated four aspects of wellbeing: personal experience, support services, wellbeing teaching, and awareness initiatives.

Summary of results: 1328 students (26.2%) responded to the survey. 32.6% of students feel unhappy and depressed more than usual. 78.1% of students feel comfortable seeking support services offered by their university, but only 46.1% of students feel university services are adequately promoted. 56.2% of students believe they have formal teaching on medical student stress and distress, with 54.4% of these students believing it is approached in an appropriate way. Students want to learn most about methods of helping somebody else cope with stress and distress.

Conclusions/Take-home messages: Medical student wellbeing is an important topic for both students and their educators. The results of this survey help inform universities and other organisational bodies about how they can enhance medical student wellbeing in the context of medical curricula.

6L/SC4
Personality types of medical students and their life satisfaction
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Background: The goal of this study was to investigate personality preferences of medical students and to explore the relationship between personality profiles and their satisfaction with life in general and student life.

Summary of work: To assess personality types, we used the MBTI. The participants were 94 medical students. To investigate life satisfaction of students, we used a questionnaire, which was to be answered on a 5 point scale. The resulting personality profiles were correlated with the scores of the satisfaction with life in general and student life.

Summary of results: First, students with the preference for extraversion and intuition were more satisfied with their life in general and student life than the introversion types and the sensing types. Second, the judging types showed higher scores in the satisfaction with life in general. Third, the scores in satisfaction with life in general correlated positively with the scores in satisfaction with student life.

Conclusions/Take-home messages: The preference to focus on the outer world and to perceive the possibility in the future might show helpful personality types, which were positively correlated with higher life satisfaction. Medical schools should encourage students to try to achieve a balance between the inner world and the outer world, emphasizing the importance of the future perspective, to enhance psychological wellbeing of students.

6L/SC5
MED NORD - wellbeing and study orientations of Swedish and Finnish medical students. A confirmatory study
Kirsti Lonka*, Aki Hagelin, Juha Nieminen, Italo Masiello, Klas Karlsgren, Anna Josephson, Gunnar Birgegård, Harri Hyppölä (Karolinska Institutet, Sweden, University of Helsinki, Helsinki FIN-00014, Finland)

Background: The relationships among medical students' well-being, motivation, and their conceptions of learning and knowledge were investigated. Lonka et al. (2008) developed MED NORD questionnaire and applied an exploratory factor analysis which indicated five factors: Dysfunctional-, Collaborative Knowledge Building-, Cookbook-, Social-, and Individual Abilities orientations. It was of interest, whether this finding could be replicated by using a larger database and confirmatory research methods.

Summary of work: First and fourth year medical students from four Swedish and three Finnish medical schools (N=1017), 66 % female and 34 % male, answered the MED NORD questionnaire. Confirmatory factor analyses and transformational analysis were carried out. Maximum likelihood analysis was applied with a VARIMAX rotation.

Summary of results: The best solution included four factors: Dysfunctional-, Avoidance-, Collaborative Knowledge Building-, and Cookbook orientations. Of these, the last two appeared quite identical with previous results. However, the original Dysfunctional Orientation was divided into a new Dysfunctional Orientation with more general emotional problems (anxiety, exhaustion, and stress) and Avoidance Orientation (lack of interest, task avoidance, belief in innate ability).

Conclusions: The solution was not quite identical to the one found previously by Lonka et al. (2008), but similar basic theoretical phenomena were confirmed even by a much larger sample size.

6L/SC6
Compassion status in final year medical students and risk for burnout
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Background: Risk for burnout is expected to be high within the changing South African health-care environment. This study evaluates whether the compassion status: potential for compassion satisfaction and compassion fatigue risk, contribute to burnout risk in final year medical students. The hypothesis is that compassion fatigue increases burnout risk while compassion satisfaction prevents compassion fatigue and burnout.

Summary of work: During an Ethics Workshop the students (n=207) completed a 66 item questionnaire, scoring on a 6 point scale frequency of experiencing certain characteristics relating to compassion status and burnout in the last week (Stamm BH & Figley CR;1996).

Summary of results: The response rate was 98.6%. Moderate to high burnout risk was observed in 48% of subjects. Significant correlations were observed between burnout risk and compassion fatigue risk (r=0.766; p<0.001), as well as burnout risk and potential for compassion satisfaction (r = -0.566; p<0.001). The risk for burnout increases 12-fold in the presence of compassion fatigue risk and potential for compassion satisfaction does not appear to attenuate this association.

Conclusions: Compassion fatigue increases burnout risk markedly and compassion satisfaction shows no protective effect.

Take-home message: Measures of monitoring compassion status should be implemented to prevent burnout in medical students.
6M/SC1
Addressing concerns of migrating physicians: a web-based network
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Background: Globalization has significantly increased the number of physicians immigrating for training or practice to countries whose medical and general cultures often differ radically from their country of origin. Efforts to develop resources to facilitate their acculturation into new health care systems and medical and popular cultures are paramount.

Summary of work: Based on identification of needs of international medical graduates (IMGs) through focus groups, ECFMG established a web-based resource allowing migrating IMGs to contact volunteer IMG advisors currently or recently in training programs in the US matched to their country of origin, medical specialty, family status and other criteria.

Summary of results: In a survey including participating advisees, advisors and invited non-participants, visas (43%), waivers allowing permanent relocation to the US (38%) and planning for advanced fellowships (39%) were the issues of greatest concern to migrating IMGs. Immediate, practical issues such as obtaining national identification numbers (34%), driver's licenses (32%), credit cards (29%), and housing (33%) were also significant concerns.

Conclusions: Some acculturation questions are subject to local variation based on the advisee's specific destination and are best addressed by advisors in the same specialty or region. Hence, ECFMG will continue its IMG Advisors Network.

Take-home message: The range of concerns identified here indicates that, in addition to centralized information sources, web-based networks can facilitate acculturation of international physicians.

6M/SC2
The use of an Ethical Reasoning Inventory in assessing physicians’ ethical competency
1Tsuen-Chiuan Tsai*, 1Ching-Shui Huang, 2Tsuen-Chiuan Tsai (1Department of Surgery, Cathay General Hospital, 2Department of Community Health Science, 3Department of Medicine, University of Calgary, Canada)

Background: An ethical reasoning inventory (ERI) Part I and II was developed to measure components of physicians’ ethical reasoning abilities. The purpose of this study was to investigate the relationships among subject, country, expert, case, and items.

Summary of work: 15 ethical vignettes were given to 32 Taiwanese and 17 Canadian subjects from three levels of expertise (medical student, resident, and expert). As the subjects solved the ethical dilemma, they were encouraged to verbally think aloud. The verbal responses were analyzed using trained judges familiar with the ERI. Part I and II scores were generated for each subject and the data were analyzed using ANOVA, MANOVA, and Multi-Faceted Rasch modeling.

Summary of results: Part I and II scores were found to be reliable (0.79, 0.86) and valid. Canadian experts performed better than Taiwanese in Part I scores only. Experts performed better than novices (p<0.01) and an interaction effect was found between expertise and country (p=0.04). All items in Part I and II were found to be unidimensional.

Conclusion: The study found clear evidence of differences between countries, level of expertise, and provided direction on how to improve ethical reasoning in medicine.

6M/SC3
Assessment of international medical graduates in the ready to practice pathway
Anne-Marie MacLellan*, Sylvie Leboeuf*, Eric Drouin (Collège des médecins du Québec, 2170, boul. René-Lévesque Ouest, Montréal, PQ H3H2T8, Canada)

Background: The Collège des médecins du Québec (CMQ) is the medical regulatory body in Quebec. Restrictive permits to practice are delivered to qualified practicing International Medical Graduates (IMGs) who meet the credentialing requirements and successfully complete a three month clinical assessment period in accredited postgraduate training sites. Candidates are expected to perform at a level of a postgraduate trainee at the end of training. This study analyses the data from this ready to practice pathway in order to identify factors leading to the successful completion of the assessment period and the positive outcome of entry into practice.

Summary of work: In the last 5 years, the CMQ has studied over 500 requests for restrictive permits, for both specialty and for family medicine practice. The process and the tools used to evaluate the credentials and assess the competencies of IMGs who identify that they are practice ready have been defined and will be discussed. Outcome data is analysed.

Conclusions: Several factors have been identified that predict a successful outcome.

Take-home message: A clinical assessment period of 3 months is sufficient to adequately evaluate sponsored IMGs in the CMQ ready to practice pathway.

6M/SC4
Physicians deal with truth telling: a cross cultural study
1Der-Fang Chen*, 2Ching-Shui Huang, 3Tsuen-Chiuan Tsai (1Department of Surgery, Cathay General Hospital, 2Department of Pediatric, Taipei Medical University Wan Fang Hospital, 3Department of Community Health Science, 3Department of Medicine, University of Calgary, Canada)

Background: The ethical issue of truth telling in medicine may be dealt with differently between Asia and the West. The study purpose is to obtain physicians’ “ethical competency” on solving ethical problems and the reasons for truth-telling. It is to identify gaps between Canadian and Taiwanese experts, across 3 expertise levels.

Summary of work: Using think-aloud method, two vignettes of “breaking bad news and disclosing medical errors” were given to physicians of the two countries at three levels of expertise (i.e., medical student, resident, and expert). The variables are the correctness of decision, perceived confidence, scores of ethical reasoning inventory, and qualitative analyses. 32 Taiwanese and 17 Canadian physicians/students enrolled.

Summary of work: All the Canadian subjects responded adhering to theoretical standards. Most Taiwanese experts chose to break bad news first to families, even agreed on the requirement to disclose to patients themselves.
When dealing with medical errors, some Taiwanese experts (2/6) honestly stated they might hesitate to be honest. The reasons were related to the consequences of the disclosure and of family structure. Using ethical reasoning inventory, experts and Canadians have a better result.

**Conclusion:** The way the physicians dealt with truth telling varies between countries. The outcome will contribute to culturally sensitive education on ethics.

### 6M/SC5

**Variability of accreditation processes throughout the world**

*Marta van Zanten*, John R Boulet, Frank Simon (Foundation for Advancement of International Medical Education and Research (FAIMER®), 3624 Market Street, Philadelphia, PA 19104, United States)

**Background:** Accreditation processes can help ensure the quality of undergraduate medical education. While oversight systems exist in about half of all countries with medical schools, there is variability in both the nature of the authorities and the standards and procedures used.

**Summary of work:** The Foundation for Advancement of International Medical Education and Research (FAIMER®) maintains a database of international accrediting authorities; organizations that certify or authorize undergraduate medical education programs. The directory currently includes authorities for more than 90 countries, and information on the process and standards employed by approximately 40 organizations. The accrediting bodies and protocols were coded in the following categories: governmental body/independent agency, voluntary/mandatory, duration of accreditation, levels of status, standards used, standards available, process (internal/external/final independent review), scope (programmatic/institutional) and consequences/outcomes of accreditation.

**Conclusions/take-home messages:** Over half of the organizations are governmental and in 70% of countries accreditation is mandatory. While numerous instances of comparability of core principles of processes were found, specific areas of divergence were also noted. Information on standards varied considerably. As part of FAIMER’S mission to inform the development of health care policies, we will continue to expand the information on world-wide accreditation procedures and standards available on the FAIMER website.

### 6N/SC1

**Influences on anatomy knowledge of students**

*Esther M Bergman*, Albert J J A Scherbier, Cees P M van der Vleuten (Universiteit Maastricht, Postbus 616, Maastricht 6200 MD, Netherlands)

**Background:** Although extremely controversial, it is argued that limited knowledge of anatomy leads to medical errors. What are the arguments for the poor anatomy knowledge of the present medical students and is there empirical evidence to support these arguments?

**Summary of work:** A review of the literature revealed nine frequently mentioned arguments concerning negative influences on students’ anatomy knowledge. These arguments include ideas about: non-medically qualified teachers, level of detail in anatomy teaching, teaching tools used, teaching in context, innovative curricula, student assessment, lack of attention to anatomy education in research, decrease in teaching time and neglect of vertical integration. Systematic searches were performed to find empirical evidence to support these arguments.

**Summary of results:** Results on each of the arguments range from no evidence to substantial evidence. Some arguments seem to hold some truth (e.g. total anatomy teaching time in a medical curriculum has decreased), but are not linked to anatomy knowledge of students.

**Conclusions:** Present literature does not provide enough information on why anatomy knowledge of students is poor.

**Take-home message:** While further developing anatomy education in our own institutions, we should perform additional research to find more empirical evidence on improving anatomy education.

### 6N/SC2

**Back to the future in the teaching of anatomy to medical students**

*G Bronchti*, M Julien, P Gagné, R Lalonde, R Gareau (Université du Québec à Trois-Rivières; Université de Montréal, CP. 6128, succursale centre-ville, Montréal H3C 3J7, Canada)

**Background:** Cadaver dissection was abandoned at the Faculty of Medicine of the Université de Montréal during the reform of its curriculum in 1993 and the anatomy laboratory was closed. Since then, anatomy is taught using magistral courses, books and CD-ROMs during the premedical year and was included in the Problem Based Learning program during the subsequent two years.

**Summary of work:** In the Fall of 2004, we began a decentralisation process toward a regional campus 150 km away from Montréal at Université du Québec à Trois-Rivières (UQTR). A first cohort of 24 students started at UQTR campus where its great asset was the presence of local expertise in biomedical sciences including an innovative laboratory to teach human anatomy. On the instigation of the medical students, an optional anatomy course using embalmed corpses, plastinated anatomical preparations and very high resolution cameras to allow a large number of students to attend the class simultaneously was created. Within the last two years over 200 students chose this optional anatomy course; its popularity is still growing. In our presentation we shall describe with more details this happy marriage between traditional anatomy teaching for medical students and the use of recent technologies in a highly innovative human anatomy laboratory.

### 6N/SC3

**What is the role of anatomical instruction on the professional development of medical students?**

*Dominic King*, Roberto Di Napoli (Imperial College, South Kensington Campus, London SW7 2AZ, United Kingdom)

**Background:** Anatomical dissection has been a feature of medical education for centuries. Recently anatomy has been downgraded in the medical curriculum. Despite this decline there has been increased debate about the dissecting room’s role as a vehicle for professional development.
**Summary of work:** Qualitative study focusing on 88 students at two UK medical schools. One medical school undertook human dissection whilst the other used alternative learning tools to teach anatomy. The responses of students to questions on the role of their anatomy practicals on the development of core values of professionalism were analysed.

**Summary of results:** There was a significant difference (p<0.05) in students undertaking dissection vs. those not undertaking dissection in their perception of the positive role of their anatomy practicals on the development of certain features of professional behaviour including empathy, compassion, trust, respect, teamwork, understanding the importance of confidentiality and considering doctors' responsibilities to society.

**Conclusions:** The dissecting room may have a key role in professional development and the transformation from student to a caring, competent and professional clinician.

**Take-home message:** More work should be done exploring the role of dissection on professional development and more consideration should be given to this role before further closures of dissecting rooms takes place.

**6N/SC4**  
**Attitudes of final-year medical students and consultant general surgeons to the teaching and learning of anatomy**

Richard D White, Katy M Edmonds, John A Spencer, Rachael A Fraser*, Naveen Kachroo (Department of Anatomy and Clinical Skills, Newcastle University Medical School, Framlington Place, Newcastle-upon-Tyne NE2 4HH, United Kingdom)

**Background:** Once a core part of the undergraduate medical curriculum, there has been a reduction in traditional anatomy teaching in UK medical schools.

**Summary of work:** In parallel studies, we carried out questionnaire surveys of 231 final-year medical students and 46 consultant general surgeons in the North-East of England about the teaching and learning of anatomy at medical school.

**Summary of results:** 90% of consultants felt more emphasis should be placed on undergraduate anatomy teaching, with 89% preferring the use of cadaveric material; 98% of consultants and 91% of students thought that anatomy was relevant to clinical practice; 60% of students felt adequately prepared by their anatomy teaching; 60% of students had encountered problems with their anatomy knowledge in a clinical setting. Student feedback revealed that problems usually arose due to: difficulties in recalling prior knowledge; dissatisfaction with the teaching received; or the inability to apply their knowledge clinically. Postulated solutions included the use of clinical scenarios to make anatomy teaching more interactive.

**Conclusions/Take-home messages:** The importance of anatomy teaching is well recognised by medical students and consultant surgeons alike, and should continue to play a major part in the medical curriculum. Modifications to the course may aid the understanding and recall of the subject.

**6N/SC5**  
**Learn from the dead teachers to care for the living**

Wan-Yi Ho, Mei-Chu Yu, Shih-Chieh Chen, Min Liu, Keh-Min Liu* (Department of Anatomy, Kaohsiung Medical University, No. 100, Shin-Chuan 1st Road, Kaohsiung 807, Taiwan)

**Background:** Human dissection can be a stressful experience for most medical students, as it may be their first encounter with death. Knowing the life stories of donor-teachers and understanding the feeling of families may help students cope with the stresses and motivate them to become good doctors.

**Summary of work:** Besides dissection laboratory sessions, students were required to participate in several activities: visit teachers' families, wash teachers' bodies and hold an introduction ceremony before the course starts; suture teachers' bodies and hold a cremation ceremony at the end of the course. Students also published an essay collection about their experience. We used anonymous questionnaires and the essay collection to study students' attitudes towards dissection.

**Summary of results:** Most students thought that the family visit and introduction ceremony prepared them psychologically for dissection. They agreed that the course changed their attitudes toward death and made them value life more. Major themes of students' essays included: appreciation for teachers' and families' selflessness; their obligations to study hard and become good doctors; humanistic values; reflection on self, life and death.

**Conclusions/Take-home messages:** Human dissection is more than studying body structures and practising manual skills. It also provides the best opportunity to learn professional values from the most altruistic teachers.
Workshop

6P Patient focused simulations for procedural skills: the role of simulated patients

D Nestel*, R Kneebone*, F Bello*, D Tabak* (Gippsland Medical School, Monash University, Northways Road, Churchill 3842, Australia)

Background: Patient focused simulation (PFS) describes scenario-based assessments with a professional actor (Simulated Patient - SP) in each encounter recreating the 'realistic unpredictability' of clinical practice. It offers a conceptual framework which moves beyond the simple repetition of technical tasks addressing challenges of real practice. The Integrated Procedural Performance Instrument (IPPI) consists of procedural skills scenarios, each combining an SP with a simulator or medical equipment. Scenarios are assessed from multiple perspectives - patient, trainee and clinical assessor. Trainee-focused feedback is provided via an electronic assessment system. This multi-layered feedback is available online locating the locus of control with the trainee. This workshop will focus on the role of SPs in the IPPI.

Intended outcomes: Knowledge of PFS, IPPI and underpinning theory; Process for writing scenarios; Insight into the preparation of SPs.

Structure: Introduction to PFS, IPPI and underpinning theory; Demonstration of a scenario; Rapid cycle testing of scenario development; SP training for role and feedback.

Level of workshop: Beginner/intermediate.

Workshop

6Q Formulating and writing learning outcomes to facilitate student learning and for strategic course planning

Matthew C.E. Gwee*, Dujeepa Samarasekera* (Department of Pharmacology; Yong Loo Lin School of Medicine, National University of Singapore)

Background: The medical curriculum for the 21st century requires the use of an outcome-based model for the design and delivery of the curriculum. In this outcome-based model of medical education, the desired attributes of the end-product (i.e. the end-product capability) is first determined jointly by a curriculum committee together with the content experts. The end-product capability is commonly identified in terms of the desired learning outcomes which students must acquire on completing the course of study. The curricula of many postgraduate medical programs have undergone extensive revision and currently address the seven CANMEDS professional competencies. The outcome of their implementation shows that different levels of success have been achieved in different institutions. Various human and material factors are responsible for this, that either hinder or facilitate the implementation process at different educational levels i.e. meso, macro, and micro levels. It is therefore helpful for those involved in implementing curricula to know of the factors that influence this process.

Intended outcomes: (1) To understand the pedagogical principles and general procedure involved in formulating and writing learning outcomes; (2) To explain the educational implications of the terms general course goals and specific learning outcomes for a given course of study; (3) To write statements which clearly convey to students the intended learning (educational) outcomes and the level of performance to be acquired on completing a period of learning; (4) To classify learning outcomes into the cognitive (knowing), psychomotor skills (doing) and affective (feeling) domains of learning; (5) To formulate specific learning outcomes in their own course disciplines; (6) To reflect on and to identify what are the likely benefits and limitations in the application of specific learning outcomes (educational) in their own disciplines; (7) To design and plan instructional strategies that will closely match the specific learning outcomes at the intended level of performance expected.

Structure: The need for and usefulness of formulating and writing learning outcomes will be briefly reviewed first. Participants will then be given the opportunity to work in groups. Each group will attempt to systematically plan a study course through formulating and writing some general goal(s) and specific learning outcomes intended for the course of study. Participants will also be encouraged to reflect on the benefits and limitations of such an educational process in designing a course of study for their own respective disciplines.

Who should attend: This workshop will serve as a useful preparation for all medical teachers who teach in medical school. The educational principles learned can be applied, not only to the design of a whole curriculum, but also to a given lesson (lecture) or a given course module.

Level of workshop: Beginner/intermediate.

Workshop

6R Implementation of postgraduate medical curricula: dos and don’ts

Jamia Busari*, Hanneke Mulder*, Maarten Schutte, Antoinette de Bont, Ronnie van Diemen, Cor de Kroon*, Scheltus van Luijk, Pascale Roovers, Fedde Scheele, Ilja de Vreede, Iris Wallenburg (Atrium Medical Center, Henri Dunantstraat 5, Heerlen 6401 CX, Netherlands)

Background: The curricula of many postgraduate medical programs have undergone extensive revision and currently address the seven CANMEDS professional competencies. The outcome of their implementation shows that different levels of success have been achieved in different institutions. Various human and material factors are responsible for this, that either hinder or facilitate the implementation process at different educational levels i.e. meso, macro, and micro levels. It is therefore helpful for those involved in implementing curricula to know of the factors that influence this process.

Intended outcomes: (1) Participants are aware of the steps necessary for effective implementation of postgraduate curricula; (2) Participants can identify and evaluate factors that hinder or facilitate this process; (3) Participants can exchange experiences and ideas from different contextual backgrounds.

Structure: (1) Introduction (15 minutes); (2) Working on the exercise in groups (30 minutes); (3) Report from the different groups (30 minutes); (4) Conclusions (15 minutes).
**Format:** 3 groups of minimum 5 participants: Group 1: Identify the stakeholders and their interests/stakes; Group 2: define plan for implementation; Group 3: Identify potential factors that can hinder/facilitate process. Each group appoints a chairman and a representative who reports back to the group.

**Level of workshop:** Intermediate.

**Workshop 6S  Exploring the differences between longitudinal progress testing and single point assessments**

**Zineb Nouns***, Adrian Freeman* (‘Charité Universitätsmedizin, Berlin, Germany; ‘Peninsula Medical School Exeter, St Luke’s Campus, Magdalen Road, Exeter EX2 4LD, United Kingdom)

**Background:** Progress Tests are well established and increasingly used in medical education to assess the development of knowledge during training in both undergraduate and postgraduate medical education. They are used formatively and summatively. Traditionally educational establishments will use end of block single point assessments. There are strengths and weaknesses of both systems.

**Intended outcomes:** At the end of the workshop participants will have an understanding of the differences between longitudinal and single point assessments. They will have an understanding of the basic methods of creating progress test systems.

**Structure:** (1) Brief description of progress testing using the real examples from Charité and Peninsula; (2) In a practical part the participants are asked to outline a concept of using Progress Testing at their own faculty from a holistic point of view comprising the benefits for students, curriculum and faculty development and cooperation between many faculties using the same Progress Test. Possibilities and limitations of those concepts will then be discussed together.

**Who should attend:** This workshop is intended for people with an interest in assessment who may have heard about progress testing and wish to explore the concepts further.

**Level of workshop:** Intermediate. Participants should have basic knowledge of assessment principles.

**Workshop 6T  Mapping curriculum outcomes - 40° south to 50° north**

**Geraldine MacCarrick**, Richard Arnett* (Royal College of Surgeons, 123 St Stephens Green, Dublin 1, Ireland)

**Background:** Although the principles underlying Outcome-based education (OBE) were first described nearly 50 years ago, these principles are increasingly relevant to medical education as medical schools seek to make explicit the criteria against which the success of their programs and students should be judged. The approaches used by two medical schools (Royal College of Surgeons, Dublin, Ireland and the Tasmanian School of Medicine, Australia) in developing and mapping learning outcomes for their respective medical programs are presented for discussion and as a framework for the workshop.

**Intended outcomes:** Participants will: (1) explore the value of OBE in the medical education setting as well as some of its shortcomings; (2) explore different approaches/strategies for developing/renewing curriculum outcomes; (3) explore the place of searchable electronic curriculum databases to support an OBE approach and (4) create/refine a plan for implementing OBE in their own institutions.

**Structure:** (1) Review OBE and its place in Medical Education; (2) Describe examples of OBE and curriculum mapping from two institutions - RCSI and University of Tasmania; (3) Open discussion and critique; (4) Demonstrate curriculum database at RCSI; (5) Critique of database; (6) Small groups – create/refine a plan for implementing OBE in own institutions; (6) Large group – Share the work of the small groups; (7) Summary.

**Intended audience:** Medical/Health Curriculum faculty and staff.

**Workshop 6U  Teaching or Assessment? Adapting standardized patient cases for either use**

**Colette Scott**, Gail Furman*, Ann Jobe* (CSEC - ECFMG, 3624 Market Street, Philadelphia PA, United States)

**Background:** Standardized patient educators are challenged to develop high quality case materials for the teaching and evaluation of clinical skills using standardized patients. By varying outcome measures a single case can be used for multiple purposes.

**Intended outcomes:** This workshop will train participants in the key elements of SP test development including case format, principles of good checklist and post encounter note development.

**Structure:** After an introduction to the process of case development participants will be divided into two groups; one group will develop a case for assessment and the other group will develop a case for teaching. The groups will reconvene to discuss approaches to providing feedback for each purpose. An exercise in developing a post encounter note will conclude the workshop.

**Who should attend:** This workshop is intended for medical school SP educators who design or would like to learn how to design standardized patient material for teaching and assessment purposes.

**Level of workshop:** Intermediate.

**Workshop 6V  Setting pass marks for clinical performance assessments**

Emil R Petrusa, Sally Santen (Vanderbilt University School of Medicine, Office for Teaching and Learning in Medicine, 3402 MRB IV, Nashville, Tennessee 37232, United States)
Ensuring examiner consistency: selecting and training 300 examiners for a national high-stakes OSCE

Mei Ling Denney*, Richard Wakeford (Royal College of General Practitioners & University of Cambridge, Hughes Hall, University of Cambridge, Cambridge CB1 2EW, United Kingdom)

**Background:** The QA challenge posed by the Clinical Skills Assessment (CSA) of the nMRCGP arises from it comprising a 12/13-case OSCE, taken by about 3,000 trainees each year, and using new cases daily - requiring a large examiner panel (c. 300). The passing standard depends critically upon examiners' calibration and consistency. We outline the selection and training systems.

**Summary of work:** Selection involves the (MCQ) Examination, a rank-ordering exercise, and a one-day selection centre focussing on task-related skills (listed in assessor competencies). A weekend's training follows, covering assessment fundamentals and practicalities, viewing and grading videos towards marking harmonisation (level; spread; examiner-panel correlation). Ongoing training comprises an initial half day (of a three-day diet), and regular small group exercises based on candidates videoed that morning. Aberrant assessors are targeted.

**Conclusions:** For consistent performance, assessors require significant training, initial and ongoing. We illustrate (with e-photoframe pictures) how this is achieved. It is a major undertaking, requiring creativity, planning and development. We present working documents and video clips.

**Take-home message:** Examiners require key skills and group consistency. They need careful selection and continuing training which requires resource commitment from the examining bodies and the development of training aids.

Comparison of Borderline group method and Borderline Regression method with Modified Angoff method for standard setting in OSCE

Juliette King*, Helen Sweetland, Roger Marshall (Cardiff University, Division of Medical Education, Upper Ground Floor, University Hospital of Wales, Cardiff CF14 4XN, United Kingdom)

**Background:** The literature recommends using a standard setting method related to the global ratings score on OSCE marking sheets (borderline analysis). OSCEs are taken at this institution in 3rd and 5th year. The exams require that students fail no more than two questions in each exam. This means that cut scores must be created for each question rather than the full exam demonstrated elsewhere. It is felt the Angoff score, used to date, is valid so a method which sets a similar standard to this would be the ideal.

**Summary of work:** The global rating scores are already collated at each sitting of the exams. The modified group and borderline regression analyses were carried out using SPSS 12. The values for these were then compared with the Angoff scores using a 2 tailed student t-test. (For the 5th years p=0.4 for the modified group and p=0.00000 for the borderline regression overall).

**Conclusion:** The borderline group method would give a valid way of creating standard set marks for individual questions when related to the already validated standard setting method (modified Angoff).

**Take-home message:** A borderline group method compares favourably with an Angoff method for standard setting individual questions in an OSCE.

Effects of faculty-marker presence on OSCE scores

Young Han Lee*, Jae Beum Bang (Yegunam University, College of Medicine, 317-1, Daemyung-Dong, Nam-gu, Daegu 705-717, Republic of South Korea)

**Background:** Clinical performance assessments are widely used by many medical schools and residency programs. How might a school set a pass mark for these examinations? How might a school establish the validity of such a pass mark?

**Structure:** Participants will go through a standard setting exercise for two assessment exercise for a standardized patient case and an oral exam case. The impact of their pass mark(s) will be demonstrated with actual data. Attendees will also participate in the Hofstee process for setting a test-wise pass mark, a method that combines norm criterion referenced perspectives to arrive at a compromised pass mark. Attendees will discuss the interpretation of their results for an individual student and a whole class. Finally, approaches to validating the case-specific and test-wise pass marks will be discussed.

**Intended audience:** faculty and staff familiar with SP-based and oral exams.

**Level of workshop:** Intermediate. Participants should have a basic knowledge of assessment principles.
6W/P4

Comparing pass scores to candidate performance on items that performed well
Dwight Harley*, Stephen Aaron, Margaret Sagle (University of Alberta, 2-76 Zeidler/Ledcor Centre, University of Alberta, Edmonton T6G 2X8, Canada)

Background: The OSCE is a commonly used performance-based assessment format that provides an objective measure of clinical competency. When an OSCE is used as part of an evaluation process, developing reliable and valid passing scores becomes vital. The literature reports several different methods of standard setting. Results have been inconclusive. In this study the relationship between various checklist-derived passing scores will be compared to candidate performance on items that performed well.

Summary of work: An OSCE was administered to the 134 graduating medical students at the University of Alberta. Students were assigned to one of two eight-station tracks. The tracks were congruent in terms of station content. A student’s score on each station was determined by totalling the number of checklist items satisfactorily completed. A second score was determined for each student by totalling the number of discriminating checklist items satisfactorily completed (”good performers”). Items were designated as “good performers” if their difficulty index was between 0.30 and 0.80 and if the point biserial correlation between item score and the station score exceeded or equalled 0.20. Candidate performance on these items will be compared to results determined by traditional passing scores; specifically, the -2SD, Borderline Group, Holistic, and Yes/No method.

Conclusions: Setting standards using modified Angoff’s and contrasting group method should be used in conjunction as the traditional one. The examination contents and actual student performance should be taken into consideration to set the passing score.

6W/P5

Setting standard for clinical OSCE comparison for 3 methods
Thida Phungtaharn* (Medical Education Center, Khon Kaen Hospital, Srijan Road, Amphur Muang, Khon Kaen 40000, Thailand)

Background: While Objective Structured Clinical Examination has become widely used as an assumptive assessment to assess clinical competence, the methods of setting the passing score are varied and no gold standard has been proposed.

Summary of work: We compared passing scores for 20-station clinical OSCE using 3 different approaches including (i) traditional, (ii) modified Angoff’s and (iii) contrasting group method. Ten experts who were involved with training and the examination were chosen to participate in the standard setting procedure.

Summary of results: It has been found that 19 2, and 6 students failed the examination using traditional, modified Angoff’s method and contrasting group respectively with the passing scores of 60%, 53.6% and 11 out of 20 stations. Judges perceived that the passing score derived from modified Angoff’s method was more realistic because difficulties of the examination were taken into account. The contrasting group method can be applied to a small group of students. Additional benefit of the standard setting process was identifying flaws of the examination for further improvement.

Conclusions: Setting standards using modified Angoff’s and contrasting group method should be used in conjunction as the traditional one. The examination contents and actual student performance should be taken into consideration to set the passing score.

6W/P6

The use of patient scoring in Objective Structured Clinical Examinations (OSCEs)
N F Harvey*, C W Kotze, A Slater, I Haq (Brighton & Sussex University Hospitals, Eastern Road, Brighton BN2 5BE, United Kingdom)

Background: OSCEs are a common form of assessment. Assessment is by a trained examiner and often includes a mark from a simulated patient. However, assessments given by real patients have not been evaluated in this setting.

Summary of work: We studied 4 OSCE stations over 2 days which totalled 213 patient-student encounters. The patient was asked to independently rank the student on three components of attitudes, skills and knowledge on a Likert scale (1-5) and then award a global score of pass, borderline or fail. All scores were compared with those awarded by the professional examiner.

Summary of results: There was 100% correlation in global scores between patients and examiners. However, when looking at the individual components there was no significant correlation.

Conclusions: It is commonplace to obtain a patient assessment of pass, borderline, or fail. This adds little information to the overall assessment. A more detailed evaluation using the three components above, assesses the student from a different perspective to the examiner and may assess different aspects of attitudes, skills and knowledge.

Take-home messages: At the moment global patient assessments have a higher validity than when subcomponents are used. Further work needs to be done on ensuring patient consistency in student assessment.

6W/P7

Can student tutors (as SPs) with a global rating function effectively contribute to enhance the reliability of an OSCE: comparing checklist and global rating?
M T Brehmer*, J H Reißenweber, C Scheffer, M Hofmann, M Rützler (University of Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten 58448, Germany)

Background: The assessment by OSCEs plays a central role in the curriculum of the medical faculty at Witten/Herdecke University. In combination with the MEQ (modified essay question test) they substitute for the Multiple Choice based state medical examinations. It was our aim to investigate if the Student Tutors’ Global Rating as SPs might add a valuable surplus of information from the patients’ perspective.

Summary of work: For the first time during the internal medicine/orthopedic OSCE in winter term 2007/2008 in four stations additionally to checklist rating, global rating by SPs was installed. The checklist and global rating data was subject to statistical analysis.

Summary of results/Conclusions: The achieved findings showed that Student Tutors as SP global raters added a surplus of information that the singular use of checklist rating could not generate. If applicable we suggest the deployment of Student Tutors as global rater SPs to heighten the reliability of the examination.

Take-home message: Student Tutors’ Global Rating adds the “professional” patients’ viewpoint to the assessment and therefore enhances the reliability of an OSCE.
OSCE for evaluating basic practical vascular surgical skills
Jes Sandermann* (Department of Vascular Surgery, Regionshospitalet Viborg, Viborg 8800, Denmark)

Background: It is very important to secure that vascular specialists have sufficient practical surgical skills before entering specialist training. As a part of the evaluation programme a training box has been developed for training vascular anastomotic techniques.

Summary of work: Sixteen potential vascular specialist trainees worked together in pairs alternating between operating or assisting. After having performed one anastomosis each an OSCE was run with one or two assessors at each box. A validated rating scale taking account of the variation in vascular anastomotic methods was used. After intensive vascular anastomotic training the OSCE was run again with other assessors.

Conclusion: The OSCE test was well accepted giving an intense training atmosphere. There was a statistical significant improvement in technical anastomotic skills independent of the background of the trainees.

Take-home message: OSCE is a very good and valid test method of vascular surgical skills. Testing before and after intense training led to an optimal training condition. The young candidates do benefit from both operating themselves and seeing others at the same level doing so.

Validation of The British Society of Colposcopy and Cytopathology Accreditation OSCE
M Shehmar*, M Cruikshank, C Redman, I Fraser, E Peile (University Hospital Coventry and Warwick, Clifford Bridge Road, Coventry CV2 2DX, United Kingdom)

Background: The British Society of Colposcopy and Cytopathology (BSCCP) have introduced a new assessment in the form of an OSCE. Upon obtaining a pass mark, the trainee is awarded an accreditation to practice independently.

The PMETB publication ‘Principles for an assessment system for post graduate medical training’ states ‘methods will be chosen on the basis of validity, reliability, feasibility and cost effectiveness.’ It also states that ‘studies to establish the validity of new methods will be undertaken’.

Aims: 1. To examine the validity of the BSCCP OSCE; Methodology: 1. A quantitative study of data collection via two questionnaires. 2. Comparison of the OSCE marking scheme with a national validated marking scheme (mini-CEX). Validity: Face validity; This was tested using a questionnaire to trainees. Content validity: Exam content was mapped against the blueprint. Construct validity: This was tested by using the construct of experience. We hypothesise that people who are more experienced in the field of gynaecology will perform better at certain OSCE stations. ANOVA using SPSS 15 was used to establish a significant difference. Concurrent validity: We compared the OSCE marking scheme with the mini-CEX in gynaecology, looking for correlation. Reliability: This was determined using Cronbach’s alpha for internal consistency. Complete results for 90 participants will be presented.

Performance of medical students compared with practicing doctors in an OSCE assessment
Luci Etheridge*, Alison Sturrock (Academic Centre for Medical Education, University College London, 4th Floor Holborn Union Building, Archway Campus, Highgate Hill, London N19 5LW, United Kingdom)

Background: The GMC Fitness to Practise Test of Competence for poorly performing doctors consists of an objective structured clinical examination (OSCE) and a knowledge test. The OSCE aims to test doctors in a range of skills. Results are interpreted by comparison of the doctor’s score with doctors at all stages of training. To enhance this data, we have collected information about the performance of medical students.

Summary of work: We invited senior University College London medical students to participate in assessment pilots that fully registered doctors had volunteered to attend. These days assessed either Obstetrics & Gynaecology or Emergency Medicine. OSCE assessors were blinded as to the candidate’s grade. The mark sheets used a generic judgement scoring system of Acceptable, Cause for Concern or Unacceptable (A, C, U). We have analysed marks received in different domains both quantitively and qualitatively.

Conclusions: Medical students scored as well as doctors in areas representing professionalism, communication and data gathering for Concern or Unacceptable (A, C, U). We have analysed marks received in different domains both quantitively and qualitively.

Take-home message: No significant correlation was found between social interaction anxiety/social phobia and their performance scores.

The relationship between medical students’ self-statement measures of social anxiety and OSCE scores
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Background: OSCE is a stressful, demanding task in which the examinee should perform clinical skills under assessors’ observation and interact with SP. Level of social interaction anxiety/social phobia may influence OSCE scores. The purpose of this study was to examine the correlation between social interaction anxiety/social phobia and OSCE scores.

Summary of work: A 12-station OSCE was administered to 119 third year medical students at the Kyung Hee University School of Medicine, Seoul, Korea. All students were asked to respond to the social interaction anxiety scales and social phobia scales after the completion of OSCE. We calculated Pearson’s correlation coefficient between social anxiety scores and OSCE scores.

Conclusions: An initial idea that level of social interaction anxiety/social phobia is related with OSCE scores was not proved in this study.
Development of clinical skills with the OSCE

Objective: To compare the development of clinical skills of third year students with the OSCE.

Background: The first semester of third year takes place in hospitals (H) and family medicine units (UMF) where they have the opportunity to see patients in these scenarios at the side of their tutors. Summary of work: We evaluated 84 students with the OSCE, 42 from H and another 42 from UMF. The sample was selected by a stratified randomized method from the 800 students. Each exam consisted of 18 stations of six minutes, seven of physical examination, six of interrogation, two of Rx interpretation, two of laboratory interpretation and one of vaccines. Statistical analysis: Univariated with simple frequencies, means and standard deviation of the stations. We also applied Cronbach Alfa to obtain the reliability of the exams and a t-Test to compare the groups. Summary of results: The means of these exams were 49.6 for H and 48.6 for UMF groups. The reliabilities were 0.63 and 0.56. There was no significative difference in the t-test between the two groups. Conclusions: There is a need to do a study at the end of the course to compare the development of clinical skills, and the OSCE is an important instrument to do it.

Background of the AMEE conference.

Take-home messages:

6W/P13
Pilot exam during medical internship with the OSCE

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Objective: To evaluate internship students in order to prove new scenarios, standardized patients and stations.

Background: The medical internship relies on 670 students every year, so to evaluate this population requires a constant renewal and the increasing of stations, scenarios, professors and standardized patients which implies a great challenge. Summary of work: 102 students of the medical internship were selected to be evaluated in the OSCE. 18 new cases, 84 standardized patients and 3 head clinics were proven. Each exam consisted of 18 stations of six minutes each, fifteen of interrogation, one of physical examination and two of interpretation of laboratory studies. Statistical analysis: Univariated with simple frequencies, means and standard deviation of the stations. We also applied Cronbach Alfa to obtain the reliability of the exams. We applied variance analysis to measure the difference between the stations and the clinics. Summary of results: The means of these exams were 53.9. The reliability of the exams were: 0.44 from 0.59 and 0.81. The grades rank of the stations was from 40 to 70 with eleven stations above and seven below the mean. Conclusions: The challenge is to evaluate all the internship students with the OSCE in a relatively short period.

Evaluation of clinical competence during internship with the OSCE

Iztacihuatl Del. Iztacalco, México D.F. 8810, Mexico)

Objective: To evaluate clinical competence of students at the middle of Internship.

Background: The Internship corresponds to the fifth year. The students have the opportunity to attend patients supervised by tutors through six areas for two months in each of: Gynecology, Surgery, Family Medicine, Internal Medicine, Emergencies and Pediatrics. Summary of work: We selected 184 students by a stratified randomized method from the 670 students of the Internship and we evaluated them with the OSCE. These exams were done on two dates. Each exam consisted of 18 stations of six minutes, three of physical examination, ten of interrogation, two of Rx interpretation, two of laboratory interpretation and EKG. Statistical analysis: Univariated with simple frequencies, means and standard deviation of the stations. We also applied: Cronbach Alfa to obtain the reliability of the exams and a t-Test to compare the two exams. Summary of results: The means of these exams were 56.4 and 57.8, there was no significative difference and standard deviations of 7.1 and 6.9. The reliabilities were 0.69 and 0.66. Conclusions: The OSCE is a method to evaluate clinical competence and at the middle of the Internship is a good moment to know the level to encourage them to achieve the objective.

Can cultural competence training impact students’ OSCE performance one year after the curriculum?

Ming-Jung Ho* (National Taiwan University, Department of Social Medicine, College of Medicine, No. 1, Ren-Al Road, Section 1, Taipei 100, Taiwan)

Objective: To compare the development of cross-cultural communication skills immediately after the curriculum, but the long-term impact is worthy of further investigation.

Background: There is no evidence demonstrating the long-term effect of patient-centered cultural competence training in non-Western settings. The aim of this study is to examine whether a patient-centered cultural competency curriculum improves medical students’ cross-cultural communication skills.

Summary of work: Fifty-seven medical students during their Internal Medicine clerkship in Taiwan were randomly assigned to either the control (n=27) or one of two intervention groups: a basic intervention (n=15) and an extensive intervention (n=15). Both intervention groups received two comparable 2-hour patient-centered cultural competency workshops. The extensive intervention group received additional 2-hour practice session. The control group received no training. At the end of the clerkship, all students were evaluated with an objective structured clinical examination (OSCE). Summary of results/Conclusions: Scores of the extensive intervention group were significantly higher than basic intervention and control groups in eliciting the patient’s perspective. Scores of both intervention groups were significantly higher than the control group in exploring the social factors. A year later, a comparable OSCE was administered, and the analysis will be ready to be presented at the AMEE conference. Take-home messages: Patient-centered cultural competency training can produce improvement in medical students’ cross-cultural communication skills immediately after the curriculum, but the long-term impact is worthy of further investigation.
6W/P16
A study to assess the transferability of a new training course between UK centres

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**Background:** The new St. John Ambulance ‘Student Doctor’ course culminates in an OSCE. Two courses were run during 2007 at centres in Leeds and Newcastle. Both cohorts undertook their OSCE at the Leeds General Infirmary. This study compares the performance of students from both cohorts, to assess transferability of the course between different centres.

**Summary of work:** Both OSCEs were co-ordinated by Healthcare Professionals. The same mark schemes were used for both assessments. A failure of two or more stations or a total mark of less than 150 (75%) was classed as a ‘fail’. The results were collated on the day of the assessment.

**Summary of results/Conclusions:** 94% of Leeds students passed the exam. The average mark at each station was 87.14%. 6 station ‘fails’ were recorded out of 108. All Newcastle students passed the exam. The average mark for each station was 87.58%. 1 station ‘fail’ was recorded out of 36.

**Take-home messages:** Students from both centres performed to a high standard in the OSCE demonstrating proficiency in key areas. The new training course has been shown to be transferable between two UK teaching centres. These results can be used to support the introduction of the course at more UK centres.

6W/P17
Assessment of clinical competence by instructors and students in OSCE during pre-clinical practice for pediatric dentistry

Shigenari Kimoto*, Mitsuhito Matsuzawa, Mitsuyoshi Kubota, Akira Sugaya (Kanagawa Dental College, 82 Inaka-cho, Yokosuka, Kanagawa 238-8580, Japan)

**Background:** OSCE has been identified as one of the most valid tools for assessing clinical competence. We considered the assessment by instructors and students in OSCE during pre-clinical practice for pediatric dentistry.

**Summary of work:** The subjects were 111 fourth-year undergraduate students. Role-playing involving topical application of fluoride to a patient and giving precautions to the guardians of patients was performed by 3-student subgroups. Each student alternated playing the roles of dentist, guardian and observer in turn. The instructor and the students who played observer in each group assessed the skills for topical application of fluoride and the attitude. All students assessed their own skills and attitudes after OSCE.

**Summary of results:** The average OSCE scores from the instructors and students were compared with the scores on paper examinations. There was no correlation between the OSCE score and scores on paper examination for students whose OSCE scores on self-assessment were higher than those assessed by instructors; however, relatively high correlation was observed for students whose OSCE scores on self-assessment were similar to those on assessment by instructors.

**Conclusions/Take-home messages:** It is considered that self-assessment of students after OSCE facilitates the students’ objective recognition of their achievement of the SBOs.

6W/P18
360° assessment in ethical OSCE

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**Background:** Raters of Objective Structured Clinical Examination (OSCE) usually assess examinees’ competency in 1 perspective. This study aims to use 360° assessment to cover various perspectives of raters, examinees and simulated patients (SP).

**Summary of work:** The cross-sectional study was conducted in 36 sixth year medical students in 2007. In each station of OSCE, the students were assessed by 2 raters during the first 6 minutes. For another minute, the student did the self-assessment while the SP evaluated the students. Focus group and in-depth interviews were conducted to find out the usefulness of the SP.

**Summary of results:** Using 360° assessment revealed the focus of various assessors. Raters tended to focus on the contents while students stated that they had a chance to reflect on their pitfalls during self-assessment, and SPs were found to be sensitive to the students’ expression. However, this took more time and may distract the student from the flow of the examination.

**Conclusions:** Using the 360° assessment allowed the students to have insight into their performance. SP was useful regarding emotional expression which made the examination more realistic.

**Take-home messages:** 360° assessment is of use when there is a good checklist and good raters.

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**6X eLearning tools**

**6X/P1**
The IAMSE/HEAL Collaboratory: Working together to add user-generated, Web 2.0 content to a digital repository

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**Background:** The International Association of Medical Science Educators (IAMSE) and the Health Education Assets Library (HEAL) partnered to create the IAMSE/HEAL Collaboratory. IAMSE is a nonprofit professional development society organized and directed by medical faculty members; HEAL is a digital library that provides freely accessible, high quality digital teaching resources for health sciences educators. The purpose of the Collaboratory is to provide a dynamic, interactive communication environment built by and for medical educators; it allows IAMSE members to contribute, download, discuss and review resources to improve and innovate their teaching. Features include: user reviews of materials; a user generated wiki; user keyword tagging; and a collaborative peer review process.
**Summary of work:** A programmer began work on the Collaboratory features in January 2008, under the guidance of the IAMSE Technology Committee. A separate committee was formed to develop procedures for peer review of submissions from IAMSE members.

**Conclusions/Take-home messages:** The results of the Collaboratory project, to be completed in July 2008, will be presented. This project demonstrates that it is possible for two organizations with a shared vision to work together to create an innovative resource designed to benefit both organizations and medical science educators.

**6X/P2**

Reusing learning objects: does anyone really reuse them?  (Results of our survey)

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**Background:** The NeuroLogix Exam website was developed from 2001-2004 (http://library.med.utah.edu/neurologicexam/). We have been collecting data on our users since 2004. Any of the 253 videos can be downloaded and opened with a password provided after filling out a form and agreeing to the Creative Commons license for attribution, noncommercial use, and sharing. Educators are being encouraged to re-use these learning objects. While our original focus was medical training, who else is re-using our movies? What were their top search words or phrases, and where should we add more content? We present results of the survey which provides insight into the usefulness of our videos, materials we should acquire, and information on how the materials are being re-purposed (lecture, website, web link, PowerPoint, case study, exam review, in examinations). We hope these results will encourage further sharing of educational patient materials by others using such sites as HEAL (http://www.healcentral.org/).

**Summary of results:** In 2008 a survey to assess the use of the movies was emailed to our list of requesters. We knew their country, their professional role (student, therapist, MD, neurologist, nurse, physician assistant), and proposed use. We present results of the survey, which provides insight into the usefulness of our videos, materials we should acquire, and information on how the materials are being re-purposed (lecture, website, web link, PowerPoint, case study, exam review, in examinations). We hope these results will encourage further sharing of educational patient materials by others using such sites as HEAL (http://www.healcentral.org/).

**Conclusions:** Our results provide important data for us to share with others who may have similar projects. We hope these results will encourage further sharing of educational patient materials by others using such sites as HEAL (http://www.healcentral.org/).

**6X/P3**

Mark-ups in e-based radiology: a useful tool?

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**Background:** In the new medical curriculum radiology is partly e-Learning blended education. In the e-Learning course module of Respiratory Disease a new feature is included, a colour mark-up interactive tool, enabling the student to point out the questioned anatomy and pathology.

**Summary of work:** The e-Learning program is developed in Adobe Captivate and demonstrated by means of Questionmark Perception (QMP). A pulmonary case is presented and several radiological imaging modalities are shown and students are asked to recognize pathological disorders. In Adobe Photoshop, colour mark-ups are made, shown as transparent overlays, that stress both anatomical and pathological structures. A Likert scale questionnaire is used to acquire student opinion on the use of this tool.

**Summary of results:** The questionnaire was completed by 199 (68%) of the 290 students. Colour mark-ups were found useful by 79% (n=159) agree that its use gained more insight into radiology. The use of these mark-ups did not hamper the appropriateness of the individual or packaged videos average 20 or about 7,000 a year.

**Conclusion:** Adding colour mark-ups in e-based radiology is considered a valuable supplement to education.

**6X/P4**

Games are an effective form of e-assessment

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**Background:** Games are a good form of informal assessment that can easily be incorporated into e-learning.

**Summary of work:** While teaching a class of students, we ran a short experiment on the value of games in assessment. We gave a short presentation on a non-related subject, so that the basic knowledge in the class was minimal, and split the class into two even sets (A and B). Group A was given a game and group B a multi-choice questionnaire (same questions) to assess the new knowledge. The answers were marked and scores compared, a buzz group undertaken and noted the number that didn’t want to come out of their assessment group.

**Summary of results:** Although the scores from the two assessments were comparable, the games were enjoyed more and the students wanted to continue them.

**Conclusions:** Games are a good form of informal assessment that can easily be incorporated into e-learning.

**6X/P5**

Uro-Island I – game-based e-learning in urology

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**Background:** The background to the project is that we have been designing and implementing game-based e-learning programs to help teach medical students in a fun and interactive way. This year, we have been working on designing a new game-based e-learning program (Uro-Island I) for clinical Urology, which adopts an adventure game format and is realized via the free game development kit Wintermute Engine.

**Summary of work:** We focus on the practical use of the game and present our results. We provide a short overview of the project and describe the gaming platform used. We present the current status of the project and discuss the potential of game-based e-learning as a teaching tool.

**Summary of results:** The results indicate that students enjoy playing Uro-Island I, are motivated and think that they learn the appropriate contents.
6X/P6

Internet use and gaming among students of various faculties of the Medical University of Lodz
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Background: There is much controversy over the influence of Internet use and gaming (IU&G) on students’ lives. The aims of this study are to establish the structure and time of the IU&G of medical students, to assess if these students can distinguish between reliable and unreliable Internet scientific resources, and to find out how the students perceive their IU&G addiction.

Summary of work: 205 IU&G questionnaires and the resources of 200 pathology course students’ projects and journal reviews were analyzed.

Summary of results/Conclusions: The differences in the IU&G habits result mostly from different psychological profiles, but are also affected by other factors including the distance to their home country and the requirements of various courses. While the majority of students don’t find gaming as dangerously time consuming, many of them state that Internet addiction negatively affects their education. There is a significant improvement of the students’ skills and abilities to use professional Internet scientific services during the pathology course.

Take-home message: Knowing the influence of the IU&G on learning outcomes it may be possible to reframe those activities finding their new educational applications and turning the present enemy into a real ally.

6X/P7

A case study summarising different approaches for using clinical videos online
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Background: With the emergence of YouTube and other popular video sharing sites, it is now easy for students to find clinical videos online. However, there is growing debate about how these types of videos can be embedded effectively within curricula.

Summary of work: St Georges’ AMEE award-winning Clinical Skills Online website offered an opportunity to explore and evaluate the feedback from students and staff about how they used such videos and in what context. A detailed study was conducted to evaluate how these videos were used in over 900 different organisations.

Conclusions: Due to the simple ‘rustic’ nature of these videos, they were used in a variety of different educational contexts – used in-session to supplement teaching, for familiarisation before sessions, and as review/revision tools to prepare for OSCEs. However, different styles of narration within the videos (i.e. whether it was ‘instructional’ or a simple ‘show-by-example’) determined the most effective context in which those videos could be used.

Take-home message: There is now an abundance of good quality-assured clinical videos online. However, much care should be taken in deciding what type of video to use, in which context to use it, and how to best to use it.

6X/P8

My Teaching/My Lectures – a tool for curriculum planners, teaching staff and medical students
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Background: Minerva is the University of Sheffield Medical School’s Managed Learning Environment. It is a web-based, database-driven, central resource for students and staff fulfilling many functions for the delivery and management of the undergraduate medical curriculum, including course handbooks, learning materials/resources, clinical placement listings, assignments, formative assessments, e-Portfolios, assessment results, news items and timetabling systems: My Teaching/My Lectures.

Summary of work: Introduced in September 2007, My Teaching/My Lectures is an amalgamation of student timetables, lecture outlines, additional teaching resources, such as lecture PowerPoint presentations, links to the core curriculum problems and outcomes, and archived teaching material. There are a number of different end user perspectives; namely students, teaching staff, administrators and curriculum planners. Teaching staff can access a ‘Lecture Diary’ which shows all the lectures they are delivering as in-session to supplement teaching, for familiarisation before sessions, and as review/revision tools to prepare for OSCEs. However, different styles of narration within the videos (i.e. whether it was ‘instructional’ or a simple ‘show-by-example’) determined the most effective context in which those videos could be used.

Conclusions/Take-home messages: My Teaching/My Lectures provides a dynamic, standardised, centralised and transparent timetabling system. Curriculum planners can easily find out what is being taught, by whom and where. Students have a timetable that links to the resources they need for each teaching session and lecturers have one access point to upload teaching resources.

6X/P9

On-line video annotation system for medical education
J Fang Jiang* (The Chinese University of Hong Kong, The Faculty of Medicine, Room 9B Block B, Shatin N.T, Hong Kong)

Background: There have been many technical advances in video compression technology, high performance network, and the use of rich multimedia and Internet applications to enrich the active-learning environment in tertiary education. An active-learning environment is collaborative and student-centric in nature wherein students can easily work with their peers and faculty members. Our Faculty, through its own acquisition program or contribution of our faculty members, has gathered a rich library of medical videos that have great educational value. We believe that these videos can be heavily used, if they are to be made available on the Web, serving not only as references, but also as parts of the teaching materials in the curriculum. Therefore, we have developed a Web based Video Annotation System.

Summary of work: This application can create a scaleable medical video repository database to store, maintain, and organize the valuable video resources; provide a mechanism where faculty members can easily utilize and incorporate these videos into their classes/students’ learning; protect access - allowing only authorized students and faculty members to access the learning materials and videos; create an annotation on video, without actually modifying the document itself whereby professors and students can easily create, share and discuss their annotations made to the video resources.
6X/P10
Using “potcasting” to teach veterinary anatomy
Brian Cox*, Raymond Macharia*, Nick Short*, Kim Whittlestone* (Royal Veterinary College, Royal College Street, London NW1 0TU, United Kingdom)

**Background:** The RVC has a large collection of underutilized but well preserved anatomical specimens in glass pots. Many are prize-winning dissections, but lack of descriptions limits their use by students. In an effort to bring these old pots to life, the College has been exploring ways to make the specimens more accessible and educational to students.

**Summary of work:** Dissected specimens showing structures of relevance to the curriculum were selected by the anatomists. Each pot was videoed, and a voice over describing key features was added with key-view annotations to create an illustrated digital guide. These “potcasts” were accessed via an iPod or computer.

**Summary of results:** Over 50 potcasts have been created and are now widely used by students. Focus group surveys report that the potcasts have reinforced students’ learning and provide a valuable new resource, connecting them with teachers.

**Conclusions:** They regard the potcasts as high quality 3D guides. Students with iPods can revise on the move. Technology was used to reinvent old museum specimens to create a more engaging 21st century resource.

**Take-home messages:** Whilst this uses the latest mobile devices to deliver the content, it still integrates and enhances the traditional veterinary anatomy curriculum.

6X/P11
Developing a learning community using a Wiki
Win May, Beverly Wood* (Keck School Of Medicine of the University of Southern California, 1975 Zonal Avenue, Los Angeles CA 90089, United States)

**Background:** A Wiki is an excellent tool to develop a learning community in distance education for the millennials. It is useful in teaching as it provides an organic gathering place for learners and teachers to post work; provide supporting materials including readings, visual performances, and documents; create and edit content; and coordinate activities.

**Summary of work:** A Wiki was developed in a distance learning Master’s program with residency program directors as the learners. The aim was to promote clarity of learner-content, learner-learner, and learner-instructor interactions. Use of a road map facilitated learner access to the course content delivered by multiple media. The flexibility of the format encouraged participation, and as it is an organic entity, it was adapted, used flexibly and served as a “home” to those working together to achieve a shared goal. The Wiki allowed the addition of content with multiple different media delivery, such as pod casts, videos, etc. The shared work area allowed for collaborative learning and critique.

**Conclusions:** Learners who used the Wiki commented favorably on the two-way communication and collaboration that took place.

**Take-home message:** The Wiki is an effective method of fostering student collaboration and communication, as well as delivering course content efficiently.

6X/P12
Pathology curriculum - can district hospitals deliver?
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**Background:** Phase 3 medical students from Kings College, London, are attached to district general hospitals (DGHs) in East Kent. The third term incorporates Pathology (including microbiology and clinical biochemistry), Pharmacology and therapeutics. Traditionally, this module has always been delivered at the centre (Medical School). We organised and delivered this locally to our students.

**Summary of work:** Whilst planning the programme, it was very important to ensure that the students at the DGHs would not in any way be disadvantaged and had access to all material used at the centre. So, we recorded the lectures, given at the centre, and downloaded them on to DVDs. These formed a digital library, which enhanced the series of lectures and tutorials given by the local faculty and ensured that students had “the best of both worlds”. Feedback from the students was very good.

**Conclusions:** This shows that delivery of this part of the curriculum outside the centre is possible but requires meticulous planning, enthusiastic teachers and innovative ways.

**Take-home messages:** Many district general hospitals may feel ill-equipped to deliver non-clinical, tutorials or lectures. However, using innovative ideas and technology, it is possible to ensure that this can be done and to a high quality.

6X/P13
Podcast Producer: adopting an automated podcasting program in undergraduate medical education
Janet Tworek*, Lauren Zanussi* (University of Calgary, G701 Health Sciences Centre, 3330 Hospital Dr NW, Calgary T2N4N1, Canada)

**Background:** In May 2006, the University of Calgary became one of four universities to adopt Podcast Producer, an automated system from Apple used to render audio, video, and screen capture as podcasts in multiple formats to users. Students and faculty requested the system; the long-term plan includes offering new teaching and learning options in medical education.

**Summary of work/Results:** Research results show the main student use for podcasts (70%) is for review and exam preparation, with many students (52%) also using podcasts to review parts of lectures that were missed or difficult to understand. Podcasting has stimulated early faculty adopters to reconsider course design, using podcasts for didactic teaching and “lecture” time for more interactive formats.

**Conclusions:** Secrets of the program’s success include: engaging early faculty adopters; support from administration; and, key roles of technical team across installation, support, and promotion of Podcast Producer. Lessons learned around selecting and installing Podcast Producer will be shared. Expansion to other faculties and programs is a sign of the program’s success.

**Take-home messages:** The success of the program can be attributed to four groups: students, faculty, administration and technical personnel.
**6X/P14**

**Podcasted lectures – is there a pedagogical benefit?**

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**Background:** Podcasting has recently emerged as a new information technology tool in undergraduate medical education. At the Medical School of the University of Bern in the first clinical year 60% of the lectures were recorded as podcasts (powerpoint with comment of the lecturers) by the software camtasia and distributed over the Internet password-protected to the students. The pedagogical benefit for this new technology is being discussed controversially by our lecturers.

**Summary of work:** A survey of 150 undergraduate medical students in a PBL curriculum and a survey of 30 lecturers was undertaken. The study should answer the following questions. How do students use these podcasts? Do they watch the entire podcast or only parts of them? What is the motivation for using it? Do students prefer watching the podcast on devices with small screen such as the iPod or on their PC with large screen? Do students use the RSS-Feed or iTunes or do they download the podcast directly from the podcast-server? Is there a correlation between the study performance of the students and the use of podcasts? We asked the lecturers about the potential advantages and the drawbacks of this new technology.

**Conclusions:** The results will be presented at the AMEE meeting.

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**6X/P15**

**Implementing a VLE in APLS: a preliminary evaluation**

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**Background:** Against a background of pressure on the availability of faculty and candidates to attend traditional three-day training programmes in Advanced Paediatric Life Support (APLS), the Advanced Life Support Group (ALSG) commissioned the development of a VLE to replace lectures, workshops and stages 1 and 2 of skills teaching via video clips, and to reduce the course to a two-day, practically based experience.

**Summary of work:** The knowledge and parts of the skills components of the three-day course was extracted from the programme and edited for inclusion in a VLE that represented approximately 10 hours of study. The VLE included an end of component MCQ, the successful completion of which would lead to attendance on the face to face course. The course was launched in December 2007 and the first four pilot face to face courses took place in January and February, 2008.

**Conclusions:** Provisional evaluation from both faculty and candidates has been very positive: more candidates have passed the course; they come better prepared; and have a clear understanding of the material. The course itself is more dynamic, being almost entirely practical and energy levels are high.

**Take-home message:** This has been a worthwhile development which may be repeated for other life support courses.

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**6X/P16**

**E-learning experience of medical students: a questionnaire survey for innovative Pathology Moodle**

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**Background:** Online courses (Moodle) have been introduced recently to support face-to-face teaching at Al-Quds (Jerusalem) Medical School. Here, we evaluate our e-Learning facilities and describe how Moodle is used in Pathology for online exams, forum, lectures, and e-resources.

**Summary of work:** A questionnaire, focusing on the knowledge and attitudes of students towards e-learning, was distributed to third year medical students between 2007-2008 (n=82, 56% female) at the end of their Pathology course.

**Summary of results:** Results demonstrated that availability of computers and Internet was high (93% and 83%, respectively). Additionally, 57% of respondents were familiar with e-Learning resources. However, 81% stated that the Pathology course was their first experience with Moodle. 89% agreed that the use of Moodle was useful for updating them regularly with course news. 87% indicated that e-learning should be extended for all medical courses. Remarkably, 71% were enthusiastic about contributing personally to future Moodle resources. Despite this, 40% felt uncomfortable taking examinations online.

**Conclusions:** Pathology Moodle was a major success, with the reservation of anxiety associated with the introduction of online course testing. The great majority of students showed very positive feelings toward e-Learning.

**Take-home messages:** A continuing shift towards e-Learning is becoming evident in medical education. Moodle should be considered for universal application as confirmed here by the enthusiasm of our Palestinian medical students.

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**6X/P17**

**Developing a virtual learning environment for the MRCPG Part One examination**

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**Background:** Revision for the Obstetrics and Gynaecology Part One membership examination can be a time-consuming and lonely process. With the knowledge that e-learning had worked effectively before in other areas of education, we felt that it could be the perfect environment to facilitate revision for a group of ST trainees in the North West.

**Summary of work:** Moodle (www.moodle.org) was used as the course management system and students were recruited via email. Two tutors and an administrator were available to facilitate registration and revision online. The revision was primarily intended to run as a similar format to problem-based learning using different revision themes derived from the Part One syllabus and peer learning encouraged. Questionnaires were emailed prior to starting, during and after the revision period had commenced.

**Conclusions:** Once all the data have been collected after the exam in March 2008, we hope to report on how the environment was developed and how effective students found using this environment to supplement their revision. We hope to report on how different factors had an effect upon the success of the course – measured by the amount of time they devoted to the course, their interaction online, and final success with the exam.
6Y Professionalism

6Y/P1 Content development for online continuous medical education programs using problem based learning approach
Emami Amirkhossein*, Mojtabahedzadeh Rita, Mohammadi Aeen (Educational Development Center, Tehran University of Medical Sciences, Tohid Sq, Nosrat St, Educational, Tehran 1419733171, Iran)

Background: Problem Based Learning (PBL) is an effective instructional strategy that is frequently used in medical education. Online PBL programs have the advantage of defining different learning paths for learners to individualize learning. In this study we used PBL approach to develop online Continuous Medical Education (CME) programs

Summary of work: We designed a content development scenario template based on PBL approach. A case and a related question were introduced. Learners went through different question and answer learning paths based on their responses in each step and received proper feedback for their mistakes and more necessary data. We held workshops for faculty members to train the approach for content development. We also trained e-learning advisors who were general practitioners to help faculty members for content development.

Summary of results: 25 online interactive and individualized CME programs were developed and delivered on the University's CME site as the first experience in the country.

Conclusion: Developing interactive individualized PBL content using printed media has some limitations. Online PBL content delivery has the advantage of the possibility of defining individualized learning paths which can make learning more effective.

Take-home messages: Web environment compared to printed material could be a more proper media for delivering PBL content.

6Y/P2 Differences between medical students’ and professors’ perception of medical students’ professionalism level
Yera Hur, Sun Kim* (The Catholic University of Korea, 505 Banpodong, Seocho-gu, Department of Medical Education, College of Medicine, Seoul 137-701, Republic of South Korea)

Background: Despite the high interest in medical professionalism, there is a lack of an in-depth study on the level of medical students’ professionalism. This research focused on the perception gap of medical students’ professionalism level between Korean medical students and professors.

Summary of work: 229 year 4 medical students and 52 professors who were randomly sampled from the 41 medical school population, were asked to answer a survey on the medical students’ professionalism level. Using the result of Hur’s (2006) delphi study which identified 31 core professionalism elements required for the Korean medical students, students self assessed their professionalism level and the professors assessed the professionalism level of medical students graduating the school.

Conclusions: Of the 31 core elements, there were perception gaps in 27 elements. It is interesting to see that the students’ perception of their professionalism were all lower than their teachers.

Take-home messages: Medical professors need to encourage their students in their professionalism. What the teachers think they have taught about professionalism may not be fully assimilated by the students. Further research on how the students learn professionalism needs to be done.

6Y/P3 Focus! Tools and theory for medical teachers who want to get to grips with medical professionalism
Menno de Bree*, Marian Verkerk (University of Groningen, Po Box 196, Groningen 9700 AD, Netherlands)

Background: We designed a workshop programme for medical educators who endorse the importance of teaching professionalism, but sometimes struggle with the question how to do this in practice. Our poster-presentation offers you theoretical backgrounds, practical tools and (hopefully) some inspiration, which may help you to (re)design your training-programme.

Summary of work: Starting point is the idea that, particularly when teaching professionalism, you should have a clear theoretical understanding in order to be successful. Without this focus, teaching professionalism just won’t work. Second: medical professionalism is often identified with professional behaviour.
However, we argue that professionalism is best understood as a normative, second order competence, and that ‘accountability’ plays a central role.

**Summary of results:** Our teach-the-teacher experience showed us that this concept of Reflective Professionalism makes professionalism work. It offers a highly productive framework when discussing questions like ‘what is professionalism all about?’ ‘How can I teach professionalism?’ and ‘How can I assess this competency?’ It also forms a fruitful theoretical basis for the development of educational tools.

**Conclusion/Take-home messages:** Teaching and assessing professionalism really makes sense when you: pass by the ‘medical professionalism = professional behaviour’- mantra; start to see professionalism as a normative second-order competence; focus on accountability!


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**6Y/P4**

**Developing professionalism: a multidisciplinary perspective**

O De Condappa*, H M O’Sullivan, A Senior, M Murphy (University of Liverpool, School of Medical Education, Cedar House, Ashton Street, Liverpool L69 3GE, United Kingdom)

**Background:** A key objective of higher education institutions is the development of professionalism in undergraduate students, with similar approaches employed across the Faculties of Medicine, Veterinary Science and Engineering at the University of Liverpool.

**Summary of work:** This project audits the professionalism expectations of medical, veterinary and engineering students upon graduation by the profession's regulatory bodies and the university. Professionalism objectives were identified from university materials, subject benchmark statements, course accreditation standards and competencies set by regulatory bodies. Upon completing the audit, a comprehensive reference document was produced. This featured structured professionalism dimensions further specified into distinct competencies.

**Conclusions:** Students will be able to use this document to monitor, assess and reflect upon their own professional development. Auditing professions with differing professionalism expectations and issues has allowed a more comprehensive examination of the development of professionalism. Collaboration between these faculties has allowed these disciplines to learn from and assist one another. Areas of success and areas that require further attention have been identified within each curriculum, with findings of good practice disseminated across the university and wider academia. A core structure for documenting professionalism expectations has also been produced, which can be adapted to other disciplines, benefiting the wider student community and influencing future professionals.

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**6Y/P5**

**Medical professionalism: changing attitudes**

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**Background:** We conducted a survey comparing the attitude of medical students and postgraduate trainee doctors towards medical professionalism.

**Summary of work:** Paper survey forms given to 133 third year students of Southampton Medical School produced a response rate of 77%. Survey forms were emailed to 52 trainee psychiatrists in Hampshire. 73% responded.

Summary of results: Key differences were that 41% medical students believed medical practice required altruism as opposed to 65% trainees. 63% medical students felt that the standards of clinical care should be defined by the profession in comparison to 84% trainees. 41% students and 60.5% doctors perceived medicine as art.

**Conclusions:** This survey shows that with clinical experience the belief in the role of altruistic values in medical practice increases. The multidisciplinary nature of current healthcare delivery may have influenced medical students to feel ambivalent about standards of clinical care being defined by the profession alone. The finding that doctors perceive medicine both as an art and science unlike medical students who perceive it predominantly as science is similar to previous studies.

**Take-home messages:** This survey reflects perceptions of medical students in a single medical school in UK. Comparisons were only made between medical students and psychiatry trainees, nevertheless these findings raise interesting areas for further reflection and enquiry.

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**6Y/P6**

**Exploring the professionalism continuum in medical students**

Devina Raval*, Sandra Nicholson (Barts and the London, School of Medicine and Dentistry, Queen Mary, University of London, Community Based Medical Education, Old Medical College, Turner Street, London E1 2AD, United Kingdom)

**Background:** Extensive research has been done on how professionalism is defined by medical professionals but less so from the students’ perspective. We wished to explore maturing students’ tacit understanding of their developing professionalism and make explicit the effect of the curriculum on this process.

**Summary of work:** Using qualitative methodology, the perceptions of medical students at one London-based medical school were explored. The recent General Medical Council guidance for professional behaviours expected from UK medical students were used as triggers. The influence of both the formal and informal curriculum on the development of these beliefs was explored. Thematic analysis of the focus groups helped devise a subsequent questionnaire, distributed to students enrolled in years 1-5, asking students to rate their level of agreement with the identified themes.

**Conclusions:** Areas such as probity and personal health are not prioritised by students in defining professionalism, whereas behaviours associated with ethical practice and demonstrating respect for patients were considered essential. The role of explicit teaching on such issues and increasing clinical experience was highlighted.

**Take-home messages:** The effect of the curriculum on the views of students concerning professionalism needs to be heeded by medical educators.
6Y/P7
Social networking technology in developing professionalism
Dan Robinson*, Helen O’Sullivan (University of Liverpool, CETL, School of Medical Education, Faculty of Medicine, Cedar House, Ashton Street, Liverpool L69 3GE, United Kingdom)

**Background:** An investigation into the mechanisms by which students use web 2.0 technologies to communicate about academic and professional matters in facilitating the development of professionalism.

**Summary of work:** 50 students are taking part in a trial which delivers learning opportunities to learners via a social networking website called Ning. This site has been developed with an educational focus allowing for themed dialogue regarding career management, personal and professional development and developing professionalism.

**Summary of results:** An initial analysis of the site usage statistics suggests that many learners engage with the site on a daily basis. Over a period of 8 weeks the site was visited over 750 times with 5,000 pages being viewed. After a full analysis of usage, focus groups will be used to gain an understanding of students’ attitudes towards using such technology in education and how it can be developed.

**Conclusions/Take-home messages:** The pilot study demonstrated how the social networking technology can be developed to provide a learning environment that is flexible, stimulating and intuitive. This is crucial when considering the needs of the next generation of learners who are now entering medical education.

6Y/P8
Yellow Card – professional attitudes and behaviour
Predrag Bjelloglic*, Veronica O’Carroll, Anita Laidlaw, Ruth Cruickshank (University of St Andrews, Bute Medical School, St Andrews KY16 9TS, United Kingdom)

**Background:** To encourage students to adopt GMC (General Medical Council) guidance “Medical Students: Professional behaviour and fitness to practise” we developed a yellow card system. The yellow card contains 11 points related to professional attitudes and behaviour and is issued by facilitators to the students during clinical skills classes in any case of unprofessional or inappropriate attitude or behaviour.

**Summary of work:** This pilot scheme was introduced, for all three years of medical students (n=402). We analysed the number of cards issued per week in each semester as well as the reasons cards were issued. Students who received 3 or more cards per semester were called for interview to discuss their professional attitudes and behaviour.

**Summary of results:** Results showed that the pattern of card issued was not uniform throughout the semester ($\chi^2=54.5, P=0.001$). The most common reasons for receiving the card were: inadequate preparation for class and poor punctuality ($\chi^2=33.5, P=0.001$).

**Conclusions:** This pilot study gives insight into potential methods for improving professional attitudes and behaviour. This project also highlighted common areas of difficulty for the students who had the opportunity to reflect upon why they had been issued a yellow card.

**Take-home messages:**
- Medical students: professional behaviour and fitness to practise; General Medical Council and Medical Schools Council; 2007

6Y/P9
Professionalism: assessment of a fundamental concept in medical care
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**Background:** An instrument to assess professional behaviour of GP-trainees was developed: the EPRO-GP instrument. It consists of 4 separate domains: professional behaviour towards 1) patients; 2) other professionals; 3) society; 4) oneself. Aim of this study was to examine the psychometric properties of the EPRO-GP and to validate it.

**Summary of work:** Factor analyses was performed. The EPRO-GP was filled in by both GP-trainees and -trainers. We compared the factor structure of these two groups. An exploratory principal components analysis with Varimax rotation was conducted per domain. To establish reliability, Cronbach’s $\alpha$ was used.

**Summary of results:** The factor structure of both groups was very similar. Two factors per domain were found: in domain 1, Respecting patient’s interests and Professional distance; domain 2, Collaboration skills and Management skills; domain 3, Responsibility and Quality management; domain 4, Reflection and learning and Dealing with emotions. Reliability ranged from 0.78 to 0.95.

**Conclusion:** This study shows that the EPRO-GP is a reliable and valid tool. The simpler structure makes it conceptually more clear.

**Take-home messages:** In comparing self-assessments and external evaluations no differences in factor structure was found. This indicates a solid foundation for effective teaching and assessing professional behaviour.

6Y/P10
Professional attitude of the modern Dutch midwife: teaching and assessing
Joke Steevert* (Midwifery Academy Amsterdam, Louwersweg 6, Amsterdam 1066 EC, Netherlands)

**Background:** The introduction of a new curriculum was a good excuse to give more explicit attention to this specific aspect of being a professional midwife during all 4 years of the midwifery education.

**Summary of work:** To make it possible to critically observe and appraise the professional attitude of students during the learning process, the Academy has designed an assessment instrument. Students learn in groups together and from each other. The success of a tutor group depends on cooperation amongst students. If students fall behind or fail to meet the standards, fellow students give feedback on (the lack of) professional attitude, much like colleagues would do in the future practice. In this way students can form an independent tutor group without interference of tutors, thus stimulating an active learning attitude. At placements in both primary and secondary healthcare situations a similar instrument is successfully used. Students formulate personal learning objectives, and create learning situations for themselves to further practice and experience personal growth. The students work on this personal learning process in their portfolio and reflect on their personal development as a student and as a midwife to be.

**Conclusions:** Students find it hard to put down their personal reflections but admit in the end that it is only through reflection that they achieve the professional attitude that fits the midwife of the 21st century.
6Y/P11
What medical students should learn about law in the curriculum
Moritz Gebauer*, Jörg Pelz (Europa Universität Viadrina Frankfurt (Oder), Logenstr. 2, Appartment 808, Frankfurt (Oder) 15230, Germany)

To develop professionalism medical students have to acquire a set of qualities which substantiate the trust the public has in doctors. These qualities include e.g. moral and ethical aspects fostered by the profession and knowledge of legal facets related to the profession. The latter have two components: One that relates to the legal system of the state in which the physician is working. These are special for each country and comprise liability, malpractice etc. The other is supranational and related with the human rights guaranteed by public international law. These general legal issues can and should be a small part of every curriculum in all countries which are members of the UN. Physicians may become involved in the treatment of sufferers from violation of human rights and should know how to deal with this and where to apply. Additionally the main principles of medical ethics (beneficence, non-maleficence, autonomy, dignity, honesty and justice) find support and can be derived from the relevant sources of international law. A minimal set (‘Robinson Crusoe set’) of legal sources which should be known by every physician and the connections with medical ethical issues will be presented. They have been successfully tested with beginners of medical studies.

6Y/P12
'Oh, I have to be a grown-up': learning and teaching professionalism within a Veterinary degree – the student voice
Jackie Goode, Liz Mossop* (School of Veterinary Medicine and Science/School of Education, University of Nottingham, College Road, Sutton Bonington LE12 5RD, United Kingdom)

Background: The recent opening of the first new Vet School in the UK for 50 years at the University of Nottingham offered staff the enviable opportunity to design a whole curriculum aimed at producing a new kind of practitioner. One challenge was how to teach 'professionalism'. An independent developmental evaluation of the first year curriculum was undertaken, with a particular focus on the teaching of personal and professional skills (PPS).

Summary of work: Observations of PPS sessions and three rounds of in-depth interviews with staff and students were undertaken. Interviews were tape-recorded, transcribed and analysed thematically. Emerging issues were fed back to staff. This paper focuses on the student voice.

Summary of results: Results show initial misgivings about the module, the portfolio that formed part of it, and the reflective thinking/writing required, gave way as the year progressed, to a better understanding of what was expected and to evidence of the early development of concepts of professionalism.

Conclusions: The teaching of professional skills not simply as a ‘stand alone’ module but integrated across the curriculum meant that it passed students’ acid test of ‘relevance’. Reflection was also actively demonstrated within the interviews themselves, suggesting that a dialogic element is vital to ‘surfacing’ the learning promoted by this approach.

6Y/P13
The professional development of the professional: challenge or utopia?
Lucienne van Laar* (Hillenraadt 44, AJ 1083, Netherlands)

Background: The introduction of a competence-based curriculum placed new demands on the professional development, skills and attitude of midwifery-teachers.

Summary of work: The research consisted of: A literature review based on three different perspectives: (1) the professional teacher; (2) organisational conditions; (3) the management staff. Field research in two higher vocational academies in the Netherlands.

Summary of results: The main results of the literature and field research indicate that the following factors are of most importance for the professional development of faculty members: career anchors, prior success experiences, learning styles, professional attitude, phase of career development, organisational culture and structure and the style of managerial leadership. Moreover there appear to be different types of professionals, the Routine-professionals (R-profs) who work mainly with routine procedures and the Improvising-professionals (I-profs) who drive on innovation and improvisation.

Conclusions: The presence or absence of a professional attitude and an attitude of ‘life long learning’ is the most important factor for the professional development of professionals in both higher vocational institutes.

Question for discussion: How can you stimulate and facilitate professional development when an attitude of ‘life long learning’ is (partly) missing?

6Y/P14
The sacking of a House Officer: what are the views of new House Officers?
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Background: Anonymous self-administered questionnaire-survey during new house officers (HOs) orientation in Feb, Apr and Aug 07 was done to determine their views on professionalism following dismissal in January 2007 of a HO who was caught videotaping nurses in the restroom. HOs ranked statements using a Likert scale (1=strongly disagree to 5=strongly agree) on teaching of professionalism, role model-clinician, dismissal and Singapore Medical Council (SMC) registration of the sacked HO.

Summary of work: 28/29 (96.6%) foreign graduates (FG) and 84/95 (88%) National University of Singapore graduates (NUSgrad) responded: 63 male, mean age 23.3 years. All FG compared to 63.1% NUSgrad agreed that professionalism was well taught in medical school (p<0.0001). Majority (82.1%) of FG compared to 67.9% NUSgrad agreed they had adequate role model-clinicians exemplifying professionalism (p<0.0001). Majority (90.8%) agreed that the sacked HO’s behavior was not pardonable, a smaller proportion (83.9%) agreed with dismissal but only half (52.7%) agreed that SMC should not register the sacked HO.

Conclusions: Only 2/3 of NUSgrad felt that professionalism was well taught and they had adequate role models. Majority of HOs agreed with dismissal but only half felt the misdemeanor was serious enough for SMC not to register the sacked HO.

Take-home messages: NUS should review teaching of professionalism.
6Y/P15
Josef Charvát’s School of Medical Education
Hana Vrbová* (Third Clinical Dpt. of Internal Medicine, First Faculty of Medicine of Charles University, U Nemocnice 504 / 1, Prague CZ12808, Czech Republic)

**Background:** Teaching and learning medical ethics and professional attitudes is based on a person leading the way. Professor Josef Charvát (1887-1984) was such an inspiring personality and influenced a generation of Czech physicians who met him. He was very intensively engaged in medical education at Faculty of Medicine of Charles University in Prague from 1947 till the seventies and in an international team of WHO in the sixties.

**Summary of work:** We have analysed his literary inheritance of publication on medical education and clinical research.

**Summary of results:** We have identified the following Charvát’s principles: 1) Accepting moral responsibility by the student as a motivating factor for all physician’s activities. 2) Medical study must preserve its university character. Not only basic knowledge and skills of medical disciplines generally recognized in practice of contemporary medicine, but also trends in their new developments, introduction into clinical research and wide context are to be taught. 3) The principal means of education is teacher-student-patient interpersonal communication. 4) Structured examinations in clinical disciplines are to be anticipated. Further we present some programmes inspired by Charvát’s medical education principles focused on teaching social medicine, health care professional ethics and student attitudes.

6Y/P16
Gender and professionalism in the undergraduate medical curriculum: technical/rational meets artistry
Heather Payne, Iain Robbe*, Clare Kell, Maria Tsouroufli (School of Postgraduate Medical and Dental Education, 9th Floor, Neuadd Meirionnydd, University Hospital of Wales, Heath Park, Cardiff CF14 4YS, United Kingdom)

**Background:** UK Undergraduate Medical curricula aim for professionalism in ’Tomorrow’s Doctors’. Required skill outcomes include a spectrum from technical/rational to artistry, including interprofessional working. Current Medical School intake comprises 61% female, 26% ethnic minorities.

**Summary of work:** Textual analysis of Year 3 Medical Student handbooks in 1 UK Medical School by 3 multiprofessional mixed sex researchers, texts analysed independently and themes developed collectively.

**Summary of results:** Documentation assumed considered tacit knowledge and was physically configured as logical, linear, and structured around acquiring Learning Outcomes as technical/rational, physical skills. Language and style was typically masculine, categorised using Bem inventory (forceful, dominant, decisive, self-sufficient, independent, self-reliant). Development of professionalism competencies was largely tacit. Characteristically feminine artistry associated qualities (compassion, sensitivity, understanding, warmth, gentleness, tenderness) were not promoted. Keyword analysis showed high frequency of command and prohibitive words with little mention of equal opportunities or interprofessional working skills.

**Conclusions:** The undergraduate curriculum studied is characterised by a closed masculinic hegemonic model, promoting technical/rational skills over artistry or feminine qualities, unlikely to fit assumptions and characteristics of the intake, or promote required skills at graduation for ’Tomorrow’s Doctors’.

**Take-home messages:** Undergraduate course documentation analysis identifies significant subtextual issues requiring open exploration to promote anti-oppressive training and eventual development of gender and cultural competencies.

6Y/P17
Physician empathy: the institutional level
Paul Aguiar*, T Frada, A Salgueira, MJ Costa (Life and Health Sciences Research Institute (ICVS), School of Health Sciences, University of Minho, Campus de Gualtar, Braga 4710-057 Braga, Portugal)

**Background:** Empathy is crucial in physician-patient relations. Student learning of professionalism in the workplace is influenced by contextual circumstances. Institutional heterogeneities in empathy can be picked up by medical students.

**Summary of work:** A valid and reliable translation to Portuguese of the Jefferson Scale to measure Physician Empathy (JSPE-vP) was applied to physicians in different health providers in the public domain (urban and district Hospitals and rural health centers) (n=25), some of which participate in undergraduate medical education (n=10). The JSPE-vP scores (59% from 809 physicians) were analyzed statistically.

**Summary of results:** Statistically different scores were identified between specialty groups - patient oriented > technology oriented (p<0.05) - and institutional types primary care > hospital-based (p<0.01); hospitals with > hospitals without undergraduate teaching (p<0.01). Emphasis on empathy in the undergraduate curriculum was found to have a positive influence on physician’s empathy score.

**Conclusions:** Physician empathy varies between institutions. A positive association exists between an institution “global” empathy and participation in undergraduate medical training. More emphasis during undergraduate training may reflect positively on the individual empathy of graduates.

**Take-home messages:** Institutions expose students to different levels of empathy. Emphasis on the importance of empathy should be constant along the curriculum.

6Y/P18
Empathy in last year medical students: disclosing its influence in specialty choice
Renata Daud Galletti, Milton de Arruda Martins, Patricia Bellodi, Ana Maria Carr, Iolanda Calvo Tibério* (University of São Paulo School of Medicine, Av. Dr Arnaldo, 455, São Paulo 01246-903, Brazil)

**Background:** Empathy is related not only to the capacity to take the role of another person but also to compassion, one of the three doctor’s essential humanistic qualities.

**Summary of work:** In order to analyze Empathy self-perception of last-year medical students and to determine its role in the definition of the future specialty, 51 clerks of University of São Paulo School of Medicine were invited to complete the Emotional Empathy Tendency/EET (33 questions graded from -4 to +4; max +132pts) and to register their specialty choice. Students also applied an OSCE with physician-patient relationship/PPR and humanism contents. PPR was analyzed by 10 questions regarding expected behaviors and interpersonal skills (scores 0-10). Humanism involved helping and respecting patient’s rights and values (Likert scale 0-4).
**Summary of results:** 44 students completed EET questionnaire (answer-rate: 86.3%): 19 females and 25 males. Mean EET-score was 43.7±19.3. Females presented EET-scores significantly higher (49.3) than males (39.5). Also, Internal Medicine specialty was chosen by students whose EET-scores were significantly higher (47.6), compared to Surgery (37.4). Mean PPR and humanism scores were 8.3±1.9 and 3.4±0.7, respectively. No differences in PPR and humanism scores were observed regarding specialty choices or gender.

**Conclusions/Take-home messages:** Empathy permeates specialty choice and is also related to gender characteristics.

**6Y/P19**

**Does peer role-play affect veterinary students’ empathy with clients?**

**Carol Gray** (University of Liverpool, Leahurst Campus, Chester High Road, Neston CH64 7TE, United Kingdom)

**Background:** Studies have shown that medical students’ empathy with patients declines as they progress through the course. Studies involving veterinary undergraduates have concentrated on empathy with animals. There has been no previous measure of empathy with clients, nor any measure of change following a specific intervention. The aim of this study was to explore whether communication skills training via peer role-play would affect subsequent empathy scores in veterinary students.

**Summary of work:** Ninety second-year students were involved in the training sessions, with each student learning an allocated client role. Students were asked to complete a version of the Jefferson Scale of Physician Empathy, modified for veterinary medicine, before taking part. A 7-point Likert scale was used as the basis for responses. The survey was re-administered following completion of the peer role-play sessions.

**Summary of results:** Average total score for all questions pre-intervention was 5.53, and post-intervention was 5.45. There was no statistically significant difference in pre-and post-intervention scores, although individual questions showed greater variation.

**Conclusions:** The high mean score for the pre-training measure may reflect the early year chosen for this study. Further work is needed to investigate whether peer role-play could be an important factor in maintaining empathy with clients in later years of the veterinary course.

**Take-home messages:** Medical professional attitude scores of medical students reduce as they progress at medical school. Enthusiasm and gender affect attitudes.

**6Y/P20**

**Change in professional attitudes during medical education**

**A Hilal Bati** (Ege University Medical Faculty, Ege University Medical Faculty Department of Medical Education, Bornova Izmir 35100, Turkey)

**Background:** Attitude is a system of personality traits, norms, values, feelings, ideas, and opinions determining personal behaviour in certain situations. Medical Profession requires sacrifice. During medical education development efforts change in the health care system create conflict. This process affects medical students’ feelings about their profession.

**Summary of work:** To measure medical students’ attitude towards their profession, Medical Profession Attitude Scale (MPAS) including five-point modified Likert scale ranging from “Strongly agree” to “Strongly disagree” was developed. Having three sub-dimensions (willingness, helping, dedication to profession), MPAS was applied to first, third, fifth and final year students at Ege University Medical Faculty.

**Summary of results:** Mean age was 23.7 years, there were 45.5% females. Reliability estimates of total scores was 0.95 and those of sub-dimensions were 0.94, 0.85, 0.83, respectively. Senior students’ scores in willingness and helping sub-dimensions were less than juniors. Like enthusiastic students, female students held high scores in all sub-dimensions.

**Conclusions:** As students progress through medical school their attitude scores decline. Its reasons are unclear, but may be related to loss of idealism.

**Take-home messages:** Medical professional attitude scores of medical students reduce as they progress at medical school. Enthusiasm and gender affect attitudes.

**6Y/P21**

**Emotional Intelligence in medical students of Lampang Hospital**

**Ketsiri Lianwanich**, Kanthika Junsantor (Lampang Medical Education Center, Lampang Hospital, 280 Paholyothin Road, Mueng, Lampang 52000, Thailand)

**Background:** Emotional Intelligence (EI) is a part of medical professionalism. We assessed EI and factors that have influences on the development of EI in medical students at Lampang Hospital.

**Work done:** Seventy medical students in their clinical years were evaluated with Thai Emotional Intelligence Screening and EI correlating factor questionnaire. Data were analyzed using Spearman correlation.

**Summary of results:** Mean score of nine-dimensions of EI was within normal range. Extracurricular activities, self-study from the internet and standard textbooks, sharing problems with friends from different disciplines during adverse situations, number of siblings, economic status and good family relationship, were positively correlated with many aspects of EI.

**Conclusions:** There were many correlating factors influencing EI in medical students, especially educational environment and supporting system.

**Take-home messages:** Every medical student should be encouraged to engage in extracurricular activities and they should be placed in an environment that is conducive to self-study, in order to enhance their development of EI.
**Summary of work:** All nine trainers in the educational program and 12 general physicians (out of 58) were invited to individual interviews four months after participation in the CME program. Semi-structured open-ended interview guides were performed. Descriptive and latent content analysis was used to explore the text and to interpret meaning and intention.

**Summary of results:** There was a widespread agreement that the program improved the participants’ knowledge and skills to a higher extent than previously attended programs. Trainers emphasized the effect of outcome-based education on their educational planning, teaching and assessment methods, while the general physicians’ challenges were how to adapt their learning in the real work environment considering social and economical barriers. Self-described attitudes changed towards more rational prescribing.

**Conclusions:** Outcome-based CME seems attractive and additionally useful for general physicians in Iran.

**Take-home messages:** Outcome-based medical education can be an effective approach when creating CME programmes to improve general physicians’ performance.

6Z/P2
Using utilization review to improve doctors’ compliance to clinical practice guidelines
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**Background:** Previous hospital utilization review showed that there were more than 1,000 inappropriate investigations a year because doctors did not strictly follow clinical practice guidelines (CPG). The aim of this study was to evaluate the effects of utilization review process (URP) in relation to doctors’ compliance to CPG and cost of over investigation.

**Summary of work:** Orientation of URP was introduced to all new doctors. Check lists and audit forms concerning the compliance to CPG were also given. In case of over investigation regarding the CPG, oral or letter feedback were given personally. Focus group discussion was conducted among internists and residents to explore their attitudes towards the URP. The laboratory costs were compared between before and after implementing URP.

**Summary of results:** A total of 323 cases were reviewed. Residents were the majority group of doctors who did not follow CPG (62%). Investigation cost decreased from 55,877 to 10,450 THB. Residents and internists agreed that URP could save the cost but some insisted on prescribing investigations for learning purposes even though they were not in CPG.

**Conclusion:** Most doctors agree that CPG was useful and could decrease unnecessary investigation cost. URP may improve doctors’ compliance to CPG reflected by the decreased investigation cost.

6Z/P3
Paramedic practice changes after STEMI education
Maud Huiskamp*, Laurie Mazurik, Jim Summers (Sunnybrook Osler Centre for Prehospital Care, 10 Carlson Court Suite 640, Toronto, Ontario M9W 7K6, Canada)

**Background:** This poster is designed for medical educators involved in CE for EMS providers. Summary of work: Toronto EMS, Sunnybrook Osler Centre for Pre-hospital Care and the Toronto cardiology community combined to develop a process to shorten the door to balloon time for STEMI patients by having them go directly to a PCI lab, instead of through the emergency department. To achieve this, advanced care paramedics were trained in 12 lead acquisition, STEMI identification, protocols for emergency department bypass, and notification of local PCI labs. These tools were to enable paramedics to independently make the decision to go to PCI labs. At the conclusion of the training paramedics were asked to fill out an evaluation form that included a question: “Do you intend to change your practice after today’s CME? Yes/no. If yes give 2 examples.” The implementation of the protocols begins in late March 2008. We compare the paramedic’s perception of change to that measured through chart audits to determine: how many paramedics now do 12 Lead ECGs on patients with CP, number correctly taken to PCI, and the estimated time reduction of door to balloon time this training has made.

6Z/P4
Sufficiency and barriers of CME/CPD as experienced by Finnish doctors
Pirjo Kannisto*, Ulla Anttila, Hannu Halila, Arja Helin-Salmivaara, Mira Kajantie (Finnish Medical Association, PO Box 49, Helsinki FI-00501, Finland)

**Background:** CME/CPD is voluntary in Finland and there is no recertification. Over 80% of doctors work mainly in the public sector, and by law it is the employers’ responsibility to offer health professionals “sufficient” continuing education.

**Summary of work:** Since 2000 the Finnish Medical Association has reviewed the doctors’ CME/CPD activities as part of its annual questionnaire to all working doctors in Finland. In 2007 the doctors were also asked if, according to their own assessment, they were able to participate sufficiently in CME/CPD activities in the previous year. Furthermore, a question about the primary barriers to participation was included.

**Summary of results:** 89% of doctors participated in some CME/CPD activities (on average 7.6 days, specialists 8.2) in 2006. 66% felt they were able to participate sufficiently in CME/CPD. The percentage varied between employment sectors from 58 (primary health care centres) to 75 (teaching/research), and between various specialties from 56 (ophthalmology) to 76 (lung diseases). The primary barrier for sufficient CME/CPD was inability to free oneself from work. Other frequently mentioned barriers were family reasons and lack of time or other resources.

**Conclusions:** One third felt they had insufficient CME/CPD, but there were differences according to employment sectors and specialties.

6Z/P5
FMOQ – Self-Managed Continuing Professional Development Plan (SCPDP) – what can we reach through partnership?
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**Background:** The Collège des médecins du Québec (Professional Corporation) required all physicians to join a self-managed continuing professional development plan (SCPDP), as of July 1st 2007.
Summary of work: In addition to existing tools developed by other organizations, the FMOQ's CME department, with the collaboration of the CME departments of seven pharmaceutical companies, developed tools (SCPD, electronic SCPDP, workshop, guide) to help physicians plan their continuing professional development strategy based on a reflexive approach. Through a partnership between the FMOQ's provincial CME network and the CME departments of seven pharmaceutical companies, over 3,000 GPs (50% of working members) attended workshops relating to the SCPDP over a seven month period.

Conclusions: Despite the availability of other CME programs, the partnership between the FMOQ's CME provincial network and the CME departments of pharmaceutical companies allowed us to reach 3,000 GPs, far more than our 1,000 member target.

Take-home messages: Ethical partnership with pharmaceutical CME departments can favour development of CME planning tools. Ethical partnership with pharmaceutical CME departments is possible, and in our case favoured extensive distribution of CME planning tools.

6Z/P6
The impact of Continuous Professional Development for counsellors on VCT for HIV and AIDS uptake
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Background: While there is no precise qualification required for excellence in counselling, it is accepted that a good counsellor is an individual who is possessed of a wide range of updated knowledge and skills. FPD also acknowledge the fact that: Staying abreast with new developments in skills and knowledge in VCT for HIV/AIDS is critical to the success or failure in the management of people undergoing VCT for HIV/AIDS; Good counselling is largely acquired with experience over time. The greater the number of clients counselled the greater the skill of the counsellor; Counselling skills also encompass a wide range of cultural nuances, gender issues, educational levels and age ranges.

Summary of work: In resource scarce environments, counsellors cannot be taken from their working environment for constant training in continuing professional development. FPD, through an alumni network, manage to deliver monthly updates on specific topics to all alumni counsellors. Monthly updates include assessment questionnaires which need to be completed every month.

Conclusions: Through this intervention FPD counsellors managed to deliver a better quality service as evaluated by their clients and also increased the VCT uptake at each site.

6Z/P7
The rate of satisfaction of the medical practitioners in Continuing Medical Education programs of Tehran University of Medical Sciences
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Background: Continuing Medical Education is an issue recently receiving much attention throughout the world.

Summary of work: This study was survey research, cross-sectional, descriptive and analytic and the data were gathered by valid questionnaires which were dynamic (re-test) and self-completed. The sample included 103 physicians participating in CME programs offered by TUMS, from 2004 to 2005. The census method was used as the sampling method for this project. The findings were presented as a percentage. The T-test was used for comparison between variables.

Summary of results: The most significant results of vote taking are the satisfaction of anesthesia specialists and pediatric specialists with the ability of professors (28.3%), satisfaction of general physicians who agreed that educational programs met the needs of their job (40%), and satisfaction of gynecology and delivery specialists with the capabilities of this educational program (31.6%). The conclusion rate of satisfaction of medical practitioners in CME programs related with their professional needs is significant (p =0/0001).

Conclusion: A new method of educating to learn correct scientific information is needed as a matter of importance.

6Z/P8
Continuing professional development choices made by physiotherapists throughout their careers
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Background: Statutory regulation requires physiotherapists to engage in continuing professional development (CPD). The study set out to explore the reasons physiotherapists give for why they engage in certain CPD activities throughout their careers, and the barriers to achieving them.

Summary of work: A multi-method 2 phase exploratory design used a postal survey and follow up interviews. 140 completed questionnaires were returned: 120 female (86%) and 20 (14%) male respondents.

Summary of results: Respondents had worked as a physiotherapist between 1 month to 33 years. They worked in the following specialties: musculoskeletal (45%); neurological rehabilitation (14%); care of the elderly (11%); cardiorespiratory ( 8%), and other specialties (23%); for between 1 month to 30 years (mean of 7.8 years). 32 different CPD activities were identified. Principal Component Analysis of the responses to the Likert response format questions, revealed 3 components as motivating factors for engaging in CPD activities, and 4 components that can act as barriers. Internal consistency using Cronbach's Alpha was acceptable to good (.653 to .891). Interview transcripts are being analysed using Nvivo 7.

Take-home message: An increased understanding of the life long learning requirements of physiotherapists throughout their postqualifying careers, practising in different specialities and in different roles, should ensure that they are appropriately supported.

6Z/P9
Medical regulation: the interface with education
Malcolm Lewis*, Katie Laugharne (Cardiff University, School of Postgraduate Medical & Dental Education, 8th Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS, United Kingdom)
Background: The international landscape is still developing in relation to the regulation of healthcare professionals. The English Department of Health’s White Paper Trust Assurance and Safety (2007) outlines the way forward for healthcare professionals in the UK. This work argues for the integration of education into the key component parts of what might deliver an acceptable methodology for the proposed relicensing component of regulation.
6Z/P10
Changing CPD culture through a distributed partnership – work in progress
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Background: National CPD programs traditionally depend upon University infrastructure to trial new ideas and innovations. In this project the Royal College of Physicians and Surgeons of Canada has partnered with Atlantic Health Science Corporation (a regional health care service) to build CPD capacity by sharing resources and developing local champions.

Summary of results: The task at hand is to embed a national program into a regional context that uses CPD to address clinical issues of significance to local physicians. Distributed educational initiatives to improve professional practice are piloted outside the traditional university CPD infrastructure, allowing for flexibility and customized responsiveness to local practice. During the first phase, the partnership established a hospital wide CPD presence, developing champions and leveraging resources towards 2 pilot projects for communities of learners. A “grass roots” approach using local champions to deliver a centralized program is presented, together with a checklist for a distributed partnership in CPD.

Take-home messages: Distributed educational partnerships require patient nurturing of relationships and cultural understanding; A focus by national organizations on partnership building rather than physical infrastructure maximizes resource utilization.

6Z/P11
A structured assessment of physicians’ ability to apply quality improvement methods
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Background: Quality Improvement (QI) is a core competency required of all physicians in the U.S. Developing tools to assess physicians’ ability to effectively implement QI methods is essential for helping physicians improve processes of care.

Summary of work: Practice improvement modules (PIMs) are web-based tools that use chart abstraction, patient surveys, and a practice-system survey to help internal medicine physicians use performance data to develop a QI plan, followed by a guided, narrative self-report on the results of their plan. We developed a qualitative assessment method to determine the specific types of practice changes made and how well physicians implemented them. Three independent QI experts applied the methodology to assess improvement plans from 92 physicians who completed a preventive cardiology PIM.

Summary of results/Conclusion: Physicians implemented different types of practice-system changes, for example, 33% made information-management changes, 23% utilized patient education materials, and 18% changed how they managed care. However, most physicians provided weak evidence that changes were effectively implemented and that changes designed to impact a process of care would be sustained over time.

Take-home message: Few physicians use evidence-based approaches to improve quality of care in their practice. There are meaningful gaps in physician knowledge and skill about QI methods.

6Z/P12
Lifelong learning: the clinical settings
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Background: Lifelong learning (LL) is essential in medical professionalism. Heterogeneities in individual physician’s commitment to LL have been uncovered within a single Institution. LL heterogeneities in clinical settings can condition graduate outcomes.

Summary of work: The Portuguese version of JSPLL (JSPLL-vP) was applied to physicians from institutions that do or do not contribute to undergraduate medical education. Scores of physicians representative of a district provided data for comparative analysis of different specialties, stages in the medical career and working environments.

Summary of results: Statistical analysis of responses (n=507) showed different scores between specialties - Paediatrics, Cardiology and Internal Medicine > Radiology; Family Medicine and Gynaecology/Obstetrics. Grouping specialties uncovered additional heterogeneities: patient-oriented > technology-oriented (p<0.05); hospital based > primary care specialties (p<0.01). Hospitals with > hospitals without undergraduate education (p<0.01). Differences were also found among physicians in different stages of their career. Sensitization to LL during undergraduate medical education proved important to achieve higher JSPLL-vP scores (p>0.05).

Conclusions: Physicians’ LL varies between institutions, specialties and career stage. Emphasis during undergraduate curricula has a positive influence in the LL of medical graduates.

Take-home messages: The heterogeneity in motivation for LL is a hidden message that students will pick up on clinical practice.

6Z/P13
Assessment of contemporary medical literature - an oblique view
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Background: Medical literature is central in assessing and communicating medical advances. We performed a TIC* (tongue in cheek) assessment of appropriateness.

Summary of work: An informal survey among colleagues defined goals of medical literature. Responses were reviewed, and goals accepted by all authors were included. We conducted an international, multi-center, double-blind, double-arm study. Technical limitations precluded randomization.

Conclusions/Take-home messages: Robust governance systems with strong links to education are a major contributor to the assurances required for relicensing.
1: Random issues were selected from prestigious journals (IF >5.0) from both sides of the Atlantic. One study from each issue was assessed for general quality, reproducibility, scientific value, clinical relevance, and citations. 2: A search identified papers on a selected topic, which were subsequently assessed. To limit capture to manageable size, the topic was paraclinical. The New England Journal of Medicine (NEJM) and British Medical Journal (BMJ) were selected for western and eastern hemispheres, respectively.

Summary of results: Articles encountered presented: A: Resuscitation efficiency on popular TV series, B: Species of origin of orthopedic surgeons. Neckties were the paraclinical topic. A significant amount has been published on this topic, quite a bit of which is, quite ‘thought provoking’.

Conclusion/Take-home message: Contrary to preconceived perceptions, inherent implied and theoretical value, relevance and appropriateness of medical literature publications, require scrutiny, and careful, critical, independent evaluation.

6Z/P14
Self-directed learning Continuing Medical Education (CME) in Iran
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Background: Self-directed learning is one of the five officially recognized types of CME programs in Iran. With the advance of the hastening pace of technological life, attendance at CME programs may become more of a problem for the busy practitioner though they are required to present proof of completion of specific credit hours of medical education for licensure renewal. This pilot study investigates the existing situation as a first step in planning more effective self-directed courses.

Summary of work: This descriptive survey studied self-directed CME programs for general practitioners during October 2005-October 2006 at 5 major universities in Iran.

Summary of results/Conclusions: Only one university offered internet-based CME programs, though at the time of this survey they were not officially approved. Other such self-directed programs used books, CD-ROM and journals at a rate of 63.16%, 31.58%, and 5.26% respectively.

Take-home message: The challenge of maintaining professional competence in an environment characterized by rapid changes, increasing information overload, and more advanced public expectations, is forcing universities to consider the application of adult learning theory and focus on self-directed learning. The development of more interactive CD-ROMs and internet-based programs to encourage the use of self-directed CMEs, seems to be increasingly considered at academic institutions.

6Z/P15
Connecting health professionals’ knowledge, skills and attitudes towards the health and development of children aged 0 to 5 years: L’ABCdaire (Healthy ABCs)
Martin Labelle*, Daniel Paquette, Robert L Thivierge, Dominique Cousineau, Danièle Lemieux, Danielle Moore (Division of CPD, Faculty of Medicine, Université de Montréal, Pavillon Roger-Gaudry, local Y-201, C.P. 6128, succursale Centre-ville, Montréal (Québec) H3C 3J7, Canada)

Background: A successful CPD program was developed (2001) for the periodic health evaluation of children (0-5 years) in Canada. While it was well diffused among the physician community, it wasn’t diffused to other healthcare professionals. As a result, parents and children had different approaches and recommendations. A partnership was formed (2007-2008) to develop a project with the goal of adding an interdisciplinary approach, social paediatric content and reaching parents and community.

Summary of work: 1. Provide an evidence based program and tools to healthcare professionals and become a gold standard. 2. Train healthcare professionals on key risk factors for health and child development. 3. Support healthcare professionals in the knowledge translation to parents in order to facilitate the development of parental competencies.

Summary of results/Conclusions: Bringing together health professionals around evidence based data on health and child development will enhance prevention; Developing recommendations and resources for parents provided by healthcare professionals support the development of parental competencies; Using popular communication vehicles to disseminate information to parents will reinforce healthcare professionals’ messages.

Take-home messages: To bring the evidence to healthcare professionals and to facilitate the translation to parents will enhance parental competencies development and improve prevention.

6AA/P1
Cultivating 21st-century-surgeons in Taiwan
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Background: Taiwan surgical association has been training surgeons in Taiwan since 1967 and set up an organized training program and qualification since 1970. Following the new trend of surgical education and requested postgraduate training for general medicine after SARS era by the government, there is now a new structured, competency-based program developed to cultivate 21st-century surgeon in Taiwan.

Summary of work: Through graded clinical responsibility and operative experience, surgical skill training, and a sound qualified assessment, residents were expected to be trained as competent surgeons. Herein, we introduce how we implemented the program in our institution - the leading teaching hospital in Taiwan. A new Minimally Invasive Surgery Training Center (MISTC) was inaugurated at our hospital in January 2007. Many structured workshops with hands-on and animated operating experiences were provided to the surgical residents in this center.

Conclusion: We stressed the importance of a specialist for surgical education and a high quality surgical skill center for surgical training program for competency-based training.

Take-home message: 1. A new structured, competency-based program was implemented for cultivating 21st-century-surgeons in Taiwan. 2. A specialist for surgical education and a high quality surgical skill center in our institution also facilitated great progress of this program.
6AA/P2
Learning scientific writing at postgraduate level in southern Africa - valuable intellectual shock therapy
Barbara English*, Liz Wolvaardt (University of Pretoria, Lynwood Road, Pretoria 0082, South Africa)

Background: The SHSPH is a regional hub for postgraduate students in public health. Learning scientific writing skills at postgraduate level is a MUST for the School's students: first, they are English-second-language speakers; and, second, they have passed through first-degree courses where their poor writing skills were largely ignored for “pass” or "fail" purposes.

Summary of work: (1) Contact sessions and written assignments for practising and improving skills; and (2) Analysis of questionnaires on students' preparedness and their perceived preparedness for scientific writing.

Summary of results: Weaknesses in writing skills cover the inability to construct meaning accurately and to meet the technical requirements of the genre. (2) reveals that the majority of students are unprepared for scientific writing. They rapidly improve their competence in writing as a result of (1).

Conclusions/Take-home messages: Postgraduate students who have low levels of writing competence and high levels of professional ambition benefit from the intellectual shock of learning to write at a time that might be seen as too late but isn't.

6AA/P3
Developing an effective handover tool for surgical trainees - enhancing learning opportunities
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Background: The General Medical Council stipulates good communication skills and effective handovers as part of 'Good Medical Practice'. The Royal College of Surgeons (RCS) has published recommendations for safe handovers but as yet no exact protocol, written pro-forma or evidence-base exists.

Summary of work: Current handover practice was analysed by auditing the written handover of 138 patients, in a single Trust, against RCS recommendations. A questionnaire was distributed to assess doctors' satisfaction with handovers. Hospital protocol was then changed that handovers should include the whole surgical team, awareness of RCS recommendations was increased and a written handover pro-forma was implemented. The data were re-audited.

Summary of results/Conclusion: Before changes were introduced, no patient handover fully complied with RCS recommendations. Common problems reported included not knowing how ill a patient was, how urgently they needed to be seen and any outstanding tasks. The new measures have helped standardise handovers and improve compliance with RCS recommendations. Handovers are now team-focused with teaching opportunities for surgical trainees, including case presentation and discussion.

Take-home message: A handover protocol and pro-forma has been shown to be an important educational tool by improving verbal and written communication skills, co-ordinating teamwork and providing clinical learning opportunities.

6AA/P4
Validation of a method for measuring resident physicians' reflection on quality improvement opportunities
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Background: Reflection on Quality Improvement (QI) opportunities is necessary for competence in practice-based learning. Valid assessments of this reflection are lacking.

Summary of work: By incorporating input from national experts and iterative revision, we developed a Mayo Quality Improvement Log Assessment Tool (M-QILAT) for measuring the quality of resident physicians’ written reflections on QI opportunities. Six faculty members assessed 50 reflections using this instrument. Factor analysis was used to examine instrument score dimensionality. Internal consistency and interrater reliability were calculated.

Summary of results: The M-QILAT contained three factors (Eigenvalue; number of items): Reflection on Personal Characteristics of QI (8.5; 7); Reflection on System Characteristics of QI (1.9; 6); and Problem of Merit (1.5; 5). Item mean scores ranged from 1.5 to 3.8 on a 4-point scale (highest scores in Factor 3; lowest in Factor 2). Interrater reliability was very good (intraclass correlation coefficients 0.72 to 0.89). Internal consistency reliability was excellent (overall Cronbach alpha = 0.93).

Conclusions: The M-QILAT has strong content and internal structure validity and is valuable for assessing resident reflection on QI opportunities.

Take-home messages: The M-QILAT is a reliable and valid assessment of residents’QI reflections, and should become a useful measure of learner competence in practice based learning.

6AA/P5
Time, tension and training
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Background: Reducing working hours, changing professional roles and changing trainee/trainer ratios necessitate major changes in specialist medical training which must cover many skills alongside clinical knowledge/exam-based credentialing.

Objectives: Identify UK Oncology trainees’ judgements of their training; evaluate their experiences in relation to national standards.

Summary of work: Quantitative survey using 5-point Likert scale and free text areas; triangulated with individual qualitative semi-structured interviews.

Summary of results: Patient care/clinical learning are essential and prioritised. Trainees also value other learning/training - research, audit, management and teaching - as important. Opportunities are compromised though due to conflicts with clinical duties and training needs. Continuity of patient care and the relationship with the consultant trainer (apprenticeship and mentoring) are crucial. There is inadequate time for: learning needs assessment; reflection; using the learning cycle; feedback.

Conclusions: Clinical experience alone is insufficient. Significant tensions exist between competing time demands and training needs.

Take-home messages: Changing professional roles necessitate a rethink of training. Prioritising all aspects of training is challenging. Methods of evaluating medical training require further work. Defining ‘good training’ is difficult.
6AA/P6
Written consultation letters: report of data from a postgraduate training program in internal medicine

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Background: Written consultation letters are essential communication tools between healthcare providers. Studies surveying referral physicians consistently reported more importance given to the specialist’s impression and management plan than to clinical details. Data are lacking regarding the residents’ performance in writing such letter.

Summary of work: From 2005-2007, a study about written consultation letters was undertaken at the University of Montreal Internal Medicine Program using a rating scale previously validated with family physicians. During the first year, consultation letters are simply collected. In the second year, the residents have an additional training by rating twice 10 anonymous letters of their colleagues, using the same scale. During both years, clinical teachers continued their usual correction of residents’ letters. At the end of the trial, all letters are rendered anonymous, distributed randomly and scored by participating staff.

Summary of results/Conclusions: 145 letters were analyzed. The mean scores of items concerning clinical details and impression/management plan were 2.93 and 2.49 respectively, with a significant difference (p<0.001). However, there was no difference between the two years.

Take-home message: Residents’ weakness in writing consultation letters lies mostly in items regarding impression and management plan. The traditional teaching based on corrections of other residents’ consultation letters has no significant impact on their performance.

6AA/P7
Developing the Performance Unit for postgraduate medical training in Wales

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Background: Since the introduction of MMC (Modernising Medical Careers) in 2005 competency based curricula have been developed and introduced for doctors undertaking postgraduate medical training. The curricula specify assessment tools to monitor progress through training. The Guide to Postgraduate Specialty Training in the UK (the Gold Guide) specifies Annual Review of Competence Progression (ARCP). Extensions to the training programme are limited to one year.

Summary of work: The Deanery has established a Performance Unit to support trainees with issues around performance and professional competence. The Performance Unit team are developing good links with the education providers (NHs Trusts) in Wales. The establishment of Specialty Training Schools enables faculty development of the specialty teachers. Advice on assessment and collection of robust information is provided to employers and educational supervisors.

Summary of results: The Unit has a close relationship with the Individual Support Programme of Cardiff University to provide assessment and remediation for individual trainees. The Unit is in contact with the General Medical Council (GMC) and other external agencies as required.

Conclusions: With increased assessment being required in postgraduate medical training the early, accurate identification of trainees with performance related issues enables appropriate support, assessment and remediation to be undertaken.

6AA/P8
The impact of clerical documentation requirements on the training environment: a survey of US Internal Medicine Residents and Program Directors

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Background: Trainees often spend a substantial amount of time on clerical duties. The amount of time spent on these activities is poorly understood.

Summary of work: As part of the 2006 United States Internal Medicine In-Training Examination, residents voluntarily completed a confidential survey that included questions on the number of average daily hours they spent in direct patient contact and in clerical documentation in the inpatient setting. Residents and program directors (PDs) were asked to report on frequency and importance of feedback provided by faculty.

Summary of results: A total of 16,402 trainees and 235 PDs completed the survey. There were 67.9% of residents who reported spending in excess of 4 hours per day on documentation. In contrast, only 38.9% reported spending this amount of time with patients. The majority of residents (56.5%) and PDs (60.0%) felt feedback on documentation occurred less than 50% of the time. PDs were more likely than residents to view feedback on documentation as highly important (73.2 vs. 58.6%).

Conclusions: Residents report spending more time on clerical documentation than on direct patient care. Additionally, the majority of residents and PDs perceived that feedback on documentation occurred infrequently. Finally, PDs rated feedback on documentation as of greater educational importance than did residents.

Take-home messages: The impact of clerical duties on patient care and the learning environment needs to be better understood. Efforts to reduce these activities or to make better use of them as learning opportunities should be considered.

6AA/P9
Toward an ecological perspective of resident teaching clinic

C S Smith*, C Francovich, M Morris, W Hill, F Langlois-Winkle, R Rupper, C Roth, S Wheeler, A Vo (University of Washington, c/o VA Medical Center, 500 W. Fort St. Boise, Idaho 83702, United States)

Background: We have synthesized work in biology, anthropology, complexity science, and ecological psychology to produce a coherent ‘Ecological Perspective’ of resident teaching clinic. This perspective posits five key elements: 1) Structure (physical, social, cognitive) and relational process (agency, power, communication) determine function. 2) Relational process continually reinforces or resists current structure. 3) Structure dominates in times of stability. 4) Relationship dominates in times of change. 5) The external environment constrains but cannot determine function.
Summary of work: A cross-sectional study of the ecological perspective was done at five resident teaching clinics. We assessed clinic leaders' readiness to address productivity-teaching conflicts before and after site-specific information about structural constraints and relationship tensions. Structural models identified critical elements that determined funding, rules and expectations for productivity and education. Relational models used normative graphical presentations of between-group value differences.

Summary of results: After seeing site-specific models, participants demonstrated significant increases in: i) the perceived usefulness of each model, ii) the belief that the models were complementary, and iii) leaders' understanding of the problem and readiness to respond.

Conclusions: Site-specific structural and relational information appears complementary and helps leaders to understand operational problems in teaching clinic.

Take-home message: An ecological perspective is potentially useful.

6AA/P10
Understanding reality: primary care as a training scenario for professionals
T Campos, A Romanos*, A Torres (Regional Ministry of Health, Government of Andalusia, Avda. Innovation s/n Edificio Arena 1, Sevilla 410071, Spain)

In the Andalusian Public Health System, primary care constitutes the first level of ordinary access to the health system for the citizen. 33 percent of nurses and 50 percent of all doctors currently carry out their professional activity in primary care. In so far as attending patients in primary care, in numbers of consultations, it is proportionally six times higher than that of hospitals. Furthermore, the Andalusian administration, in line with the relevant international strategies, is orientated towards the promotion of primary care. The health system has worked, in collaboration with universities, in the use of health centres for the practical clinical training of medical students, nurses and physiotherapists and agreements with universities include university health centres. Similarly, work is being done to increase the number of health care professionals who are developing their teaching role as associate teachers. It has been stipulated that in specialist training, resident hospital specialists should undertake a compulsory period of working in primary care. In both undergraduate and postgraduate studies, it has been demonstrated that students and residents have been shown to be receptive to primary care training. It should also be pointed out that importance is placed on professionals feeling satisfied when carrying out their work in this area of care.

6AA/P11
Continuous improvement – a unique component of the medical internship education at Sahlgrenska University Hospital (SU) Göteborg
Caterina Finizia*, Ulla Strandman (Sahlgrenska University Hospital Staff Instit, Administration staff Torggatan 1a, Molndal 43135, Sweden)

Background: All SU medical interns will have the opportunity to actively participate in and influence their own education. Four working teams were formed as a result of a brainstorming session focusing on barriers to and facilitators of a good medical intern education.

Aims: Practise process thinking and conduct projects: stimulate the interns to increase their involvement in the medical internship education; improve and develop the education.

Summary of work/Results: All medical interns at SU present their projects in accordance with an action plan. Final reporting of the projects is made both orally and in writing. The improvement projects are beneficial from: An individual perspective - participation, systematic work with goals and action plans; A group perspective - group affiliation, a feeling of togetherness, support and feedback; An organisational perspective - improved medical internship education. The improvement projects will encourage medical interns to be proactive staff members committed to influencing and improving their educational situation.

Conclusion: The projects stimulate the medical interns to become more involved and committed in their education, lead to skills enhancement in the areas of improvement and development work.

Take-home message: Medical interns are committed and proactive.

6AA/P12
Revision of postgraduate medical education programme: an evaluation of needs for teaching and learning skills
Kalinka Grijpink, Maurice G A J Wouters*, representing OOR VU University Medical Center, Amsterdam (VU University Medical Center, P.O. Box 7057, Amsterdam 1007 MB, Netherlands)

Background: Since 2006, obgyn and paediatric trainees in the Netherlands are subjected to a revised and competence based postgraduate medical education programme. It is expected that medical specialists and trainees require updates of their teaching and learning skills. At the VU University Medical Center and its affiliated teaching hospitals the needs for teaching and learning skills were studied.

Summary of work: A questionnaire was sent by email to 87 medical specialists and 66 trainees.

Summary of results: The overall response rate was 33.3% (51/153). A high proportion was convinced that structured assessments of trainees are mandatory (50/51, 98.0%). Among 70% (33/49) of the respondents there was a need for updating their teaching and learning skills, in particular for making and discussing a trainee development plan (23/33, 69.7%) and portfolio (18/33, 54.5%). Most respondents prefer an integrated training programme for medical specialists and trainees (25/33, 75.8%).

Conclusion: There is a high need among responding obgyn and paediatric specialists and trainees for updating their teaching and learning skills.

Take-home messages: Revision of a postgraduate medical education programme may require an update of the teaching and learning skills of specialists and trainees. An evaluation of the education needs may help in designing a well-focused training programme.
6AA/P13

Validity and reliability of the Job Evaluation Survey Tool (JEST)
SJ Jamal*, H/M Goodyear, VDiwakar, EAH Hughes, DW Wall (Birmingham Children's Hospital NHS Foundation Trust, Workforce Deanery, NHS West Midlands, St. Chad's Court, 213 Hagley Road, Edgbaston, Birmingham B16 9RG, United Kingdom)

Background: The Job Evaluation Survey Tool (JEST) is a simple one page 15 item questionnaire for quality control of postgraduate training placements, blueprinted to the UK PMETB's training standards. JEST was developed and piloted amongst Foundation trainees in our Deanery. This study looks at its use for evaluating specialty training programmes.

Summary of work: The JEST questionnaire was sent to 173 paediatric registrars in 17 hospitals in the West Midlands. Responses were analysed with SPSS 15 and GENOVA for mean scores, ranges, confidence intervals, reliability and predictability.

Summary of results/Conclusions: Cronbach's alpha was 0.880; with no rogue questions revealed by alpha with item deleted. Using generalisability theory the G coefficient was 0.8639. The error variances were: raters 0.18, questions 0.44. Logistic regression using all fifteen questions to predict yes/no responses to the question "would you recommend this job to a friend", revealed a correlation (R) of 0.675 and a correct prediction of overall satisfaction in 100% of cases. Factor analysis extracted three components after 9 iterations, accounting for 51% of the variance.

Take-home message: JEST is a simple valid and reliable method of evaluating postgraduate specialty training placements for quality assurance purposes.

6AA/P14

Building clinical pathways by postgraduate students as a method of improving knowledge about the patient's journey through a hospital
Andrzej A Kononowicz*, Kinga Salapa (Jagiellonian University Medical College, Department of Bioinformatics and Telemedicine, Kopernika 7e, Krakow 31-034, Poland)

Background: Application of clinical pathways (or integrated care pathways) is a well established method of quality assurance in many hospitals worldwide. Analysing medical plans is also believed to have great educational potential.

Summary of work: BitPathway, an editor for creation of clinical pathways implemented by the author of this presentation, has been introduced to a group of 47 postgraduate PhD students from various health care disciplines (medicine, nursing, public health, pharmacy). Students divided into groups of three got the assignment to construct multi-professional pathways summarizing the treatment of selected medical conditions. The BitPathway editor allows building block diagrams in which the individual steps can be described by attributes of various types. Additionally, it is possible to access the Polish national medical activity catalogue from within the program. Pathways may be saved locally or on a server in XML format. The course is still in progress - a formal evaluation of its outcomes is planned in the next two months.

Conclusions/Take-home messages: A mutual awareness of the activities of different professional groups in a hospital is crucial for health care. The described educational activity attempts to foster the integrated view on the patient's treatment process in a hospital.

6AA/P15

The intern/resident council – a platform for increasing postgraduate influence and quality of education
Lovisa Lovmar*, Caroline Werner*, Mattias Bjarnegård, Daniel Carlzon, Isabelle Cehlin, Christer Rosenberg, Antovan S Honarvar, Diana Swolin-Eide, Anders S Johansson, Caterina Finizia (Sahlgrenska University Hospital, Gothenburg, Intern/resident council, c/o Maud G Andersson, Torggatan 1A, Mölndal 431 35, Sweden)

Background: By initiative of the program directors for intern and resident education (Sahlgrenska University Hospital), a first selected set of interns and residents was assembled to form the council. The aims of the group and its composition were first assessed at a two-day workshop together with group development trainers. Subsequently a new workshop has been held every year to introduce new members, redefine the aims, and review and plan the achievements of the council.

Summary of work: The council serves as a reference group to the office of the program directors, pursues lobbying activities promoting the situation of residents and interns, and initiates and operates projects. Selected achievements encompasses: the development of an "all-hospital" e-mail system to reach all residents/interns, lobbying regarding research possibilities (time and financing), participation in hospital development initiatives, arrangement of an "inspirational day" for interns/residents, and initiation of a regional meeting for residents.

Conclusions: A council composed of "educational" physicians at a university hospital (residents and interns), enables both increased influence at all levels, and operation of diverse projects. The composition of the group, together with the close interaction with the office of the program directors, promotes quality enhancement of postgraduate education for physicians.

6AA/P16

Setting up a new School training committee for Acute Care Common Stem (ACCS) - experience from KSS deanery UK
Subir Mukherjee* (KSS Deanery, 7 Bermondsey Street, London SE1 7DD, United Kingdom)

Background: Modernising Medical Careers in UK resulted in a new training programme, the Acute Care Common Stem (ACCS) which includes training in three specialities of Acute Medicine, Anaesthetics and Intensive care over a period of two years. This involved significant negotiation between the three specialities.

Summary of work: Seven provider trusts were identified which could deliver the whole programme in three specialities over two years. A trust ACCS lead was appointed by the deanery who represents the Trust at the deanery level and coordinates the training programme between specialties at trust level. Information and feedback to participating trust is provided via the Trust ACCS lead.

Summary of results: 16 ST1 and 16 ST2 trainees are now enrolled in the programme. ACCS trust leads regularly meet at the deanery and act as the Faculty, delivering training, sharing information and exchanging good practice. A regional induction evening was arranged which was popular and the trainee representative is now part of the programme.
Conclusion: Adequate planning and discussion with key stakeholders is key to a successful training programme including different specialties. Shared values are key to its implementation. Consultants in key positions need training in negotiation skills and educational management.

6AA/P17
Postgraduate Medical Education in Wales: a review of identified performance issues
Sally Davies*, Leona Walsh, Heather Payne, Derek Gallen (School of Postgraduate Medical and Dental Education, Cardiff University, Neuadd Meirionydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

Background: Postgraduate medical training in NHS Trusts in Wales is quality assured by the School of Postgraduate Medical and Dental Education (Deanery) on behalf of PMETB. The Deanery oversees performance issues related to trainee progress through postgraduate medical training in Wales.

Summary of work: We reviewed performance issues known to the Deanery during a fourteen month period ending February 2008. Records were audited for the nature of the identified issues, assessment and remediation undertaken as well as outcome.

Summary of results: 95 trainees were identified. 31 trainees resumed satisfactory progress following a period of support. 8 trainees left the training programme. 56 are receiving ongoing support (>2% of total trainees). 20 are receiving support from the Specialty Training School. 36 are supported by the Deanery Performance Unit, of which 21 are undergoing a process of assessment and remediation by the Individual Support Programme. Concerns identified include clinical skills, leadership and team working, knowledge, attitude and behaviour, health issues and communication skills.

Conclusions: Educational supervisors need to understand the use of assessment tools to confidently identify concerns about trainee performance.

Take-home messages: Early and accurate identification of trainees with performance related issues is vital for appropriate assessment and remediation.
SS2/1
Delivering patient safety

Julian Dinsell* (TVC, 34 Great Pulteney Street, London W1F 9NP, United Kingdom)

Project: Delivering Patient Safety - multimedia package supporting medical professionals in removing the causes of harm before disaster can strike. For the first time ever, in a series of five DVD programmes with supporting materials, the series brings together leading world experts and the daily experience of those with hands-on patient contact.

Success: A success unique in its field, with usage spanning the globe.

Case History: After a worldwide evaluation of other available resources, CPSI (Canadian Patient Safety Institute) commissioned a specifically Canadian version, in French and English, to advance inter-professional curricula in CanMeds competencies emphasising non-technical/clinical skills. The series was recently launched nationwide with more than 1,000 copies. UK - in every one of more than 700 HNS Trusts; Swedish version - nationwide, on DVD and intranet; US version in production; Singapore - at the centre of a new nationwide patient safety initiative. Also in use in: Australia, Brasil, The Netherlands, Iceland, Ireland. Discussions in Saudi Arabia.

Presentation: a) CPSI version of Delivering Patient Safety; b) Learning portfolio and user guide facilitating both novice and experienced educators to use the series to match local priorities and local resources; c) Evaluation. Detailed feedback from international users.

SS2/2
The RCPCH ePortfolio - an innovative platform that supports focussed reflection, education supervision and personal development planning

Simon Frazer*, Alistair Morris, Lorna Highett, Tim Lee, (Bradford Teaching Hospitals NHS Foundation Trust, Duckworth Lane, BD9 6RJ Bradford, United Kingdom)

Background: The Royal College of Paediatrics and Child Health e-Portfolio provides an innovative support platform that supports focussed reflection, education supervision and personal development planning.

Summary of initiative: The e-portfolio contains several sections including an interactive curriculum for self evaluation of progress in achieving competencies. Structured forms formalise requirements for education supervision and annual reviews. The personal development plan allows trainees to set effective objectives. The developmental log provides structure for reflecting on critical incidents, education meetings, their own teachings, and many similar areas. The skills log allows trainees to record and reflect upon a range of practical procedures. Education supervisors and programme directors have remote access to a database of the trainee's portfolios. Progress can be reviewed through the trainee's record of assessments, self directed learning, reflection and education supervision in order to triangulate crucial information for annual review.

What will be presented: We aim to present a suitable platform that can be adopted not only for medical trainees but for other disciplines.

Take-home messages: The e-portfolio, although not an assessment instrument itself, underpins the review process of trainees in order to inform an annual review panel on the fitness to progress from one level of training to the next.

SS2/3
The 3-hour meeting concept: increasing educational initiatives by engaging junior doctors and management

Merete Ipsen*, Susanne Nøhr* (Aalborg Sygehus, Blegdalsparken 44, 9000 Aalborg, Denmark)

Background: As newcomers, junior doctors (JD) can be reluctant to suggest changes in educational facilities although they possess in-depth knowledge of educational opportunities at departments. The 3-hour meeting concept (3-hm) presents a good practice to improve the educational environment and to increase training activities in departments, initially by engaging JDs in educational decisions which then lead to wider dialogue in the organisation. The concept has run successfully in 29-31 departments in an 850-bed Danish university hospital.

Summary of initiative: The 3-hm consists of: 1. Meetings for JDs with creation of definite action plans. 2. Dialogue between doctors, department and hospital management with creation of educational strategies in blue prints. 3. Continuing process during the year with annual assessment of the department's educational effort.

What will be presented: We will support you with all the details on implementing 3-hm with success; benefits and barriers, photos of the entire process, PowerPoint, poster material, written material (including facilitating questions) and opportunities for electronic collection of reports.

Take-home messages: The success of the 3-hour meeting concept is increased engagement in the educational environment and in educational strategies from doctors and management. This impact has been ongoing annually for six years, and it continues.
Panel: Cees van der Vleuten, (Maastricht University, The Netherlands) (Chair); Donald Melnick (President, National Board of Medical Examiners, USA); Julian Archer (Peninsula College of Medicine & Dentistry, UK); Ronald Harden (University of Dundee, UK)

In many countries in Europe national licensing examinations are non-existent. Increasingly discussions are held to change this situation to explore the utility of these national licensing examinations. In some cases a comparison is made to the North-American situation and a plea is held for a pan-European approach to licensing. In this symposium we would like explore the value of these suggestions. After some introduction on the pros and cons, the audience will have the chance voice their opinions.

Short presentations: (1) Introduction of the topic by chair: Cees van der Vleuten; (2) Licensing Exams in North America: Is External Audit Valuable? Donald Melnick; (3) National or European licensing examinations: a good idea: Julian Archer; (4) National or European licensing examinations: a bad idea: Ronald Harden

An electronic poll will be taken on the audience responses to the following questions: (1) Undergraduate National licensing examinations in Europe is a good idea; (2) Undergraduate European licensing examinations in Europe is a good idea; (3) Postgraduate National licensing examinations in Europe is a good idea; (4) Postgraduate European licensing examinations in Europe is a good idea. There will follow a discussion in which the audience lists arguments and counterarguments successively. Minutes of arguments will be taken (Mereke Gorsira, Maastricht University) and posted on the AMEE website.

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Symposium

7B Promoting integration of basic and clinical sciences in medical education

(Symposium organised by International Association of Medical Science Educators (IAMSE)

Chairperson: Nehad El-Sawi* (Kansas City University of Medicine and Biosciences, USA)
Panel: Edward P Finnerty (Des Moines University Osteopathic Medical Center); Jack Strandhoy* (Wake Forest University School of Medicine, USA); Bruce Newton (University of Arkansas for Medical Sciences, USA); Jerome Rotgans* (Aachen University, Germany); Mathew Gwee* (National University of Singapore); Mark Andrews (Lake Erie College of Osteopathic Medicine, USA); Frazier Stevenson* (University of California at Davis, USA)

The changing character of medical education is forcing a critical examination of the role and value of the fundamental sciences in the preparation of physicians. A result of this is a greater emphasis on integration of the basic and clinical sciences throughout the curriculum. Various models and approaches will be explored by the panel and open for audience discussion.

Short presentations: (1) Role and value of basic sciences in medical education: Frazier Stevenson; (2) US curricular structure (4 years pre-med; 4 undergraduate medical school; residency) and traditional curricular design: Jack Strandhoy; (3) Integration models: Nehad El-Sawi; (4) European models: Jerome Rotgans; (5) Asian Models: Matthew Gwee.

The symposium will culminate in an invitation for the medical education community to contribute in a global examination of the Role and Value of the Basic Sciences in Medical Education (our ‘Flexner Revisited’ project).

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Short Communications

7C e-Learning in the undergraduate curriculum

7C/SC1

Introduction of an integrated, electronic undergraduate medical curriculum: implementation and evaluation after two years

Robert M Klein*, Michael Karr, Giulia Bonaminio, Anthony Paolo, Glendon G Cox, James L Fishback (University of Kansas, School of Medicine, Dept of Anatomy/Cell Biology & Pathology/Laboratory Medicine, Depts. of Family Medicine & Radiology, Dept of Psychiatry & Behavioral Sciences, Kansas City 66160, United States)

**Background:** The University of Kansas, School of Medicine (KUSOM) introduced a new integrated, module- and technology-based undergraduate curriculum in 2006.

**Summary of work:** The tablet PC preloaded with all necessary software is the centerpiece of the curriculum and is used to integrate technology components, providing 24/7 access to all curricular material. The focus is self-directed learning and student collaboration, improved personal and institutional organization, and enhanced critical-thinking skills. Changes included a 40% reduction in lectures, increased PBL, small group, and E-learning activities. Ultimately, we hope to improve students’ cognitive knowledge, problem solving and clinical skill competencies, and Step One national board scores.

**Conclusions/Take-home message:** The implementation of the integrated curriculum delivered using the tablet PC was very successful with the exception of E-textbooks which are not used effectively by students or faculty. A tendency toward retrenchment in style and content by faculty requires constant faculty development and vigilance by the curriculum and module leadership. We encountered few technical problems, and student and faculty satisfaction has been high. Virtual microscopy has been a welcome change from microscopes, though accessing large images wirelessly has proven problematic. Such a technology-intensive curriculum requires large amounts of time and resources to implement effectively.
Educational measurement in medical eLearning meets INMEDEA Simulator - An experimental-didactic study on use and efficiency of the virtual clinical environment provided by INMEDEA

Reinhard Staber*; Josef Smolle* (Medical University of Graz, Graz A 8010, Austria)

Parallel to the initiation of an integrated curriculum at the Medical University of Graz (MUG) a virtual learning environment was implemented, designated as Virtual Medical Campus (VMC). Learning objects are granular and strictly equipped with a set of metadata conforming to the SCORM 2004 3rd edition standard and are therefore reusable and exchangeable with other study courses or e-Learning-systems. Simple usability allows the intuitive creation of content to the authors, which may be enriched with interactive and tutorial systems using several built-in authoring tools like web-based-training or a Virtual Microscope. Today the VMC Graz provides 13 study courses at four universities in two different European countries and two international postgraduate programs. Case based learning within the VMC is provided in two different ways: on the one hand case studies are primarily offered using the built-in web-based-training tool; on the other hand it is possible to integrate more complex tools, such as the INMEDEA SIMULATOR Player. Since the summer term of 2006 a special elective study course “Medical learning with new media” at the Medical University of Graz is given. The learning efficiency is evaluated with multiple-choice-tests both before and after tasks and learning arrangements. Multiple-choice-tests are also used for group-comparison and task-comparison. Essay-tasks are used for the documentation of student’s explicit knowledge and the evaluation is done by content analysis. Based on a study concerning case-based reasoning and the use and efficiency of the virtual clinic environment provided by INMEDEA was evaluated by more than 150 students. It was shown that students are able to gain systematic knowledge by working on case studies. The feedback of students was ambivalent on learning by studying cases only. Almost all students liked learning with the INMEDEA Simulator and were animated to acquire knowledge on the cases, although the majority of our students claimed improvements in usability. Most of them indicated that they benefited from learning with the simulator, but experienced that the simulation was very time-consuming if they had not enough previous knowledge.

Evaluation of a radiology eLearning program – key factors contributing to success

Poh-Sun Goh* (National University Health System, 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: We successfully created a complete set of eLearning material for teaching radiology to undergraduate medical students last year. We hope to present our program evaluation of what worked and did not work.

Summary of work: Our development process has been presented at past AMEE conferences. We aim to present our program evaluation of what worked and did not work.

Summary of results: Key success factors identified are - understanding pedagogy, creating prototypes, faculty and student input, a development team with committed project manager, a completed module for student and faculty feedback, and to secure funding and administrative support, widening pool of subject matter experts, measuring outcomes and clinical impact, promoting reusable content, using open access to encourage usage and contribution, and creating a development workflow to facilitate content contribution and creation.

Conclusions: Developing a successful eLearning program is a rewarding but challenging process with several pitfalls. Knowledge of these pitfalls and key steps in the development process contribute to success.

Take-home messages: Understanding pedagogy, forming a team, developing prototypes, student and faculty engagement, securing funding, widening the pool of content experts and understanding human factors promoting usage and contribution are key to a successful eLearning program.

How to master medical certificates – good results with integrated learning opportunities

Juhani Jaaskelainen*, Irma Virjo (University of Tampere, Department of General Practice, Medical School, Tampere 33014, Finland)

Background: Medical certificates are traditionally dealt with in separate session late in the curriculum of basic medical education. The Medical School in Tampere has a PBL based integrated curriculum where certificates are included in meaningful contexts during 2nd to 6th year. Learning goals for the 4th year include sickness absence certificates and reimbursements of travel costs. The tasks of the radiotherapy technologist have broadened and shifted so much in the past years that specialization became necessary. Each technologist should however be employable in any part of the working field and should have the necessary elementary knowledge about the whole spectrum of patients and modern treatment possibilities. Radiotherapy departments of 4 institutions in the Netherlands have joined hands to develop teaching material to overcome the difficulty of maintaining, refreshing and deepening the knowledge of their staff.

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Ortello, a collaborative radiotherapy E-learning environment for radiotherapy technologists

A M Warmerdam, S Eggermont* (Leiden University Medical Center, PO Box 9600, Department of Surgery K6-R, Leiden 2300 RC, Netherlands)

Background: The tasks of the radiotherapy technologist have broadened and shifted so much in the past years that specialization became necessary. Each technologist should however be employable in any part of the working field and should have the necessary elementary knowledge about the whole spectrum of patients and modern treatment possibilities. Radiotherapy departments of 4 institutions in the Netherlands have joined hands to develop teaching material to overcome the difficulty of maintaining, refreshing and deepening the knowledge of their staff.
Conclusions:

OSCEs can be challenging. In developing these video components we have delivered stations that are standardised and reproducible, incorporating visual as well as verbal cues. They can elicit a range of abilities: decision making, practical skills and professionalism, all in one station, and emphasise that the treatment of a patient is a journey and not necessarily discrete components.

Summary of results:

These stations now span ‘video ward rounds’, patient safety, prescribing and acute care. An OSCE narrative report for a candidate summarizes performance for each category across 14 stations, identifying themes of strength or weakness. It provides information for a licensing authority who place high value on the comments identifying themes of strength or weakness. It provides information for a licensing authority who place high value on the comments.

Conclusions/Take-home messages:

Despite the huge response only 78 students could participate. They developed 15 case-studies. The concluding evaluation indicated a high acceptability and satisfaction with regard to the content, mentoring and the design of the course.

Video components in OSCE stations – assessing the bigger picture?

Kirsty Forrest*, Jon Cooper, Mat Callister, Shervanthi Homer-Vanniasinkam, Godfrey Pell, Richard Fuller (University of Leeds School of Medicine, Worsley Building, University of Leeds, Leeds LS2 9JT, United Kingdom)

Background: The increasing focus on patient safety and medicines management in the health arena are reflected in the Leeds curriculum, highlighting professionalism, safe prescribing, record keeping and patient safety as key learning objectives. Whilst taught formally and reinforced with a work-based practical skills portfolio, examining these skills within ‘traditional’ OSCE stations can prove difficult.

Summary of work: We developed video components that were incorporated into OSCE stations, allowing assessment of these key objectives. These stations now span ‘video ward rounds’, patient safety, prescribing and acute care.

Summary of results: Quality metrics of the stations used in 2006 and 2007 compare well with those of more ‘traditional’ stations, contributing positively to Cronbach’s alpha, and with good levels of inter-grade discrimination. Findings from 2008 will be presented.

There is obvious face validity.

Conclusions/Take-home messages: Engaging workplace concerns alongside the traditional tensions of validity and reliability within OSCEs can be challenging. In developing these video components we have delivered stations that are standardised and reproducible, incorporating visual as well as verbal cues. They can elicit a range of abilities: decision making, practical skills and professionalism, all in one station, and emphasise that the treatment of a patient is a journey and not necessarily discrete components.

Two approaches to get students involved in voluntary e-learning programs

Bruce Holmes*, Robert Maudsley, Kevin Bourke (Dalhousie University, 5599 Fenwick Street, Learning Resource Centre, Faculty of Medicine, Halifax B3H 1R2, Canada)

Background: To improve assessment of international medical graduates (IMGs) for practice readiness, the Clinician Assessment for Practice Program (CAPP) addressed the enhancement of OSCE reporting by incorporating substantial qualitative data.

Summary of work: OSCE reports are prepared from data on history taking; physical examination; diagnosis and problem definition; and, investigation and management. Qualitative and quantitative data from simulated patients and physician examiners are obtained.

Conclusions: Voluntary e-learning programs should be integrated in the curriculum and relevant for exams and practice. Students should familiarise themselves early on in their studies (1st-year) with the e-learning tools. Peer-to-peer education also involves the students in the creation of learning materials and encourages them to use new techniques. Both approaches will be intensified in the future.

Conclusions:

Plain text representation: Improving the OSCE

Summary of work: An authoring tool was developed and 9 patient cases and several games and tests are all combined in an E-learning environment that can easily be accessed from any computer with internet connection. Each radiotherapy technologist can map out his individual learning path and study in his own time at his own pace, or practice just-in-time learning for a new task. For the learner’s convenience, cases can be left and continued later on, or restarted if so desired. Supervisors have access to user data to gain insight in common problem areas as well as the study progress within the personal development plan.

Conclusions: E-learning is a suitable educational method for staff development.

Take-home messages: Ortello will be online as from April 1st of 2008.

7C/SC6

Two approaches to get students involved in voluntary e-learning programs

J P Ehlers*, R Wagels, C Stasyzk, H Gasse, C Pfarre, R Koch, N Baltes, J Rehage, H Meyer, M Feldmann, H Bollwein (University of Veterinary Medicine Hannover, Buenteweg 2, Hannover 30559, Germany)

Background: The University of Veterinary Medicine Hannover aims to enhance the use of e-learning as a supplement to traditional teaching. By the use of multimedia-based case-studies students should be motivated to learn and research literature on their own as a mixture of constructive and cognitive-instructive elements.

Summary of work: CASUS was used to create learning-modules: (1) Case-studies developed by lecturers: In anatomy, lecture and test-accompanying-case-modules were offered for voluntary use (1st-and-2nd-year). The participants of the clinical-practical-year of the Clinic-for-Cattle (5th-year) were given the possibility of working on 5 case-studies during free-time. (2) In the Clinics-for-Horses and Cattle as in the Department-for-Microbiology multimedia-based CASUS case-studies were provided as an elective course (peer-to-peer-education).

Summary of results: (1) The percentage of voluntary use of 5 anatomic-modules varied between 47.6% and 72%. In the Clinic for Cattle an utilisation of 22.9% was achieved. (2) In the previous three semesters 5 elective courses in creating case-studies took place. Despite the huge response only 78 students could participate. They developed 15 case-studies. The concluding evaluation indicated a high acceptability and satisfaction with regard to the content, mentoring and the design of the course.

Conclusions: There is obvious face validity.

Voluntary e-learning programs should be integrated in the curriculum and relevant for exams and practice. Students should familiarise themselves early on in their studies (1st-year) with the e-learning tools. Peer-to-peer education also involves the students in the creation of learning materials and encourages them to use new techniques. Both approaches will be intensified in the future.
7D/SC3
How to implement a "Train-the-examiner seminar" as preparation for OSCE
Sandy Kujumdshiev, Susan Christoph*, Katharina Hamm, T O F Wagner (Johann Wolfgang Goethe-University Frankfurt, Department of Internal Medicine, Theodor-Stern-Kai 7, Frankfurt D-60590, Germany)

**Background:** Since 2004 we have performed Internal Medicine OSCEs and informed our examiners concerning their OSCE station without further training. To evaluate examiners' performances a "Train-the-examiner seminar" was established in March 2007.

**Summary of work:** Prior to the OSCE a 2.5-hour interactive "Train-the-examiner seminar" was given to all examiners (n=39). It consisted of a presentation of the OSCE principles focusing Internal Medicine and video role-plays to be assessed with checklists.

**Summary of results:** The reaction of all workshop participants was very positive. They rated it with 1.31 ± 0.51 (mean ± SD on a 6-point Likert scale, 1 = excellent, 6 = terrible) overall. Colleagues rated their preparedness for examining in the OSCE after our seminar with a mean value of 1.41 ± 0.80 (mean ± SD). After the first seminar one colleague wished more theory, four an OSCE audit, five a real OSCE video and twelve more rating of the checklists.

**Conclusions:** Now every examiner has to take part in the seminar once before rating in an OSCE and as a consequence of the evaluation we have even more practical exercises.

**Take-home messages:** Future OSCE examiners should be offered a "Train-the-examiner seminar" for preparation. This is how we try to guarantee an equal and objective conversion of the OSCE principles.

7D/SC4
Improving OSCE examiner skills and behaviour in a Malaysian medical school
C P L Tan*, P Rokiah, F A A Yang, V Anusya (University of Malaya, Faculty of Medicine, Kuala Lumpur 50603, Malaysia)

**Background:** The Objective Structured Clinical Examination (OSCE) is an assessment component of the final year exit examination of the undergraduate medical programme at the University of Malaya. Observations of examiners in OSCEs prior to 2006 noted that they were inconsistent in marking checklists and some demonstrated inappropriate behaviour such as prompting and teaching.

**Summary of work:** Examiner training workshops were organised to help examiners develop appropriate examiner rating skills, and observations of these examiners during subsequent OSCEs were done to determine if their scoring skills and behaviour had improved.

**Summary of results/Conclusions:** During the training workshops, the participants showed wide variation in scoring and on occasion awarded marks for items not included on station checklists. Workshop facilitators provided feedback on their behaviour as examiners. Observers in subsequent OSCEs reported incidences of inappropriate behaviour, and wide variations in practices between different examiners (trained or untrained) examining the same OSCE station in parallel tracks. However, the examiners who underwent training prior to the examination were on the whole more consistent in their behaviour, with no or minimal prompting.

**Take-home message:** Examiner training workshops are helping examiners be more aware of and more consistent in their behaviour and rating skills during OSCEs.

7D/SC5
A class of primary school children acting as child patients in a large summative OSCE; benefits of a two-way collaboration with a primary school
Jonathan C Darling* (University of Leeds, Academic Unit of Paediatrics and Child Health, St James’s University Hospital Leeds, Leeds LS9 7TF, United Kingdom)

**Background:** We have moved to a large, multispeciality, summative, end-of-year OSCE in year 4, in common with many other medical schools. This improves exam metrics, but makes it difficult to involve child patients.

**Summary of work:** For 3 years, we have collaborated with a local primary school, and brought a whole class of children to our OSCE examination. In return, we have delivered some special sessions to the school in their science week. We do not know of any similar initiative. The benefits of this two-way collaboration will be presented, including feedback from school teachers, children and parents. The logistics of involving children in a large OSCE (260 students, 20 stations, 14 circuits in one venue over 2 days) will be discussed, along with potential pitfalls.

**Conclusions:** We have developed a successful collaboration with a local primary school, involving a whole class of children as child patients in a large OSCE. This allows better assessment of certain paediatric skills. Children, teachers and parents perceive the collaboration positively.

**Take-home messages:** Paediatric examination skills can be assessed using real children, even in a large OSCE examination. Collaboration with a primary school is an effective way to do this.

7D6
Does editing an OSCE station after an examination improve its performance on subsequent examinations?
Timothy J Wood*, Sydney Smee (Medical Council of Canada, 2283 St. Laurent Blvd., Ottawa K1G 3H7, Canada)

**Background:** For objective structured clinical examinations (OSCEs), it is common for test committees to edit stations by changing answer keys, weights, or examinee instructions after an examination. These edits are usually made with the intention of improving the performance of the station. But do these edits actually work? This is an important question because editing stations impacts on the ability to create or maintain banks. The purpose of the presentation is to conduct a preliminary analysis to determine if altering a station improves the performance of the station on subsequent examinations.

**Summary of work:** Two stations that have been used at least twice over the last 6 years on a high stakes OSCE were identified and station performance statistics were compared across administrations.

**Summary of results/Conclusions:** Preliminary analysis showed slight differences in the mean score, cut score and item-total correlation for one station but little difference for the other. A more in depth analysis considering the type of station, the type of edits, and the impact on the pass rate and borderline examinees will be reported.

**Take-home message:** The results from this study will be of importance to test administrators who are creating or maintaining a bank of clinical stations for their examinations.
7E/SC1
Developing national schema to enhance medical education in the Kingdom of Saudi Arabia
Rania Zaini*, Pasty Stark (Umm Al Qura University, Medical Education Unit, Makkah 13611, Saudi Arabia)

**Background:** With the expansion of medical education in Saudi Arabia and the growing criticisms of conventional medical curricula, this study aims to generate a development strategy for the Saudi medical education system that is based on actual needs and opportunities in the Kingdom.

**Summary of work:** To develop such strategy, three aspects were investigated. Firstly, the possibility to develop national agreement on learning outcomes of medical programmes. Secondly, the vision of the “Saudi Future Doctor” from the perspectives of medical education stakeholders, including recent graduates and the most influential decision-makers in medical education and practice. Thirdly, the limitations and strengths of current medical curricula in the Kingdom. To accomplish this study, a two round national Delphi study, Focus Groups with interns, semi-structured interviews with decision-makers, and documentary analysis of two medical programmes were undertaken.

**Summary of results/Conclusion:** Findings of these four research methods concurred with international experiences and suggested five principles for change: Strengthen legislations and cooperation, evaluation, partnership, curriculum reform, and awareness of medical education. These principles informed the suggested schema.

**Take-home message:** The development of medical education cannot be seen from one perspective. Rather, it is a holistic plan and interrelated process that involves vertical and horizontal integration between related parties in visions and agendas.

7E/SC2
Facilitating student learning on ward rounds
Vanessa C Burch*, Linda de Villiers (University of Cape Town, Department of Medicine, J Floor, Old Main Building, Groote Schuur Hospital, Observatory, Cape Town 7925, South Africa)

**Background:** Clinical clerkships comprise a range of learning experiences. Of these, ward rounds are often perceived to be of limited educational value to undergraduate students.

**Summary of work:** A class of 4th year medical students were divided into 4 groups: group A attended weekly Stroke Unit (SU) ward rounds and were tested post-rotation; group B were informed of the intended learning outcomes, attended weekly SU ward rounds and were tested post-rotation; groups C and D were tested pre-rotation and post-rotation. Group C submitted the pre-rotation question paper while group D kept the question paper during the rotation.

**Summary of results:** The post-rotation performance of group A was significantly worse than the other groups – A vs. B (p<0.01), vs. A vs. C (p<0.01) and A vs. D (p<0.01). There was a significant post-rotation improvement in groups C (p<0.001) and D (p<0.0001). The post-rotation results for group B did not differ significantly from groups C (p=0.61) and D (p=0.12).

**Conclusion:** Students learn more effectively on ward rounds if they are provided with clearly defined learning outcomes, either as a list or a pre-rotation test.

**Take-home message:** Clearly articulated learning outcomes improve the educational value of ward rounds.

7E/SC3
How to be a good doc and how to train them
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**Background:** Retrospective evaluation of medical curricula is a way to identify key competences from a practice point of view and to assess the quality of a curriculum.

**Summary of work:** Several competences and their job relevance were evaluated from more than 5,200 German medical Alumni on a 6-point-Likert-Scale (1=very important, 6=not important). We assessed the education of these competences in a subgroup analysis within the reform University Witten/Herdecke (UWH, n=264).

**Summary of results:** Overall, alumni rated “self-dependent working/learning competence” most important (1.81±0.9), followed by “practical skills” (1.83±1.2), “psycho-social competences” (2.11±1.3) and “team working” (2.16±1.2). The subgroup UWH evaluated the job relevance of “medical knowledge” less (2.33±1.3 vs. 2.22±1.0; p<0.02) and “research competence” more important (3.20±1.6 vs. 4.08±1.5; p<0.001). Comparing demanded competences in the job with their education during medical school, UWH alumni indicated a lack of education in “business administration” (delta: -1.51; p<0.0001) and a positive gap in “interdisciplinary thinking” (delta: 0.64; p<0.0001).

**Conclusions/Take-home messages:** German medical graduates rate “self-dependent working/learning” and “practical skills” as most important competences from a practice point of view. Both “good doctor” competences are central elements of problem-based-learning curricula like the one at UWH. Inadequacies were identified within the UWH curriculum making improvement necessary.

7E/SC4
The design, implementation and evaluation of an outcome-based primary care CME curriculum
Orit Cohen Castel*, Vered Ezra, Mordechai Alperin, Khaled Karkabi, Shlomo Vinker (The Department of Family Medicine, the Rappaport Faculty of Medicine, Technion, 6 Hashafah St, Bat Galim, Haifa 35013, Israel)

**Background:** Medical care in the Israeli Defense Force (IDF) is based upon primary care clinics located in the military units. Due to a shortage in enlisted physicians, civilian physicians are employed in the home front clinics. Most of them immigrated to Israel during the 90s, were not formerly familiar with military life style, health issues, and medical system and have not completed any residency program in Israel. The authors aimed to address the need of practicing physicians for military specific primary care education by designing, implementing and evaluating a longitudinal curriculum.
**Summary of work**: Following an extensive needs assessment and formulation of competencies and objectives, we developed a three-year curriculum using small group, interactive, multidisciplinary teaching and self-education. Annual pre-post multiple choice tests, OSCEs, and final practice based projects were used for curriculum evaluation.

**Conclusion**: We present a model for the systematic design of an outcome-based CME curriculum in primary care, meeting both learners’ and system’s needs.

**Take-home messages**: The outcome-based approach is an important framework for the development of a postgraduate educational curriculum.

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**7E/SC5**

**Outcome-based education and assessment in medical education: challenges to implementation**

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**Background**: In the Netherlands all medical specialties are, forced by the government, changing their PGME-curriculum into a competency-based curriculum. The modernised PGME-curricula of OB/GYN and paediatrics have been presented 2 years ago and these curricula are at this moment implemented in a nationwide joint effort between paediatricians and gynaecologists: the IN VIVO project (started January 1st 2007). From the start of the project it showed that residents suffered from a lack of information and experience with competency-oriented training.

**Summary of results**: Previous work suggests that capitalizing on the steps of planning, creating, implementing, and evaluating such curricular change, including the development of broad based competencies, resource planning including faculty development, and evaluation methodology is a key to success.

**Conclusions**: Lessons learned at medical schools in the US that have launched outcome-based curriculum can serve as frameworks for other institutions attempting to meet the outcome-based education challenge.

**Take-home messages**: (1) Planning for a competency-based curriculum is an iterative process; (2) Understanding and accounting for stumbling blocks is imperative; (3) Addressing faculty development, learners’ assessment and program evaluation are keys to success.

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**7E/SC6**

**Implementations of competency-oriented PGME-programs necessitate professionalisation of the residents: the Dutch experience**

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**Background**: In most higher education institutions (HEIs) CPD is regarded as a secondary function. The question was what are the preferences of their alumni?

**Summary of work**: Sample size: 1,177 alumni of a HEI.

**Summary of results**: 78% of respondents expressed interest in becoming part of a CPD alumni network (CAN). These respondents indicated it was important to them to: know who in their geographical area were members of this CAN; interact with other members at regular intervals; discuss practical/clinical issues; be mentored; and evaluate by experts against minimum performance standards, e.g. guidelines. The potential members of the CAN indicated a need for training workshops; an alumni newsletter; a summary of the latest development in their areas of interest; and one-day refresher seminars.

**Conclusion**: The results of this study indicated that alumni have a need that HEIs provide CPD opportunities to them in support of the purpose of CPD.
Take-home messages: HElS cannot regard CPD as a secondary function but it is an integral function of HEIs and entails to: identify deviations from accepted norms through research; identify reasons for these deviations; implement corrective actions to remediate performance; and continuously update and support professionals to maintain best evidence practice.

7F/SC2
Persuasive strategies in continuing education: a comparison of international guidelines for the management of hypertension
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Background: Clinical practice guidelines are a valuable resource for clinicians who must navigate continually-advancing, proliferating, and often conflicting scientific evidence to maintain expertise. Multiple guidelines for the management of hypertension have been published internationally. Comparative analyses have focused on content, methodology, and bias. Little attention has been paid to the range of persuasive strategies used to convince practitioners to adopt recommended practices.

Summary of work: Seven hypertension guidelines published internationally between 2003 and 2006 were analyzed using rhetorical theory (which describes persuasive strategies).

Summary of results: Guidelines tend to be produced in multiple versions varying in length and format. This strategy is used to manage, and in effect to divide, the genre’s multiple audiences (generalist, specialist) and purposes (to provide recommendations, present evidence, and incite change). International guidelines rarely refer to one another or to competing interpretations of scientific evidence. Differing persuasive strategies reveal disparate conceptions of scientific knowledge, clinical practice, and their interrelationship.

Conclusions: Guidelines use a range of persuasive strategies that demonstrate both trends and differences among international guidelines.

Take-home messages: Persuasion is a necessary component of continuing education. Understanding persuasive strategies may help to improve guideline design; reveal cultural values and differences; and develop critical appraisal skills attentive to both the content and social uses of evidence.

7F/SC3
Educational speed dating sessions: an innovative method to foster knowledge exchange and collaboration
Réjean Laprise*, Robert L Thivierge (1CPD Office, Fédération des médecins spécialistes du Québec, Montreal, Quebec ; 2CPASS, Université de Montréal, Montreal, Quebec, Canada)

Background: Many healthcare issues could be resolved by breaking up professional silos and adopting collaborative and holistic approaches to patient care. However, interdisciplinary CME events are still rare.

Summary of work: We hypothesized that providing a quick and formal opportunity to share clinical issues and goals would foster collaborations between educators who target different professional audiences. An innovative interactive method, called Educational Speed Dating Sessions (ESDS), was developed from the concept of speed dating and tested with CPD directors of 35 medical specialist associations during a faculty development meeting.

Summary of results: Results from a survey show that participants believe ESDS to be a stimulating and efficient way to meet new colleagues, quickly share needs and objectives, learn about unexpected but important interdisciplinary issues, and identify opportunities for collaboration. 36.8% of the 15-minute meetings resulted in booking another meeting to occur within 6 months. We are also aware of one interdisciplinary CME that took place within 6 months as a result of the activity.

Conclusions/Take-home messages: ESDS is an innovative method that fosters knowledge exchange and collaboration between participants. It can be used in any meeting to increase the likelihood that these outcomes happen.

7F/SC4
FMOQ – Self-Managed Continuing Professional Development Plan (SCPDP) – a reflexive approach to CME
Pierre Raîche* (Federation of General Practitioners of Québec, 1440 Sainte-Catherine ouest #1000, Montréal, Québec H3G 1R8, Canada)

Background: The Collège des médecins du Québec required all physicians to join a self-managed continuing professional development plan (SCPDP), as of July 1st 2007.

Summary of work: In addition to the existing tools developed by other organizations, the FMOQ’s CME department developed tools to help physicians plan their continuing professional development strategy based on a reflexive approach. Those tools are the FMOQ’s SCPDP, a three hour workshop, a complementary guide published in our CME journal and an electronic SCPDP posted on a secure Website. That electronic version will constitute a continuously updated anonymous database of member CME needs. Over 3,000 members (50% of working GP in the province) have so far attended the workshop.

Conclusion: Our three hour workshop attendance numbers suggest that physicians will make wide-spread use of the SCPDP. Offering such a management tool to facilitate individual CME planning should facilitate future planning of FMOQ-sponsored CME activities and the evaluation of the impact of the SCPDP on CME attendance throughout our network (which offers 65% of CME activities throughout the province).

Take-home message: The regulatory imposition of a CME obligation can be an opportunity to assist members, identify CME needs and document its impact.

7F/SC5
Designing CPD for impact: a decade of design based research and development
Lynn Robinson*, Laurent Frossard, Cherri Ryan, Nina Cruickshank, Robert Hendy (University of Queensland, Centre for Health Innovation and Solutions, 4/49 Butterfield Street, Herston QLD 4006, Australia)

Background: Unlike its clinical science counterpart, medical education is rarely informed by research programs carried out continuously over a long period of time and including all steps in the scientific method - observation, formulation of a model/hypothesis, prediction based on the model/hypothesis and testing/observation to inform the next cycle of research.
**Summary of work:** In 2005, a collaboration between the leading provider of continuing professional development programs for health professionals in Australia, Med-E-Serv, and the University of Queensland was established. Med-E-Serv's design based research and development program had been through two full research cycles by 2007. The design models support both face to face and online small group learning and use 48 design parameters (advanced from 8 in the first cycle). Process, impact data and outcome data has been rigorously collected for 7 years (approximately 20,000 learners and over 50 programs in each cycle). Until now, neither the design models nor the results of field testing have been published due to the commercial sensitivities. With the resolution of the commercial issues in 2007, both the designs and the research outcomes are available to researchers and a third design based research cycle has commenced.

**Results:** Preliminary results and future directions are presented.

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**7G Teaching and learning communication skills**

### 7G/SC1
**Sex, drugs and rock & roll: interviewing adolescents using the Structured Communication Adolescent Guide (SCAG)**

**Kim Blake*, Karen Mann** (Dalhousie University, Division of Medical Education, C-124 Clinical Research Centre, Halifax, NS B3H 4H7, Canada)

**Background:** Adolescent patients present both opportunity and challenge. Adolescence is an opportune time to identify risk-taking and provide preventive counseling; yet, communicating effectively remains challenging. Despite its relevance and importance, little structured training is available to develop effective interviewing of adolescents.

**Summary of work:** Adapted from the Calgary-Cambridge Communication guide, the Structured Communication Adolescent Guide (SCAG) was developed to provide feedback to medical students learning adolescent interviewing.

**Summary of results:** In several studies, the SCAG has demonstrated reliability, construct and concurrent validity. It can be reliably scored by trained adolescent simulated patients, and by male and female untrained adolescents. A randomized controlled trial demonstrated immediate and sustained improvements in medical students' performance. Feasibility and acceptability are high, and the guide can be used in varied educational settings, independently or with supervision, at different educational levels and geographic settings.

**Conclusions:** In summary, with ongoing study and refinement, the SCAG has evolved to become a learning and feedback tool that is widely applicable, practical and demonstrates desirable measurement properties.

**Take-home messages:** Instrument development requires continued study, improvement and testing. The SCAG is a practical tool to be used by learners and practicing professionals to learn, gather feedback and improve adolescent interviewing skills.

### 7G/SC2
**Learning and assessing the Giving of Bad News with the on-line tools “doc.com” and “WebOSCE”: presentation of a pilot study**

**C J Daetwyler*, D H Novack, E Gracely, D Cohen** (Drexel University College in Medicine, 2900 Queen Lane, Room 221B, Philadelphia 19129, United States)

**Background:** Knowing how to give bad news is an extremely important skill in patient care. However, medical schools often do not teach or assess this skill in a systematic way.

**Summary of work:** At the Drexel University College of Medicine, in collaboration with the American Academy on Communication in Healthcare, we developed "doc.com", a set of online modules for the teaching of medical communication skills. Module 33 “Giving Bad News” is authored by Timothy Quill, an acknowledged expert in end-of-life communication. In addition to the doc.com modules, we developed WebOSCE, a tool that allows students to meet on-line with standardized patients (SPs) to practice what they’ve learned in doc.com. Study design: We first assessed 60 residents on their abilities in giving bad news. Then we randomized them into 3 groups: a control-group without educational intervention, a doc.com group who read module 33, and a group that read module 33 combined with a WebOSCE interaction that included SP feedback. After three months we re-assessed all residents’ abilities in giving bad news.

**Summary of results:** We found a significant positive linear trend in change from baseline in the abilities of the groups as the intensity of the intervention increased (p = 0.018).

### 7G/SC3
**Teaching of medical communication skills with DiViDU. Assessing the level of reflection on recorded consultations with simulated patients**

**R L Hulsman*, A B Harmsen, M Fabriek** (Academic Medical Centre, Medical Psychology, P.O.Box 22660, Amsterdam 1100 DD, Netherlands)

**Background:** Acquisition of effective communication skills requires both practicing skills and reflective thinking. Reflection is a cyclic process of analysing communication behaviour in terms of goals and effects and designing improved actions. Using the ALACT reflection model of Korthagen, a communication training was designed, featuring: simulated patients, self-directed learning, collaborative learning, peer-feedback. Using www.DiVIDU.nl, students reviewed their recorded consultation, marked three key events and attached written reflections.

**Summary of work:** Data were analyzed of 304 (90.6%) second year medical students. Rating criteria were developed for assessment of the students' level of reflection. A reflection-level score was based on a frequency count of the number of criteria used over three reflections. Students filled out an evaluation questionnaire on the reflective cycle components of the training.
**Summary of results**: Four reflection categories: observations, motives, effects and goals of behaviour, were used 7% to 38%. Most students phrased undirected questions for improvement (93%). The average reflection score was 2.1 (sd 2.0). All training components were considered instructive. Acting and reviewing videos was considered instructive. Self-reflection was considered more difficult than providing written feedback to the reflections of peers.

**Conclusions**: Low reflection levels might indicate a limited notion of communication as goal oriented behaviour. Early introduction of critical self-reflection facilitates acceptance of an important ability for physicians for continued life-long learning and becoming mindful practitioners.

**7G/SC4**

**Improving communication using PBL plus: Observing excellent and poor medical interviewing**

*Jo Hart*, Chris Harrison, Caroline Boggis, Lis Cordingley (University of Manchester, Manchester Medical School, Rusholme Academic Unit, Manchester M14 5NP, United Kingdom)

**Background**: Effective medical interviewing depends upon the development of good communication skills. The opportunity to observe experts carrying out a medical interview using a specified template is an effective way of learning from others as it gives students a framework to understand 'why' as well as 'how' particular skills are used.

**Summary of work**: Students (n=282) watched professionally made video clips (PBL plus) of two versions of a medical interview conducted with and without a framework, with follow-up clips of of patient and doctor's reflections on each consultation. Students were then assessed in relation to their recognition of key aspects of the skills demonstrated.

**Summary of results/Conclusions**: Students successfully identified aspects of communication they had learnt in formal communication skills sessions (almost 60% giving correct answers for all questions), but few students (less than 2% of responses) explicitly linked their answers to the frameworks they had learnt. Data linking identified aspects of excellent and poor communication to skills exams performance provide additional interest to these findings.

**Take-home messages**: Demonstrating good and poor examples of clinical communication using a patient's story that students are familiar with enables students to successfully identify communication elements.

**7G/SC5**

**Evaluating attainment of communicative goals**

*Dorothé Vessies*, John Wiering* (Wenckebach Institute, University Medical Center Groningen, Hanzeplein 1, Postbus 30.001, Groningen 9700 RB, Netherlands)

**Background**: Several instruments are available (Maas-Globaal) to measure communicative techniques in medical consultations. Van Dulmen et al. have expressed the need for an observation instrument in which these techniques are differentiated according to the communicative objectives of the consultation. In addition, an observation instrument should be capable of evaluating whether communicational goals have been attained. The Maas-Globaal instruments measure the use of the various interviewing techniques doctors need for professional conversations. Our hypothesis is that the use of these techniques is not sufficient to insure attainment of the communication objective. We started research on this topic.

**Summary of work**: In our teaching of communicative skills we experience that residents use various techniques, but hardly check their communicative goals. Literature on this topic shows that doctors hardly check their communicative goals have been attained. The Maas-Globaal instruments measure the use of the various interviewing techniques doctors need for professional conversations. Our hypothesis is that the use of these techniques is not sufficient to insure attainment of the communication objective.

**Summary of results**: The use of various interview techniques is not sufficient to insure attainment of the communication objective in medical communication.

**Conclusions**: Only when the patient has explicitly rephrased the information the doctor can be sure that the goal of the communication has been reached.

**Take-home messages**: Explicitly rephrasing the information the doctor has given should become a common way of checking the attainment of communication goals in practice.
**7H/SC2**

Medical education to meet workforce needs in Australia: more than coping with the numbers  
*Allan Carmichael*, Martha McCall *(Medical Deans Australia and New Zealand, c/o Medical Foundation Building, University of Sydney, Sydney 2006, Australia)*

**Background:** Student numbers in Australian medical schools have been dramatically increased in response to local and global workforce shortages. Compared with approximately 1600 commencing students in 1998, by 2002 there were 1840 by 2002 and 3420 enrolled this year. These increased numbers have been distributed amongst the 10 Medical Schools which existed before 1998, with further allocations to 9 new Schools set up since that time. While these numbers will ultimately meet workforce needs, there are immediate problems in identifying adequate numbers, distribution and quality of clinical placements. Further, new Schools were developed in an ad hoc manner without regard to existing placement arrangements.

**Summary of work:** In response, Medical Deans Australia and New Zealand has undertaken a national study to identify current and future placement requirements and capacity.

**Summary of results:** All placement types are under pressure but General Practice is most affected, especially in outer urban, rural and remote areas where there are major workforce shortages.

**Conclusions:** The study has led to additional initiatives and resources being defined to provide students with quality placement experiences for the required breadth of knowledge, skills and attributes and in particular to positively consider General Practice as a future career option.

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**7H/SC3**

Public health system and universities: alliance for training of good professionals  
*T Campos*, A Romano, A Torres *(Regional Ministry of Health Government of Andalusia, Avda. Innovacion s/n Edificio Arena 1, Seville 41071, Spain)*

**Background:** In Spain universities do not have their own health centres. For the practical clinical training of students of the healthcare profession, the corresponding alliances between universities and the health system must be established as set out in current legal regulations. At present there are a small number of teachers who simultaneously practice healthcare and teaching. Likewise, students get their practical clinical training in certain hospitals and health centres.

**Summary of work:** The inadequacy of the system has been confirmed and in order to improve it the definition of a new model has been promoted where the creation of a clinical tutor will allow most health professionals to take part in student training. Training in teaching methodologies has been planned for these professionals as well as recognition of their activity. The healthcare network has also been made available for training purposes. Coordination between universities and the health system will be carried out via an annual collaboration plan in which all issues pertaining to pre and postgraduate training programmes will be agreed, as well as joint research. Furthermore, this initiative will provide the necessary structures in order to adapt to the European Space for Higher Education study plans, which, for medicine, contemplate an entirely clinical academic course and signify a notable increase in practical training for nursing and physiotherapy.

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**7H/SC4**

Is there something rotten in the state of Germany? – What are we up to in gender equality?  
*J Dahmen*, H Doll, O Polacsek, C L Schlett, M Hofmann, M Butzlaff *(University Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten 58448, Germany)*

**Background:** Gender equality in health science and how to address gender issues in medical curricula is a big topic during recent educational debates and AMEE conferences. But how does education and gender influence today’s working conditions and career opportunities?

**Summary of work:** Based on the University Witten/Herdecke Alumni-Database (n=264) we compared qualification, job position and satisfaction classified by gender (p-values using chi-square, t-test and multivariate analysis).

**Summary of results:** Male UWH Alumni earned more often a PhD (57% vs. 41%, p=0.009), had more often finished residency (52% vs. 31%, p=0.0009) and were more often in a leading position (40% vs. 11%, p<0.0001). An increase of these differences was observed in alumni with children. Adjusting for gender, children, family status and time after graduation, males were associated with an 8-fold increased probability for a leading position (OR: 7.99, p<0.0001), whereas time was only associated with a moderate increase (OR=1.3; p<0.0001), children with a decreased probability (OR=0.25, p=0.0114). Female alumni rated overall work situation worst (2.6±1.1 vs. 2.2±1.0, p=0.001).

**Conclusion:** Gender equality in medical science is a relevant socioeconomic factor in western societies. Not only overall data on career differences seem to be important to the debate, but also individual satisfaction seems to be affected by gender issues.

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**7H/SC5**

A pilot of a Trusted Agent platform for secure, real-time data sharing  
*Robert Galbraith, David Watt*, Madhav Iyer, Kenny Yu, Rita Mohsin, Kevin Caldwell *(Federation of State Medical Boards, P.O. Box 619850, Dallas, TX 75261, United States)*

**Background:** Physicians in the United States must aggregate and submit educational and training data from diverse sources for licensing and privileging requirements. This is often time-consuming and redundant, taking weeks or months to complete. An alternative to manual data aggregation is a secure, automated technology to repurpose and share data in real-time i.e., The Trusted Agent.

**Summary of work:** The National Board of Medical Examiners (NBME) and the Federation of State Medical Boards (FSMB) have piloted this concept using a secure infrastructure for automated sharing of data across multiple organizations. This allows instant access to data, and is “trusted,” through strict business rules, not to compile or reveal a specific individual’s data without that individual’s authorization.

**Summary of results:** Since October 2006, approximately 4,000 medical license applicants have registered with the Trusted Agent, with almost 3,000 applications now completed. The shortest time to complete the process of compiling, reviewing and delivering the completed application is eight minutes.
Conclusions: Surveys of applicants have indicated that the system works well, and the Trusted Agent process reduces workload on applicants, provides timely results and maintains high levels of security and confidentiality.

Take-home message: This Trusted Agent infrastructure offers an efficient and cost-effective method to enable participating health care organizations to collaborate in the secure electronic exchange of sensitive data.

7I/SC2
Responsibilities of simulated patients in undergraduate medical education: Evaluation of stakeholder generated guidelines
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Background: At Imperial College London, simulated patients (SPs) are used extensively in medical education. SPs work with students in sensitive and emotionally charged situations and make high stakes judgments. Extending SP roles and a quality assurance review were drivers for clarifying responsibilities of SPs and stakeholders (students, tutors and administrators) in SP teaching. We worked with stakeholders to develop a set of guidelines. The study reports on their evaluation.

Summary of work: Respondents appreciated the guideline’s systematic approach and that all stakeholders play a part in the success of teaching. SPs valued the commitment to their training in role portrayal and feedback. Students appreciated the promotion of learning partnerships. Recommendations were made to further streamline to document.

Conclusions/Take-home messages: Stakeholder generated guidelines have proved beneficial. At minimum, the guidelines provide a shared understanding of responsibilities and demonstrate a commitment to this important and unique expertise. As standards are established for technology based simulators, this study reflects our approach to addressing similar issues with human simulation.
E-learning solutions for training Standardized Patients

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**Background:** E-learning is an umbrella term for on-line, web-based and educational technologies for teaching, training and instruction. These technologies can help solve various logistical issues by enabling educational content to be delivered to motivated learners in a timely and engaging manner. One innovative use of e-learning is to train standardized patients (SP) for role performance and assessment activities by posting training documents, graphics and videos on the internet for “anytime, anywhere” access.

**Summary of work:** The purpose of the current validity-related study was to assess whether the interaction of SP and examinee ethnicity affects data gathering (DG) and communication and interpersonal skills (CIS) scores on the Step 2 Clinical Skills (CS) component of the United States Medical Licensing Examination (USMLE) sequence.

**Conclusions:** The challenge of summative exams is to evaluate the performance of the participants. Since the discriminatory power of OSCE stations represents one quality factor of an OSCE, the assignment of trainer-trained SP is necessary to gain valid OSCE results.

E-learning is a promising approach to distributing educational and training content to motivated SPs. It can standardize the training process and maximize staff resources.

Trainer-trained versus self-trained simulated patients in OSCE - what makes the difference?

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**Background:** OSCE (Objective Structured Clinical Examination) is a well-established method to assess students' learning outcome. Standardized patients (SP) are trained to play roles in settings. We evaluated if the effort to appoint a SP trainer leads to an increase of quality.

**Summary of work:** We created an OSCE station with a defined task, role script, checklist and questionnaire and integrated it in a regular OSCE. We handed the instructions to all SPs. Self-trained and trainer-trained SPs played blinded to the students and the examiner. The performance of 177 students was analyzed.

**Summary of results:** There was a significant difference from the perspective of the examiner in contrast to the students. We found a significant difference regarding the checklist scores with better results with self-trained SP (Mann-Whitney-U-Test, p < 0.01). Discriminatory power of the OSCE station was very low (r = 0.18, p < 0.1) with self-trained and good (r = 0.40, p < 0.01) with trainer-trained SP.

**Conclusions:** The challenge of summative exams is to evaluate the performance of the participants. Since the discriminatory power of OSCE stations represents one quality factor of an OSCE, the assignment of trainer-trained SP is necessary to gain valid OSCE results.

The impact of standardized patient and examinee ethnicity on high-stakes clinical skills examination performance

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**Background:** Performance-based assessments that use standardized patients (SPs) to assess the clinical skills of medical students need to address validity-related issues that traditional assessment formats typically do not. One such issue is whether an SP's ethnicity unfairly influences the scores of students of different ethnic backgrounds. That is, accounting for case content, students' clinical skill levels, and SP stringencies, are scores higher (or lower) for examinees who encounter an SP of the same ethnicity as their own? The purpose of the current validity-related study was to assess whether the interaction of SP and examinee ethnicity affected data gathering (DG) and communication and interpersonal skills (CIS) scores on the Step 2 Clinical Skills (CS) component of the United States Medical Licensing Examination (USMLE) sequence.

**Summary of work:** Analyses of covariance were conducted separately for cases with sufficient numbers of ethnically diverse SP/examinee combinations. For each case, two sets of analyses were run, one with DG scores and one with CIS scores as the dependent variable.

**Summary of results/Conclusions:** Preliminary results for one case indicate that examinees do not benefit (or suffer) from encountering an SP of the same ethnicity as their own. These results are encouraging and provide support for the validity of Step 2 CS scores. Results for the remaining cases and implications for other large-scale, high-stakes performance-based assessments with diverse SP and examinee populations are discussed.

Interrater reliability of standardized patients in the Dutch Clinical Skills Assessment (DCSA) for foreign medical graduates

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**Background:** Although literature suggests that standardized patients (SPs) can be trained to score candidates in OSCEs, there is still scepticism and discussion whether SPs are able to score in high stakes examinations. The opinion is noted that high stakes examinations should be scored by a physician. To control the expenses it's very important to study whether it's feasible to train SPs for high stakes examinations. The objective of this study was to determine the height of interrater reliability between SPs and between SPs and physicians.

**Summary of work:** The DCSA contains ten cases with SPs. At each station checklists and global rating scales on history taking, physical examination, communication and professional behavior are completed. For this study OSCEs were scored independently by SPs and physicians. Stations were scored by the SP who was simulating in that station, as well as by a SP who was observing that station.

**Summary of results:** Data analysis is in progress. Results of the first candidates indicates high agreement between SPs and observers. Four candidates were scored on the first date of examination. On history taking and physical examination, 95% of the scores were corresponding.
7J/SC1
First year specialist trainees’ engagement with reflective practice in the e-portfolio
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Background: Doctors in specialist training posts in the Mersey Deanery are required to complete an e-portfolio to document their competence and to stimulate reflection on their experiences. This study explores how they engage in reflective practice and in particular how they utilise their learning portfolio to document evidence of this.

Summary of work: Thirty participants consented. A modified Delphi technique was used to develop a grading system to score levels of reflection. Transcripts of the reflective entries were then analysed using a qualitative approach which involved coding and categorising the data.

Summary of results: The level of reflection scores showed a wide variation in both the quantity and quality of reflection. Of particular note in the qualitative data analysis were themes relating to clinical knowledge and skills, learning in practice, communication, feelings, types of learning experienced reflected on and wider aspects of medical practice.

Conclusion: Further research is needed to explore factors that enable or inhibit the use of the e-portfolio for reflection and whether recorded reflection is a true picture of the cognitive process involved.

Take-home message: There is variation in the extent to which doctors both engage in and document evidence of reflection.

7J/SC2
Evaluation of a portfolio based student appraisal system
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Background: The e-portfolio project at Queen Mary has created a robust and thoroughly evaluated appraisal process suited to meeting the GMC requirements for students to receive regular, structured feedback. An e-portfolio was configured for student use in WebCT. Innovative aspects included guided reflective exercises, and a career framework based upon a newly developed website named Career Diagnosis.

Summary of work: Following a successful initial trial, in October 2007, 50 Year 1 MB BS students were recruited to be trained in the use of the e-portfolio software and to undertake two individual tutor appraisals. Evaluation data were collected at three points: following training and initial use, post-first and second appraisals from both students (via on-line questionnaires) and appraisers (via group interview and questionnaire).

Summary of results: Initial data indicate that students accept and value the importance of portfolio keeping and the appraisal process. Also the need to embed the e-portfolio within existing curriculum tasks has been reinforced and that pedagogical considerations rather than software issues should remain paramount.

Conclusions: E-portfolios can be a key tool in learning and formative appraisal but their success hinges upon the need for meticulous planning and on-going supported guidance for students which acknowledges both their stage of development, knowledge base and styles of learning.

7J/SC3
Evaluating ePet: the advantages of an open source eportfolio
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Background: The academic community has identified using portfolios as a means of measuring student attitudes to learning. ePet, a generic electronic portfolio originally developed at Newcastle University, has been successfully implemented as a tool to facilitate personalised learning in undergraduate MBBS at St George’s University of London (SGUL).

Summary of work: ePet was intended for personalised learning but needed to be further developed and many new features added to meet the institutional requirements. This is where its open source origins have been invaluable; customisation of the portfolio to meet new requirements from staff was relatively straightforward. Some key principles have been used to examine staff and student feedback, student usage and frequency of accessing different tools, highlighting some design issues.

Conclusions: Due to the flexible nature of ePet, it has been easily adapted and improved with the integration of new portfolio tools for the educational purpose for the institution. These include templates for reflecting on educational performance, discussion with personal tutors, and reflective practice assignments.

Take-home messages: The component structure of ePet makes it an adequate tool for the design and integration of additional features, to meet fast evolving requirements, without major changes to the core of the portfolio.

7J/SC4
NHS e-Portfolios – evolution of product and purpose
Alex Haig*, Tim Brown, Karen Beggs (NHS Education for Scotland, The Lister, 11 Hill Square, Edinburgh EH8 9DR, United Kingdom)

Background: In August 2005 NHS Education for Scotland (NES) developed a bespoke e-Portfolio to pilot with 400 first year Foundation doctors. Within two years 20 versions of the software were adapted to serve the needs of over 22,000 medical trainees across the UK, as well as dentists and pharmacists within Scotland.

Summary of work: It was soon clear the rapid expansion could no longer be sustained by the existing platform. Drawing upon extensive quantitative and qualitative evaluation, the entire system was redesigned for launch in August 2008.

Summary of results: Pre-launch testing proved the new system to be robust and flexible enough to meet the demands of a large and diverse array of user groups.
Conclusions: There is an increasing necessity for e-portfolios to exchange data with other (primarily learning and HR) systems/databases and the potential effort required should not be underestimated. Whilst initially conceived to deliver summative assessment, NES e-Portfolio quickly developed to support reflective practice and integrate with e-learning. Increasingly the projects are linking with or being adopted by undergraduate schools and the system is being considered for extension to revalidation/recertification.

Take-home messages: A generic e-portfolio platform can meet the assessment, reflection and learning requirements of a diverse range of health professionals; comprehensive planning, end-user involvement and robust piloting are key to success.

7J/SCS
Development of a generic ePortfolio: process and outcome
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Summary of work: Substantial expansion in the user-base and diversity of requirements of an existing electronic portfolio system necessitated the production of a generic ePortfolio software and database architecture. Extensive analysis of the existing system led to the core basis of a generic ePortfolio system suitable for assessed and reflective practices in a broad range of user contexts, the key elements being: (i) 3 user roles (trainee, supervisor, and administrator), (ii) a user "location" tree, and (iii) the mechanism for assigning, completing, and viewing entered data.

Take-home messages: A generic ePortfolio system can be elucidated by stripping the functional concepts to their core features; an object-orientated model can facilitate extensive user-group specificity.

Research in Medical Education Papers
7K
Postgraduate education

7K/RP1
Using Bayesian Network analyses on practice outcome data to optimize planning for post-graduate clinical education or continuing professional development strategies
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Research Question: The goal of this study was to demonstrate the use of Bayesian Network analyses in identifying variations in practice patterns which may reflect unmet educational needs for trainees and recently licensed physicians, based on the examination of their actual practice data.

Context: The use of Bayesian Networks in analysis of complex and uncertain environments is well known. In health services and in health professional training, there is no doubt that the environments where these programs take place are complex. They are complex politically, fiscally, in management issues, and in measuring quality of care and its outcomes. Yet, increasingly, opportunities exist to access de-identified clinical practice data. From these data, further analyses may reveal temporal patterns of clinical practice behaviours that may reflect unmet educational needs or gaps that should be addressed during or before this period of transition. An optimal selection of 'needs' could lead to more valid and successful educational interventions and management strategies to facilitate improved clinical outcomes. Any educational intervention, if not validly planned, may lead to ineffective interventions for the recipients and for the institutions seeking to improve clinical care. Thus, trying to anticipate the optimal 'attack points' for an educational intervention, could yield a better combination of remedies to deal with the unmet needs or gaps, before an empirical demonstration project would be undertaken. This would increase the probability of an optimal impact.

Methods: To illustrate how Bayesian Networks can be used to identify challenges that can be turned into educational opportunities, we analyzed the claims data generated through clinical practice, for between 4 to 7 years post-licensure, by 865 primary care physicians. These individuals had entered practice from residency for the first time in Quebec between 1990 and 1996. We set out to identify patterns indicative of significant problems for these recent graduates in adapting to the new reality of practice. We used Bayesian Network analysis on this cohort of physicians' payment data from Quebec's Medicare payment database on a number of practice variables, and searched for major variations in these data sets. The variables documented in the Network were physicians' age, gender, institution of graduation, continuity of patient care (COC), total number of days worked per year (DAYS), total number of patient visits per year (VISITS), and geographic location (GEO) of practice activity. Variables COC, DAYS and VISITS are indicators of productivity that we considered as outcome measures. As expected, the claims data exhibited distinct patterns by age and sex. In addition, the analysis identified significant practice trends and variations around key variables such as the COC, productivity, including VISITS, DAYS, and GEO, particularly during the first four years of practice.

Results: In summary, the results showed a tendency for practice patterns in DAYS, COC and GEO to converge with increasing time in practice. As a result, the variations in claims patterns amongst different age-sex groups decreased slowly through time.

Discussion: These findings demonstrate how major sources of variance and loss of practice efficiency and quality of care can be identified using Bayesian Network analyses. It is essential to identify these trends and practice variations so that they can then serve as the bases of the design of interventional plans to speed up the stabilization of primary care practice patterns, and serve as foci for post-graduate education and for planning continuing professional development programs. We have shown how these types of analyses of existing practice data, from routinely available databases, can be applied to the planning of quality and safety issues leading to efficient interventional strategies before educators embark on empirical demonstrations of proposed programs.

Conclusion: The use of probabilistic reasoning methods such as Bayesian Networks has great promise as a planning device to help formulate educational interventions that will improve the efficiency of patient care and smooth personal transitions into practice for recently licensed physicians, based on actual practice data and true relationships existing in this data set.

Validating the Postgraduate Hospital Educational Environment Measure (PHEEM) by applying a combination of criteria in factor analysis

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Research Question: The aim of this study was to validate the PHEEM. Although this has been done before in other studies, literature shows that the validation of educational instruments, in particular the employment of factor analysis, can be improved in many instances. Therefore, we examined whether the items of the PHEEM were classifiable into interpretable, theoretically sensible and practically useful dimensions, following the recommendations of factor analysis experts. Context: Recently, the importance of the educational environment for student learning has become acknowledged increasingly.

Perceptions of the educational environment have been shown to influence learning outcomes. To be able to optimise the quality of the educational environment and enhance students’ learning processes, it is essential to identify the educational environment characteristics conducive to learning. Over the past ten years, many (mainly qualitative) studies into the characteristics of the clinical educational environment have been performed, resulting in many instruments, for example the PHEEM1. Unfortunately, several shortcomings can be identified in the quantitative studies that were subsequently performed to validate these kinds of instruments. Although factor analysis should be the first step in the validation process2, it was often not performed. In those studies, in which factor analysis was actually applied, it was often not performed thoroughly. To give some examples: researchers I) did not report criteria used; II) did not or not completely describe resulting factors; or III) based outcomes on just one criterion. The criterion chosen can largely determine the outcomes, as can be illustrated from two PHEEM studies with widely divergent outcomes. In these studies, only one criterion was applied, with the chosen criterion being different. One study led to a 1-factor solution, the other to a 10-factor solution. Considering the divergent outcomes, it seems better to combine several psychometric and interpretability criteria as factor analysis experts recommend. This method may yield more replicable dimensions, which are universally applicable, i.e. applicable in educational environments that differ from each other.

Methods: The PHEEM was completed by 279 clerks. The PHEEM consists of 40 items (Likert-type: 1 = totally disagree; 5 = totally agree). The original PHEEM-authors distinguished three scales – perceptions of a) role autonomy; b) teaching; and c) social support. We performed Principal Component Analysis with varimax rotation, combining three psychometric criteria: 1) scree plot; 2) eigenvalues > 1.5 and 3) components explain minimally an approximate additional 5% of the variance. Subsequently, we applied four interpretability criteria, which will be specified in the presentation. To objectify the interpretation process, 8 medical education experts independently interpreted the factors of all relevant solutions and, subsequently, discussed these together to reach agreement on the interpretations of the factors and the best factor solution. Confirmatory factor analysis was performed to verify the original scale structure.

Results: The scree plot yielded a 1-factor solution, the eigenvalues criterion a 5-factor and the amount of explained variance criterion a 3-factor solution. We investigated the interpretability of the 2 through 5-factor solutions. The 3-factor solution was the best solution. The dimensions found were learning content and coaching, beneficial affective climate and external regulation. Confirmatory factor analysis disconfirmed the original scale structure.

Conclusion: The current method yielded three interpretable and practically useful dimensions. Besides, they were theoretically sensible, as they corresponded with three learning functions essential to high quality learning. This strengthens our findings and suggests that we found generally applicable dimensions. However, replication studies are needed to verify our results. We conclude that the current combination of criteria was useful for validating the PHEEM. Therefore, we recommend applying this sophisticated method in validation studies of comparable instruments.


Stress during ICU medical crises: when a lot is too much

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Research Question: Our objective was to gain a deeper understanding of the perceived effects of stress on performance by health care professionals during ICU medical crises, defined as events requiring the immediate intervention of the ICU team for the resuscitation of an unstable patient. Medical crises are believed to represent emotionally-tense periods where stress could lead to avoidable medical errors. We were interested in answering three specific questions: 1. What are the potential stressors encountered by health care professionals during ICU medical crises? 2. In which circumstances are these most likely to affect the individual or team performance? 3. How do individual and team responses to stressful conditions evolve through a crisis?

Context: Potential stressors encountered by ICU nurses and physicians have been previously reported in the literature3. In other fields, stress has also been associated with impaired performance and with negative emotions such as anxiety. Increased concerns regarding patient safety and ICU staff well-being justify concrete efforts to understand the circumstances in which potential stressors impact on health professionals and the nature of their collaborative relationships during medical crises. Reactions to potential stressors are highly variable. Findings from the cognitive psychology literature suggest that during the subjective appraisal of an event, potential stressors are considered as demands assessed in relation to the resources available. Individuals will choose specific coping strategies to resolve a problem according to the perceived balance between the demands and the resources4. This framework was used to analyze our data.

Methods: We conducted 32 semi-structured interviews of ICU nurses, staff physicians, residents, and respiratory therapists. Individual interviews were chosen to provide to all participants a safe environment to freely express their views regarding stress and team interactions. The interviews were audiotaped and transcribed, and the analysis was performed using an inductive thematic methodology.

Results: Although similar amongst participants, the potential stressors reported during medical crises were not all equally problematic. The life at stake, the multiple concomitant tasks to accomplish, and the heavy sense of responsibility towards the patient were expected in every crisis, but dealt with efficiently, because health professionals were self-confident individuals who knew they could rely on their colleagues’ help. Problem-solving strategies were perceived as effective mechanisms to cope with these events.
However, the unknown, the lack of patient improvement, persistent unpredictable changes, or unhelpful colleagues raised doubts about participants’ individual or collective ability to resolve the crisis. This could lead to the expression of distress by the health professionals. Such distress was then quickly contagious to the other members of the team. This collective anxiety was perceived as very disruptive to teamwork. Participants advocated for better strategies, such as self-control or positive reappraisal, during ICU crises to prevent team performance decline.

**Conclusion:** This study revealed that ICU health professionals generally perceived that: 1. potential ICU stressors led to individual distress during a medical crisis only when the demands were higher, the resources lower, or the outcome worse than expected; 2. team disruption occurred because the manifestation of individual distress was quickly contagious to other team members whose resources assessment was partially dependent on their colleagues; 3. individual and collective reactions were dynamic processes based on the constant reassessment of the situation and of other team members’ reactions to the events. These findings have important implications for team training in acute care settings. Current training programs (e.g., the Crisis Resource Management programs) are mostly based on problem-solving strategies. In distressful situations where the degree of collective anxiety is high, these methods were judged insufficient by our participants. Either the appropriate use of alternative emotional coping strategies or the emotional intelligence principles could be taught to health professionals to respond more effectively to stressful crises.


7K/RP4
The impact of institutional due process standards on the timing and frequency of academic interventions of residents

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**Research Question:** Residency program faculty and program directors are generally reluctant to formally criticize resident (trainee) performance for many reasons. As a result, program directors and key decision makers tend to delay academic interventions due to their perceived lack of documentation and onerous reporting requirements of formally imposed statuses such as “Probation.” Subsequently, residents who require interventions to improve academic performance sometimes receive the intervention late in training or not at all. Can process standards for academic remediation and due process impact the timing and frequency of critical feedback given to medical residents in training? Objectives included: 1) To create a process that is perceived as “safe” by faculty and program directors to encourage honesty and proactive critical evaluation; 2) To provide academic interventions (remediation) earlier in training; 3) To provide a system that encourages more frequent feedback and critical assessments; 4) To determine if thresholds for poor performance are lower, as measured by numeric rankings, under a streamlined process.

**Context:** Revised processes were developed and implemented in January, 2006. Residents enrolled in one internal medicine residency for the twelve months pre-implementation (Group A) were compared to residents enrolled in the same program twelve months post-implementation (Group B).

**Methods:** Other than the change in process, no other variables were altered. The faculty serving on the Clinical Competence Committee (CCC) were provided faculty development regarding the new process. This committee is responsible for determining whether or not formal academic interventions should occur. Academic interventions in each cohort were identified to determine frequency of interventions and timing of intervention as determined by the chronologic month of the intervention. All preliminary residents and combined track residents were excluded from the cohort.

**Results:** Group A consisted of 76 residents. Over the twelve month observation period (pre-implementation), eight residents (10.5%) were given an academic intervention of either a Remediation or Probation. Three of the eight residents had also been given an intervention prior to the observation period. The chronologic month of residency was identified for each resident’s first intervention, which indicated a mean of 12.13 months with a range of 1-25 months. Group B consisted of 85 residents, of which 25 (29.4%) were given an academic intervention. The mean month of the first intervention under the new process was 9.63 months, with a range of 2-25 months. Percentile rank of national in-training examinations for the PGY-1 year was compared. Residents receiving interventions in Group A had a mean percentile rank of 39.29, compared to a mean percentile rank of 41.70 for Group B. Residents receiving no academic interventions had a mean percentile rank of 53.31.

**Conclusion:** Both the timing and the frequency of interventions were increased under the new process. There was also a significant difference in numeric ranking as measured by percentile rank of in-service examination performance between the intervention and non-intervention groups. Questions: 1) Have faculty perceptions and behaviors changed as a result of a more streamlined process? 2) Is the program being more effective in providing necessary feedback and interventions that will yield improvements to identified academic deficiencies? 3) Has the threshold for performance, as measured by numeric ranking on clinical rotation evaluations, been lowered under the new process? 4) Do residents receiving interventions feel they are provided honest and critical feedback of their performance? The impact of due process standards on the timing and frequency of academic interventions of residents will have their remediation plan reviewed to identify the deficient core competency identified and determine if there is a correlation between core competencies and certain academic deficiencies and/or misconduct.

7L The junior doctor and student as a teacher

**David Whitford* (RCSI - Medical University of Bahrain, PO Box 15503, Adliya 15503, Bahrain)**

**Background:** Hospital residents are widely used in the teaching of medical students and this is thought to be beneficial for both the residents and students and improved by training the residents to teach. Although family medicine residents become involved in teaching medical students, there are few reports of structured schemes to facilitate this.

**Summary of work:** We have established a 2 week community attachment for junior medical students that is delivered by family medicine residents. The main objectives of the attachment are for the medical students to gain clinical experience in history taking, examination and communication skills and for the residents to be trained in clinical teaching.
Students attend the clinics of 4th year residents and are supervised in gaining practical experience. They also attend case discussions and teaching sessions run by the residents.

**Summary of results/Conclusions:** Residents gain by being taught how to teach and having the opportunity to practice these skills. Students gain by increased clinical exposure. There are, however, tensions between the clinical responsibilities of residents and teaching medical students.

**Take-home messages:** Family Medicine residents are an under-utilised resource in medical student training. The needs of both medical students in receiving training and residents in learning to teach are well served by this approach.


**7L/SC2**

Are junior doctors too busy to teach?

**Taruna Bindal*, David Wall, Helen Goodyear (United Kingdom)**

**Background:** The General Medical Council states doctors have educational obligations in training and supervising less experienced colleagues. As working hours decrease due to European Working Time Directive (EWTD), can juniors be clinical educators?

**Summary of work:** UK regional questionnaire study to paediatric specialist registrars (SpRs) exploring teaching activities and medical education training.

**Summary of results:** 92% responded (122/133). A majority taught junior colleagues and students, (97% and 92% respectively). 41% SpRs did 1 hour per week of daytime teaching but half this at night. Teaching was at the bedside (96%, 117), through lectures (90%, 110) and on ward rounds (81%, 99). Factors inhibiting teaching included being busy (68%, 83), shift patterns (48%, 58) and inexperience (16%, 20). 55% had formal education training most commonly 'Teach the Teacher' course. Mandatory training (61%, 74) and themed regional SpR training days on education (61%, 74) were felt the best ways of developing SpRs as educators.

**Conclusion:** Currently SpRs make a valuable contribution to education. Factors which inhibit teaching will however impact more as doctors’ hours reduce to 48 per week by 2009 to meet EWTD.

**Take-home messages:** Junior doctors need to be equipped with skills to teach in stressful and busy environments.

**7L/SC3**

Training 800 residents to transverse competencies and documenting its impact

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**Background:** Although residents are asked to supervise clerks and younger colleagues during clinical activities, little time is usually devoted to train them to do so. Examples of deficiencies are: being unaware of the clerks’ objectives for the rotation or not knowing how to give feedback. Therefore, clerks and residents may both feel uncomfortable and, consequently, tactless attitudes to even intimidation behaviours may be noted.

**Summary of work:** We divided 800 residents into 20 groups and gave them a one-day workshop on the roles of scholar: good teacher and lecturer, using learning objectives, efficient clinical supervision, giving feedback, detecting problem students, dealing with intimidation. Residents of all levels and different programs were mixed. Impact of training was assessed by pre- and post- tests using 14 clinical case scenarios, answered by ~ 300 residents.

**Summary of results:** Average scores obtained before and after training were respectively 51% and 61%. A questionnaire evaluating self-confidence with regard to the treated topics showed major improvement after training. Residents mentioned that these teaching sessions should have been held earlier during their training. Results of a late post-test three months after the sessions will be available and used to improve the content of the workshop which will become mandatory early in the residency program.

**Conclusions:** Introducing an award not only sent a positive message about teaching but also served to thank and reward the Registrars for their good work.

**Take-home messages:** Peers form a rich and formidable source of knowledge and by virtue of working closely with the junior staff, exert a tremendous influence on their professional and personal development. It is important to nuture this precious resource and recognise and reward it appropriately.

**7L/SC4**

Nurturing the teachers of the future - are we doing enough?

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**Background:** Peer group teaching has been part of medical training for years. With changes in medical training, it has become very important to formally incorporate this within the curriculum. Evidence of being able to teach is a pre-requisite for trainees aspiring to be consultants.

**Summary of work:** As part of our teaching programme, Registrars are encouraged to take part in teaching, both at the bedside and in classrooms. To reward excellence in teaching at that early stage, we introduced an award “Best Registrar Teacher of the Year”, which included a certificate and £500. Junior doctors were encouraged to nominate the best teacher amongst the Registrars, in a secret ballot held in June. The person with the maximum nominations was the winner. Two registrars shared the prize out of seventeen nominees.

**Conclusions:** Introducing an award not only sent a positive message about teaching but also served to thank and reward the Registrars for their good work.

**Take-home messages:** Peers form a rich and formidable source of knowledge and by virtue of working closely with the junior staff, exert a tremendous influence on their professional and personal development. It is important to nuture this precious resource and recognise and reward it appropriately.

**7L/SC5**

Teaching students how to teach

Mairead Boohan* (Queen’s University Belfast, 73 University Road, Belfast BT7 1NN, United Kingdom)

**Background:** Second year medical students at QUB are offered a Student Selected Component entitled “Learning to Teach”. Twenty five students have taken this module annually since 2004. Topics covered include learning theories, principles of effective teaching and microteaching.

**Summary of work:** At the end of the module students complete a 25 item evaluation questionnaire. To determine the long-term benefits of the module, focus groups were conducted in 2008. Separate focus group were held for each cohort.

**Summary of results:** Module evaluation results indicate that 85 percent found the module intellectually stimulating. Seventy six percent reported that they have acquired skills which they will use in their future career.
Focus group data indicate that students have used the knowledge and skills acquired during the module to enhance their learning strategies. The module has encouraged students to consider the role of the physician as teacher.

Conclusions/Take-home messages: An unexpected outcome was the impact that the module had on students’ approach to their learning. Teaching medical students how to teach is still a relatively new concept. Educators face a number of challenges including identifying strategies to engage students not interested in developing a major teaching profile in their future career.

7L/SC6
Assessment of residents’ educational needs for clinical teaching to interns in Iran
S Asefzadeh*, M Rafati (Qazvin University of Medical Sciences, Shahid Bahonar Ave, Qazvin 3498548, Iran)

Background: Residents’ perception of their role in teaching undergraduates in the clinical setting highlights a need for training programs designed to develop capable teachers.

Objective: To assess the residents’ needs in clinical teaching in order to prepare an educational module to improve their clinical skills teaching.

Summary of work: All 3rd and 4th year residents of Qazvin Medical School in 2006-2007 participated in this survey. The data were gathered using a self-administered questionnaire.

Summary of results: In total 127 residents participated in this study. Of these, 22% were training in pediatrics, 18.5% in obstetrics & gynecology, 11.1% in surgery, 25.9% in internal medicine and 14.8% in anesthesiology. Of the total, 78% had a feeling of satisfaction in teaching interns and 66% thought that they might be more compliant than their attendings in teaching roles and they said that the teaching process improved both their clinical knowledge and practice. Their average daily teaching work was 2¼ hours, where 71% believed that their educational skills should be improved through organized courses. They suggested that their teaching skills should be assessed in their annual promotion exams.

Conclusion: Based on the findings, a book of Resident–Intern clinical teaching was designe, tested and published to be used as a guide in empowerment of the residents in clinical teaching.

7M/SC1
UK medical and dental schools use of UKCAT data: the first two years
Jane Adam, Jon Dowell*, Lyndon Cabot on behalf of UKCAT Consortium (Dundee University, Tayside Centre for General Practice, Mackenzie Building, Kirsty Simple Way, Dundee DD 248F, United Kingdom)

Background: The UK Clinical Aptitude Test (an intelligence test of verbal, numerical and other reasoning) was introduced in the 06/07 admission cycle by a consortium of 23 medical and 8 dental schools. A total of 18,549 candidates took UKCAT in 06, 20,112 in 07. Each school was free to decide how to use applicants scores.

Summary of work: A telephone survey was conducted to ascertain how results were used in the first year. Key informants from all schools provided information suitable for a content analysis. This is being repeated for year two.

Summary of results: UKCAT use varied from none (3), for interview selection (24) or for offer decisions (19) [note could be used in more than one way]. UKCAT was used to aid borderline decisions (24) and within weighting systems (10). Some other selective uses were applied, for instance to widen participation. It appears greater weight will be placed on UKCAT in the second year.

Conclusions: Given the wide range of selection techniques used historically and the current absence of data on predictive validity, a diversity of use is no surprise but highlights many issues. However the process has also led to the first collaborative effort to compare entry and performance data across the UK.

7M/SC2
From equality to fairness: changing the philosophy of medical applicant assessment
Kenton Lewis*, Jen Poyser, Deborah Bowman (St George’s, University of London, Widening Participation Unit, Cranmer Terrace, London SW17 0RE, United Kingdom)

Background: A key strategic aim at St George’s is a commitment to offering medical training to as broad a cohort of students as possible. To this end, we have developed a ground-breaking admissions/selection policy aimed at increasing the number of students from under-represented sectors of society (ethnic minority groups, low income families, state funded education). By recognizing individual performance in relation to school average we offer an opportunity to able students who would previously have been denied access.

Summary of work: Since 2003 we have offered a guaranteed interview for applicants offering lower A-level grades, as long as their performance is at least 60% higher than the average performance of their school. We have collated data for all students since the start of this ‘adjusted criteria’ scheme and compared A-level performance with examination performance at medical school.

Summary of results: There is no statistically significant difference between the mean examination scores of adjusted criteria students when compared with the cohort as a whole.

Conclusions: Equality in admissions criteria unfairly disadvantages less privileged applicants.

Take-home message: Applicants with lower grades from weaker schools perform just as well as students with higher grades from stronger schools.

7M/SC3
Effect of the introduction of an admission test on distribution of learning style and gender
H G Kraft* (Medical University of Innsbruck, Schoeopfstr. 41, Innsbruck 6020, Austria)

Background: In 2006 the Swiss admission test to medical schools (EMS) was introduced at the Medical University of Innsbruck. Previously, all students were admitted to study medicine without any selection. This study aims to find out whether the introduction of this test had an effect on the distribution of Kolb’s learning styles and of the gender ratio in the students.
Predicting student performance in the first year of a medical curriculum using neural network analysis

Ben van Heerden*, Chris Aldrich, Alten du Plessis, Gorden Jemwa, Rita de Jager, Alwyn Louw (University of Stellenbosch, PO Box 19063, Tygerberg 7505, South Africa)

Background: Selecting medical students at our institution is mainly based on high school academic performance. Due to changes in the school curriculum and assessment procedures, traditional selection criteria are no longer available. We are also aligning the demographic profile of our students with that of the country. School performance is, however, not always a reliable indicator of success at tertiary level, especially when selecting students from previously disadvantaged schooling systems. Alternative predictors for successful medical study need to be identified.

Summary of work: Artificial neural network analysis (ANNA) was used to identify predictors of success in students admitted into medicine since 1999. Three categories (demographic, quantitative and qualitative) of 99 input variables were used. First-year performance was classified as passed or failed.

Summary of results: Of 171 students with complete datasets, 10 failed. Using all input variables, ANNA predicted failures with almost 100% accuracy. The most powerful predictors were the national Health Sciences Placement Tests results (90% accuracy). Performance was significantly related to homelanguage and ethnicity.

Conclusion: ANNA seems highly accurate to predict student performance in the first year of our medical curriculum. Take-home message: The use of ANNA will enhance our selection process, especially in identifying students at risk for poor performance.

Validity and equity of selection tools for graduate-entry medicine

Paul Garrud* (University of Nottingham, UK, The Medical School, Derby City Hospital, Uttoxeter Road, Derby DE22 3DT, United Kingdom)

Summary of work: The frequencies of the learning styles according to Kolb were determined in the medical students (2006 and 2007) who had passed the EMS test and compared to those of students (2002–2004) who had been admitted without any test.

Summary of results: Students who were selected by the EMS showed a significant different distribution compared with the unselected: the frequency of assimilating and accommodating remained unchanged but the frequency of “converging students” had increased at the expense of student with diverging learning style. Students with the diverging learning style had significant lower marks in the EMS than students with one of the other learning styles.

Conclusions: Since students with the diverging learning style are predominantly female this effect on the learning style distribution might explain also a significant part of the gender effect (reduction of females) that was visible after the introduction of the EMS.

New technique of student selection for good community doctor

Prapa Ratanachai* (Hatyai Medical Education Center, 182 Rattakarn Rd, Hatyai, Songkhla 90110, Thailand)

Background: In order to produce 5-star doctors according to WHO standards (proficient care-giver, communicator, community-leader, life-long learner and durable doctor in hometown), we try to recruit students that are generous, have good interpersonal relationships and have leadership characteristics by implying a group-processing test as one modality in our admission test.

In order to produce 5-star community doctors in the future, we try to recruit students that are generous, have good interpersonal relationships and have leadership characteristics by implying a group-processing test as one modality in our admission test.

Conclusion: Group-processing work can help to explore students’ attitude and interpersonal relationship in the medical student admission test.

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Conclusions: Since students with the diverging learning style are predominantly female this effect on the learning style distribution might explain also a significant part of the gender effect (reduction of females) that was visible after the introduction of the EMS.
7N/SC1
Is the Script Concordance Test valuable to assess clinical reasoning in medical students at the clerkship level? A study from the Obstetrics and Gynaecology department of the Université de Montréal
M J Bédard*, P Monnier, R Gagnon, D Kazi-Tani, A Sansregret, G Asselin, C Jean, B Charlin (Université de Montréal, 868 Stuart, Montréal, Québec H2V-3H6, Canada)

Background: While difficult, it is important to evaluate early clinical reasoning in a medical student curriculum. The Script Concordance Test (SCT) is a good assessment tool to measure reasoning in the context of uncertainty. It was validated for postgraduate students and physicians but not at the clerkship level. Our goals are to determine if the SCT is valuable at this level and to compare the SCT to other evaluation formats used.

Summary of work: Obstetrics and Gynaecology (OBGYN) SCT test was designed according to the clinical objectives. A 50-items SCT test was administered to the clerks at the end of their rotation and to a panel of experts. Reliability coefficient (RC) was calculated with Cronbach Alpha and ANOVA was used to test difference between subgroups. 69 medical students (objective: 120) and 15 experts took the test.

Summary of results/Conclusions: After optimization, the RC is 0.77. The means is 31.83 +/- 5.49 (13.09-41.63). 84% of the students have found the SCT well adjusted for their level. 66% of the experts found it realistic, relevant and believed it should be used. The SCT will be compared with other evaluation formats currently used at the OBGYN rotation.

Take-home messages: The SCT is a valuable assessment tool at the clerkship level and could be used in the curriculum.

7N/SC2
Applicability of the Script Concordance Test to monitor competence development in clinical decision making
S P J Ramaekers**, P van Beuken1, J van Keulen1, W D J Kremer1, A Pilot1 (IVLOS Educational Institute/Faculty of Veterinary Medicine, Utrecht University, P.O.Box 80127, Utrecht 3508TC, Netherlands)

Background: The so-called clinical lessons (Utrecht University, veterinary medicine) aim at providing students with first experiences in solving real-life clinical problems and training them to reason and decide in clinical situations in accordance with biomedical theories and practical guidelines. To reveal the extent of their effectiveness, students were assessed with a Script Concordance Test (SCT-VetMed) at the beginning and the end of the course.

Summary of work: The SCT-VetMed was developed, representing the range of patients, problems and circumstances that veterinarians are commonly confronted with in their clinical practices. In total, it consists of 30 cases and 120 questions. The reference group was made up of 30 experienced, non-teaching clinicians, covering the main clinical areas.

Summary of results/Conclusions: 165 students participated in the administration of the test. The SCT-VetMed met the psychometric standards and the analysis and comparison of the students’ results at the beginning and end of the course revealed the progress they made.

Take-home messages: The Script Concordance Test-method can be used to assess the development in clinical reasoning competence and to discriminate along levels of experience, even in a broader domain (such as veterinary medicine) and at undergraduate level.

7N/SC3
The contribution of analytic information processing to performance on non-visual diagnostic tasks
Bruce Wright*, Sylvain Coderre, Kevin McLaughlin (University of Calgary, 3330 Hospital Drive NW, Calgary, Alberta T2N 4N1, Canada)

Background: Premature closure is a frequent cause of diagnostic error. Strategies to overcome an incorrect initial diagnosis have been disappointing. Our objective was to study the effect of analytic information processing on diagnostic performance.

Summary of work: We asked 67 final year medical students for their initial diagnosis after providing the presenting complaint and contextual information for eight cases. Next we randomly presented them with additional information that was either concordant or discordant with the likely initial diagnosis. We recorded how often subjects changed their diagnosis and accuracy of their final diagnosis.

Summary of results/Conclusions: For concordant cases the initial diagnosis was selected as the final diagnosis in 84.2% of cases compared to 25% of discordant cases (p < 0.001). In discordant cases, subjects that changed their final diagnosis selected the correct final diagnosis in > 70% of cases. Accuracy of the final diagnosis was similar for concordant and discordant cases: 84.0% vs. 80.5%, p = 0.16.

Conclusions: When medical students used analytic processing they rejected most incorrect initial diagnoses and performance was unaffected by their initial diagnosis – suggesting that this is an effective strategy to prevent premature closure and to overcome an incorrect initial diagnosis.

Take-home message: Analytic information processing prevents premature closure.

7N/SC4
A way to learn clinical reasoning in the preclinical years
Diana P Montemayor-Flores*, Nancy E Fernandez-Garza, Donato Saldivar Rodriguez (Facultad de Medicina de la Universidad Autonoma de Nuevo Leon, Madero y Gonzalitos S/N, Monterrey, Nuevo Leon 64420, Mexico)

Background: Clinical reasoning is the key competency of medical practice. Through this complex intellectual ability, the patient's information is integrated with the physician's knowledge and experience in order to get a diagnosis, treatment, rehabilitation, prognosis and disease prevention. The question is: what is the best way to develop this competency in preclinical students?

Summary of work: We looked for an intellectual path that leads to clinical reasoning and found that if clinical information is studied using the basic intellectual abilities: identification, description, comparison, definition and classification, and if this starts a continuing and repetitive intellectual process that goes from analysis to synthesis and evaluation, we are learning clinical reasoning.
Based on this, we designed an on-line course for first year students in which, by applying this intellectual path to solve clinical problems, they start to learn clinical reasoning.

**Conclusions:** The systematic use of this intellectual path allows students to start learning clinical reasoning in the right way, avoiding learning the hard way which is expensive in time and effort.

**Take-home message:** The learning of clinical reasoning must start in the first year and educators must provide the opportunity to learn it according to the course content.

### 7N/SC5

**Clinical reasoning, diagnosis and remediation: construction and use of an assessment grid to evaluate residents’ difficulties in clinical reasoning with physician supervisors**

*Marie-Claude Audétat*, André Jacques (Université de Montréal, Centre de pédagogie appliquée aux sciences de la santé, Département de médecine familiale, Montréal (Qc) H4J 1C5, Canada)

**Background:** The myriad theories and complexity of the models concerning clinical reasoning make it difficult to effectively assess difficulties in clinical reasoning and to define and establish a remediation process. Physician supervisors routinely have trouble making an objective, detailed assessment of clinical-reasoning difficulties, which are most often perceived in a global, undifferentiated way. In the same vein, the proposed remedial measures or training plans are for the most part vague and non-specific.

**Summary of work:** Our objective was to develop an assessment grid to evaluate difficulties in clinical reasoning, along with a user’s guide. After construction of the two tools, the assessment grid and user’s guide were used by physician supervisors (novices and experienced supervisors) for three months in a family medicine unit (pilot study). Semi-structured talks were conducted with physician supervisors from other units in order to better identify their needs in terms of tools for identifying and dealing with clinical-reasoning difficulties among physicians in training.

**Summary of results/Conclusions:** The results confirm the importance of such a tool: this approach seems to us to be a good way to develop links between theory and practice by equipping physician teachers in performing their supervision.

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### Workshop 70

**A practical guide to managing doctors in difficulty**

Alistair Thomson, Elizabeth Spencer, Peter Harrison (National Association of Clinical Tutors, UK)

**Background:** Doctors in difficulty (DiD) come to trainers’ attention in many ways. The spectrum of performance problems is wide, ranging from minor, momentary aberrations to major misdemeanours or persistent unprofessional conduct. Periods of transition (changing jobs, moving regions, personal life events, etc) can be associated with a deterioration of clinical performance. ‘Modernising Medical Careers’ (MMC) has been a major change to training in the United Kingdom. MMC has created new challenges for trainers and the postgraduate medical education infrastructure in early identification, exploring the issues, planning remediation, assessing subsequent progress and continuing care of DiD. The increasing requirement for robust evidence creates concerns for those dealing with such matters. Prompt and effective action can prevent simple problems escalating. The National Association of Clinical Tutors UK (NACT UK) have recently published a guidance document (Managing Trainees in Difficulty - Practical Advice for Educational and Clinical Supervisors, NACT UK, 2007), which sets out a schema for trainers to follow, when they are faced with a trainee who may have difficulties.

**Intended outcomes:** Prompt management of DiD will improve training satisfaction and service delivery, while maintaining patient safety.

**Objectives:** The workshop will use the recently published document to help participants gain confidence in managing and supporting trainees with difficulties.

**Structure:** Small group work to explore scenario examples of doctors in difficulty, followed by plenary discussion of learning points. Participants will have the opportunity to explore current arrangements and utility of the new guidance.

**Who should attend:** All who are directly involved with or indirectly responsible for doctors in training.

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### Workshop 7P

**Medical Education Terminology Under the Microscope: Creating Glossaries to Establish a Common Language**

Elizabeth Kachur (Medical Education Development, United States), Timothy Dornan (University of Manchester), Alex Haig (NHS Education Scotland, UK), Andrzej Wojczak (Poland) and others.

As medical education matures and becomes a global specialty, we need to pay more attention to the words we use to describe our programs and activities. Language is critical whether we are communicating with trainees, faculty or administrators, or whether we are communicating with colleagues via conference presentations or publications. It is also important when searching for and reading the forever growing literature base. Professionals in countries which do not have English as main language face additional burdens. During this workshop participants will have the opportunity to learn about specific efforts to unify terminology (e.g., glossaries, MedEdCentral, METRO, standard setting efforts of professional organizations, conference symposia on the topic). They will also be able to work on a glossary to share with learners or colleagues at their home institution. With the help of an audience response system it will be possible to get instant feedback on definitions and word usage from other workshop participants and faculty.
Workshop 7Q  Setting defensible standards on performance-based exercises

Thomas Rebbecchi*, John Boulet* (Educational Commission for Foreign Medical Graduates, 3624 Market Street 2nd Floor, Philadelphia 19104, United States)

Background: Objective Structured Clinical Examinations (OSCEs) and clinical skills examinations (CSEs) have been used extensively for both pedagogical and assessment purposes. OSCE and CSE testing programs are now commonplace in medical schools throughout the world. Additionally, these types of assessments have been used to make certification and licensure decisions. The ability of physicians to communicate with other healthcare workers, especially in writing, is a fundamental skill. Incorporation of a post encounter patient note exercise into OSCEs and CSEs provides an opportunity to assess this skill. To make appropriate competency decisions, defensible standards must be set.

Intended Outcomes: The initial goal of this workshop will be to provide an overview of common standard setting methods. The advantages and limitations of each procedure will be illustrated to enable workshop participants to make informed choices concerning the available methodologies.

Structure: Following the didactic portion of the workshop, participants will be exposed to all phases of a typical standard setting exercise, including orientation, panel discussions, rating performances, and review and analysis of findings.

Who should attend: Individuals responsible for the assessment of medical students and/or graduates.

Level of workshop: Intermediate.

Workshop 7R  Keeping up with your students: five “Web 2.0” technologies and how you can use them for teaching and learning

Sharon E Dennis (University of Utah, Spencer S. Eccles Health Sciences Library, 10 North 1900 East, Salt Lake City, UT 84112, United States)

Background: New “Web 2.0” technologies are being used by students today for communication and collaboration. What are these new technologies, and how can educators use them in a classroom setting? This session will introduce participants to the five important Web 2.0 technologies: wikis, blogs, social networking, video and photo sharing, and social bookmarking.

Intended outcomes: By the end of the session, participants will: (1) understand the definition and characteristics of the term “Web 2.0”; (2) understand the basic functionality behind five important Web 2.0 technologies; (3) have had a brief hands-on experience with each of the technologies; and (4) understand how these technologies can be applied in an educational setting.

Structure: The workshop will introduce Web 2.0 definitions and concepts. The instructor will define and demonstrate five Web 2.0 technologies (wikis, blogs, social networking, video and photo sharing, and social bookmarking) as well as providing examples of uses in education. There will be a hands-on component after each section; participants will log in to an online service and briefly try out the new technologies using freely available online services. At the conclusion of the session, the group will discuss possible applications in an educational setting.

Level of workshop: Beginner.

Workshop 7S  The role of a utility approach in the assessment and evaluation of interprofessional education

Brian Simmons*, Ann Jefferies, Scott Reeves (University of Toronto, 76 Grenville St, Toronto, Ontario, M5S 2B6, Canada)

Background: Interprofessional education (IPE) is a high priority for government and education providers. The aims of such learning should help promote collaborative practices, prepare students for effective team working and improve patient care. However, more work is required to define appropriate assessment and evaluation (A&E) methods.

Aims: Develop an understanding of the role of A&E; Understand how competences can be incorporated in a ‘blueprint’ for A&E; Understand the concept of utility as applied to A&E.

Structure: Using didactic lectures and interactive small group discussion, the following will be discussed: why engage in A&E? When should A&E be undertaken? What A&E methods should be employed? and How to use A&E? Emphasis will be on the utility/usefulness of A&E, with reference to reliability, validity, educational impact and acceptability.

Intended outcomes: Participants will: Understand the different methods of A&E in IPE; Develop an understanding of the appropriate use of A&E in IPE and have a framework to build an A&E blueprint.

Conclusions: IPE in health care aims to improve patient outcomes. Research suggests that this outcome can be achieved by engaging in effective interprofessional learning. The use of an appropriate A&E methodology will be critical to determine if the desired learning has occurred.

Who should attend: This workshop is aimed at health care providers with an interest in IPE and A&E.
Understanding discourse analysis in the context of health professional education

Tina Martimianakis*, Nancy McNaughton*, Brian Hodges* (University of Toronto, Wilson Centre for Research in Education, 200 Elizabeth Street, 1ES-559, Toronto M5G 2C4, Canada)

Background: For the purposes of this workshop discourse analysis is defined as a methodology linked to social theoretical perspectives (primarily Foucauldian) that interrogate taken for granted assumptions about the world. It is also a method that allows us to learn about how we construct meaning and organize our practices as health professionals. Discourse analysis is especially relevant within the health professions as a method for making visible entrenched truths that interfere with our ability to change the way we do things and keep pace with new understandings.

Intended outcomes: This interactive workshop will familiarize participants with terminology and techniques for analyzing texts and practices. Participants will: Learn about different definitions of discourse analysis and how to distinguish Foucauldian discourse analysis in research papers; Gain understanding about how discourse analysis can be used; Apply discourse analysis to specific examples from the health professional context.

Structure: Didactic and interactive activities in large and small groups: Reflective exercises promoting exchange of ideas; Problem solving exercises; Role-play demonstration providing opportunities to deconstruct practices; Question and answer opportunities.

Who should attend: This workshop is for those interested in learning about an important qualitative methodology for understanding how health professionals organize their activities.

Level: Beginner.

Community-based Education (CBE): meet the challenge

Mohi Magzoub (King Saud bin Abdulaziz University for Heath Sciences, College of Medicine, Abdulaziz 22490, Saudi Arabia)

Objectives: Participant will: (1) Define CBE; (2) Explain rationale and challenges of implementation; (3) Suggest feasible solutions for overcoming challenges.

Structure: After a brainstorming session, there will be a short presentation on definitions, followed by group work on challenges and group presentation and discussion with wrap-up. Participants will draw from the vast experience of the organizers in the field.

Level of workshop: Beginner.

Creation of realistic Virtual Patients for use in medical education

Jonathan Round*, Emily Conradi*, Terry Poulton* (St Georges University of London, e-Learning Unit, Centre for Medical and Healthcare Education, Hunter Wing, Cranmer Terrace, Tooting, London SW17 0RE, United Kingdom)

Background: Virtual Patients (VPs) are becoming integral to the curricula of a wide range of medical and healthcare courses. However, pedagogically effective and realistic VPs are complex and time-consuming to create. Much of the difficulty in creating effective VPs is about making the scenario ‘come to life’. This interactive hands-on workshop is for those academics who want to learn how to write realistic VPs and want to explore the possibilities for using them effectively in their courses.

Intended outcomes: Participants will be able to design, create and integrate VPs into their courses as a result of taking part in this workshop.


Who should attend: Academics, faculty, and teaching staff involved in e-learning activities.

Level of workshop: Beginners and intermediate.

Self assessment / Assessment of clinical skills

Assessment of students’ self assessment skills in problem based learning approach in medical education

Aysen Melek Aytfug Kosan*, Nizamettin Koc (Ankara University School of Medicine, Ankara Universitesi Tip Fakultesi Tip Egitimi ve Bilisimi AD, Cebecli Hastanesi Kampusu, Dikimevi, Ankara 06620, Turkey)

Background: In this study, it is aimed to assess the consistency between Ankara University Faculty of Medicine year I and year III students’ self assessment about their performance in PBL activities and the tutors’ assessment.

Summary of work: The study was performed in the 2005-2006 academic year in AUFM among 340 Year I, 301 Year III students and 64 tutors who directed PBL through this period. For the study, data were collected by Problem Based Learning Performance Assessment Inventory.
Summary of results: It was seen that Year I and III students’ self-assessment differ greatly from the tutors’ assessment on PBL. Bias index scores were determined to be negative for both Year I and III students. This indicated that both Year I and III students underestimate their performance. Statistically significant correlation was determined between the self-assessments of tutors and students who belonged to high grade academic success group. In Year III, the highest deviation score was seen in low grade academic success group.

Conclusion: This study has demonstrated self-assessment inaccuracy in medical students.
Take-home message: In the PBL process, to place clear objectives, planned educational activities and continuous application concerning self-assessment, it is important to evolve.

7W/P2
Further concerns about self-assessment: are medical students aware of their progress in clinical skills during clerkship?
Ch Berendonk*, M Perrig, C Beyeler (Institute of Medical Education, Assessment and Evaluation Unit, University of Bern, Switzerland, Institute of Medical Education, Inselspital 37A, Bern 3010, Switzerland)

Background: Medical students do not accurately self-assess their competence. However, little is known about the awareness of change of competence over time. The aim of this study was to evaluate if students are aware of their progress.

Summary of work: Twenty-two fourth year medical students had self- and expert-assessments of their clinical skills in musculoskeletal medicine in an OSCE like station (4 point Likert scale) at the beginning (t0) and end (t1) of their eight weeks clerkship in internal medicine. Thirteen students were assigned to the intervention of a 6x1 hour practical examination course; nine took part in the regular clinical clerkship activities only and served as controls.

Summary of results/Conclusions: The intervention students significantly improved their skills (from 2.78 ± 0.36 to 3.30 ± 0.36, p<0.05) in contrast to the control students (from 3.11 ± 0.58 to 2.83 ± 0.49, n.s.).

Take-home message: Medical students improving their clinical skills by an interactive course in addition to their regular clerkship activities are not aware of their progress.

7W/P3
Self-assessment insufficiently predicts performance in emergency skills
C A Pfister*, E Lipp, C Beyeler (Institute of Medical Education, Assessment and Evaluation Unit, University of Bern, Inselspital 37A, Bern 3010, Switzerland)

Background: Residents demonstrate a broad range of performance levels for clinical skills, with some at an inadequate level. Adequate self-assessment is important for life long learning. However, its accuracy is questioned extensively. The aim of this study was to evaluate how far the residents’ self-assessment predicts their performance in an expert assessment of emergency skills.

Summary of work: Twelve skills were identified as being relevant for the emergency duties of residents in smaller hospitals. Fifteen first-year residents from the departments of internal medicine and general surgery at a district hospital rated their performance on a questionnaire (self-assessment). This was followed by a structured, practical in vivo assessment by anaesthesiologist (expert assessment). For both, a visual analogue scale from 0 to 10 was used, on which 0 stands for novice and 10 for expert. Predictive validity was described by Spearman’s correlation, which was significant in 3 out of 12 skills only. Median correlation (r) was 0.50 (range 0.16 to 0.93).

Conclusion: At the beginning of postgraduate training, self-assessment alone is not sufficient to guide self-directed learning.
Take-home message: At the beginning of their residency, physicians need structured feedback in emergency skills which can be offered by anaesthesiologists.

7W/P4
The 360-degree evaluation: a beneficial tool to assess residents’ communication skill?
Woranart Ratanakorn* (Chonburi Medical Education Center, Pediatric Department, Chonburi Hospital, Bansuan, Muang District, Chonburi 20000, Thailand)

Background: To determine the discriminant validity of a 360-degree evaluation of pediatric residents’ communication skill.

Summary of work: A 360-degree evaluation was used to assess pediatric residents’ communication skill. The tool was developed based on the Royal College of Pediatricians of Thailand competencies. The item was scored in a 1 to 9 Likert scale: 1 not meeting expectations and 9 exceeding expectations. The participants were residents, faculty staffs, 6th year medical students, head of pediatric ward nurses, and parents of children. Analysis of Covariance (ANCOVA) was used to compare ratings by rater groups. Discriminant validity was confirmed by using Cluster Analysis.

Summary of results: 21 residents were evaluated from February to December 2007. 2,331 evaluations were obtained (22 to 288 per resident). Average communication scores across the raters were remarkably different (p<0.01); staff=7.23, resident=8.23, nurse=6.72, medical student=8.66 and parent of children=7.91. The cluster analysis revealed the different residents’ cluster group by each group of raters.

Conclusion: The 360-degree evaluation provides information for resident communication skill in multidimensional point of view. Different rater groups may need distinct instruments based on the exposure of rater groups to various resident activities and behaviors.
Take-home message: Test validity is the key success for 360-degree evaluation.

7W/P5
Clinical Skills Assessment: a valuable strategy in undergraduate medical education
S M R R Passeri*, R C L Domingues*, M A Ribeiro-Alves, E Amaral, A M B Zeffirino (State University of Campinas, Rua Araticum, 39 - Alphaville Campinas, Campinas 1309368, Brazil)

Background: This study aimed to compare Y6 medical students’ ratings in Clinical Skills Assessment (CSA) with the mean internship score (MIS), derived from MCQs and Global Ratings for 6 hospital-based modules.

Take-home message:
7W/P6

The student view on the clinical skills assessment
L A Passeri*, L C Zefirino, S M R Passeri (State University of Campinas, Rua Araticum, 39, Campinas 13098-368, Brazil)

Background: The assessment of clinical skills is an important issue in medical education. The aim of this study was to evaluate and identify the student view about the topics considered by the professors in the evaluation of their skills.

Summary of work: At the State University of Campinas, 46% of the Dental School graduate course is dedicated to clinical activities, where the student practices working with patients. An on-line questionnaire was applied to Y3 (n=82) and Y4 (n=87) asking them to indicate the characteristics that should be observed and evaluated by the professors. The same questionnaire was applied again 6 months later showing significant correlation (p=0,0000 and r=0.8314) by the Pearson coefficient. Among the topics, knowledge was the most important (100%), followed by ethical behavior (90.7%), clinical skills (79.6%), attitude (66.1%), capacity of decision (58.8%), independence (53.5%) and the last was the professor-student-patient relationship (44.5%).

Conclusion: From the student point of view, the human relationship (professor-student-patient) was the least important topic in the evaluation of clinical skills.

Take-home message: The medical/dental courses should emphasize on their curriculum the human aspects for the professional training, as this is fundamental for their future activity.

7W/P7

Preliminary outcome in use of mini-CEX to assess clinical skill of 4th year medical students by VDO tape patient encounters assessment in pediatrics unit
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Background: The mini-CEX is a method for assessing clinical skills of medical students. The mini-CEX assessment can be obtained via bedside staff watching and videotaping reviews of patient encounters.

Objectives: 1) To determine the feasibility of using the mini-CEX for assessing clinical skills of medical students; 2) To compare the students’ preference of undergoing bedside staff watching versus videotape patient encounters assessment.

Summary of work: Clinical skills of 19 medical students in pediatrics clerkship were evaluated using 2 mini-CEX encounters performing by 9 staff. There were 2 study groups; the 1st group was evaluated by bedside staff watching technique; the 2nd group was evaluated under videotape recording condition. The satisfaction rate of participants was evaluated using Rubric scale (by a questionnaire).

Summary of results: Most students reported the test improves their competency in clinical skills. The students preferred videotape patient encounter to bedside staff watching conditions (P value = 0.04). The satisfaction rate with the mini-CEX was high for both students and evaluators.

Conclusion: The mini CEX is a feasible tool for assessing and improving clinical skills for students. The videotape patient encounter technique was preferred by students. The satisfaction rate with the mini-CEX was high for both students and evaluators.

7W/P8

User feedback and satisfaction of the mini-CEX for medical students in Taiwan
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Background: The mini-clinical evaluation exercise (mini-CEX) has been used to assess clinical skills of final-year medical students at China Medical University since 2006. We aimed to examine how students and assessors perceive the mini-CEX as a formative assessment tool after running it for one year.

Summary of work: Anonymously semi-structured questionnaires were sent to 109 students and 148 assessors in April 2007. Eighty nine students and 66 assessors responded the effective answers.

Summary of results/Conclusions: More than 75% of responding assessors and 56% of students considered that the mini-CEX had been ‘very’ or ‘quite’ useful in terms of the educational value. Forty eight (54%) of the students were satisfied about the feedback they received, while 45% of the students were satisfied about the evaluation. Only 7.6% of the assessors found no difficulty in both evaluation and feedback. Other assessors identified humanistic qualities/professionalism (53%), organization/efficiency (39%), and counseling skills (26%) as the more difficult parts in practice.

Take-home message: Our results show that the mini-CEX was successful in that it was highly regarded as a clinical skills teaching tool by both students and assessors. In the future, however, changes could be made to cope with the feedback giving by students and assessors.

7W/P9

Use of the Mini-CEX by English speaking supervisors during Arabic language consultations
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Background: The Mini-CEX was developed for internal medicine residents’ assessment. It quickly gained popularity in undergraduate clinical assessment because of its ease of use and validity. The instrument relies on direct observation of a clinical encounter. Available reports are all coming from teaching environments where students, supervisors and patients speak and understand the same language. We report on the use of the Mini-CEX in the assessment of clinical encounters occurring in Arabic when the supervisor does not understand the language.
Summary of work: We used reflective practice methodology to define the foundations permitting its use in our context. The findings describe the experience of three (3) seasoned supervisors with different academic backgrounds from Canada, Australia, and South Africa, in assessing the communication skills of final year senior clinical students in a Family Medicine clerkship. The use of the Mini-CEX is surprisingly appropriate even in this context. Despite the lack of understanding of the Arabic language, assessment was possible within the framework of natural communication skills and patient-centeredness. The theoretical frameworks of communication skills and patient-centered care are internalized by teachers during their career and serve as the implicit assessment structure of a consultation even outside of their language of origin.

7W/P10
Assessment of clinical work in student internship rotations: what’s going on?
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Background: The first student internship rotations in a revised undergraduate medical curriculum started in 2002. The various departments were not guided by an assessment policy regarding clinical assessment methods and strategy. Each department developed their own assessment strategies.

Summary of work: In 2007 the Assessment sub-committee (AC) of the MBChB Undergraduate Programme Committee (UPC) was mandated to review assessment practices in the student internship rotations. Departments were informed of the review process and criteria and supplied with a resource guide outlining best practice in clinical assessment. The AC met with the various departments to ascertain current assessment practice and then drew up a report describing current practice, acknowledging good practice and making recommendations for improvement.

Summary of results: The clinical assessment practice across the departments was charted and analysed.

Conclusions: A wide diversity of assessment methods is used. Compared with the four levels of Miller's pyramid much of the assessment is still related to the lower levels of the pyramid, rather than to the apex. The review sensitised teaching staff to good assessment practice through the resource guide and discussion about their assessment practice.

Take-home messages: A review of clinical assessment practice is an opportunity to sensitise teaching staff to best practice and for staff development.

7W/P11
Annual Review of Competence Progression (ARCP) panels: from policy to practice - The RCGP view
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Background: In August 2007 a new assessment process (nMRCGP) was introduced for doctors undertaking specialty training in general practice. It comprises three components, one of which is Workplace-Based Assessment (WPBA). Deaneries monitor a trainee’s progress in WPBA through a process of an annual panel review (ARCP Panels). External scrutiny of the panel decisions is provided by a senior member of the profession identified by the relevant Royal College. The RCGP has appointed and trained a pool of 20 External Assessors to undertake this role.

Summary of work: 60 e-portfolios were examined in the first cycle (December 2007). The reports produced by Assessors were analysed to identify good practice and to make recommendations on systems improvements. The ARCP process was refined during 2008 and a much larger round of panels will be held during June 2008.

Summary of results: Systems that needed to be addressed as a priority after the December panels: Educational supervision; Clinical supervision; Use of the WPBA tools; e-portfolio issues; Organisation of the panel process; The panel's decision making. Further recommendations will be available in July 2008.

Conclusion: As ‘work in progress’, experience and expertise needs to be shared across specialties to define ‘best practice’.

7W/P12
Stakeholders help set the standard: benchmarking the nMRCGP Clinical Skills Assessment by GP trainers and assessors
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Background: The RCGP required inputs from GPs nationwide into the standard-setting process for its new compulsory accreditation procedure, the nMRCGP which includes a 12-case integrated clinical skills assessment (CSA). The passing standard depends on: the level/complexity of cases; the standard at which assessors mark; and the number of cases to be passed overall (“n2P”).

Summary of work: RW held seven workshops UK-wide; colleagues ran two further sessions. We showed trainers and course organisers videos of cases, obtaining grades for the performances, also “n2P”. Benchmarking data were obtained from 242 trainers and 120 assessors. We present the recommended n2P from trainers and assessors, and comparisons of candidates’ grades from each group.

Conclusions: Trainers are demanding and consistent about passing standards: the CSA is likely to be a more robust and demanding test than previous ones and there may thus be repeated failures. CSA Assessors are more hawkish. We shall extend the work to develop standard-setting procedures in this examination.

Take-home messages: Angoff/Hofstee with experts is not enough! Stakeholders must engage in standard-setting towards buy-in. Any CSA failures should be defensible in part in its standard in the light of stakeholder involvement and benchmarking.

7W/P13
Guidelines for reporting the quality of postgraduate examinations: a suggested minimum dataset for psychometricians and assessment specialists
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Background: Reports on the quality of assessments are variable regarding the extent of their content. Some examining bodies conflate the results of “core” candidates (domestic, first-time “in-timeframe” takers) and others (overseas candidates; multiple repeaters). Differing statistics are reported. Not all provide information about test reliability. The national UK body for ensuring quality in postgraduate examinations, PMETB, has now made far-reaching generic recommendations to assessment bodies to ensure high quality procedures.
Summary of work: We have been involved in QA of four major UK postgraduate examinations. We have developed detailed guidelines for information to be sought when quality assuring assessment. We will present these. We then propose a minimum dataset that should comprise any QA report to/ by an assessment body. This includes: data separated into that on core candidates and others (eg overseas); descriptive statistical information on scoring distributions; rank order and pass-fail reliability statistics; and an estimate of measurement error.

Conclusions: QA reports must be comprehensive, coherent and comparable. Take-home messages: Agreement on a QA data set is essential.

7W/P14
Setting the standard for the nMRCGP Clinical Skills Assessment: a new approach for a new exam – system and outcome
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Background: The UK postgraduate medical assessment overseeing body, PMETB, charges the Royal Colleges to provide high-quality, defensible examinations. The enormous literature on standard-setting provides little guidance in setting the standard of a high-fidelity cases-based OSCE of clinical consultations, globally graded.

Summary of work: The RCGP’s Clinical Skills Assessment (CSA) commenced in October 2007. It is such an examination, using 12 stations - at this professional level, simple behavioural criteria were eschewed, and three domains are graded, but with an overarching summative pass-fail case judgement. We proposed a standard-setting approach in 2006. We describe the theoretical issues raised, the approach adopted - involving benchmarking with a range of stakeholders, see separate submission, and using a “number of cases passed” as the passing criterion - and the resultant practical outcomes. As ever, “political” and psychometric judgements must be combined. We summarise this process.

Conclusions: The literature is unhelpful towards setting a defensible standard on a cases-based assessment. Assessment bodies should collaborate on this.
Take-home messages: A cases-based “number to pass” standard is feasible but challenging. After seeking advice of three international experts, we do not think it can, qualitatively, be bettered in this situation. It demands excellent quality control of key variables (assessors and cases).

7W/P15
Is the assessment of progress in competence given by medical teachers influenced by the self-judgement of students?
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Background: At the beginning and at the end of a seven-day practical course in General Practice, students of medicine and their teachers are generally asked to judge their competence (knowledge and skills). Students fill out their questionnaire before their teachers assess competence using the same instrument. We wanted to find out whether the assessment of competence by medical teachers is influenced by knowing how students judge themselves.

Summary of work: Students of Medicine at the University of Frankfurt were asked to judge their competence with regard to twenty different items of basic knowledge and skills at the beginning and the end of a seven-day practical course in a Primary Care Practice. They used a twenty-item questionnaire (on the likes of measuring blood-pressure or knowing about disease-management programs) to judge their competence in accordance with the competence levels of Miller (0=no knowledge, 4=routine practice). At the same time, their teachers were asked to judge students’ competence in the same way: one group knowing how students had judged themselves, the other group without such knowledge.

Conclusion: The teachers assessment was similar to students’ judgement, when they knew how the students had judged themselves. The difference when they provided their assessment without knowing students’ own judgement will be presented at the congress.
Take-home message: To give an objective, uninfluenced assessment of competence, medical teachers should possibly not know how students view themselves.

7X/P1
Studying at one of UK’s biggest medical schools IS the biggest problem for medical students: a survey explores student support mechanisms
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Background: Students share a common concern that high student numbers at KCLMS interfere with the provision of effective pastoral care. A student-led survey was conducted to explore whether student support is adequate, with the aim of informing staff on areas for improvement.

Summary of work: A questionnaire was circulated on the school web in March 2008 to all students asking questions concerning pastoral care and other sources of support, and also the extent to which term-time commitments including part-time work and caring for family affects student welfare.

Summary of results: A response rate of 30% (over 700 students) across all years was achieved. Students reported a range of support provision with variable levels of pastoral care. When support was required, 77% students were “very satisfied” or “satisfied” with their tutor, and only 7% were “dissatisfied” or “very dissatisfied”. Personal tutors provided the majority of academic support. However, most students turned to peers for support with personal issues.

7X Supporting the student / The student in difficulty

Posters
Conclusions: Personal tutors are the primary supporters for most students although accessibility could be improved. We found support provision to be satisfactory.

Take-home message: High student numbers at one of the largest medical schools does not impede student pastoral care.

7X/P2
Development of a mentoring programme for students in the undergraduate medical course: results of a survey
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Background: Objectives were to determine preferences for mentoring topics as well as to analyse factors associated with different needs, in particular quality of life, self-efficacy and learning styles. Summary of work: Cohort study with two measurement time points. Students of the undergraduate medical course, encompassing semester 1, 3 and 4 were asked to participate (n=1,245). With a total of n=998 the return rate was 80%.

Summary of results: It was found that study interest decreased significantly with higher semester, while serious considerations for drop out increased. Concerning quality of life, students reported lower scores for mental health than normal population. Freshman and students taking into consideration to discontinue their medical studies showed lowest mental health scores. The majority of students showed strong approval for an counseling program. 79% would be willing to use a mentoring service. Preferred topics were “study international”, “coping with stress” and “learning strategies”.

Conclusion: The study enabled us to take curricular aspects into account and helped in creating an individual mentoring program.

Take-home messages: Findings like lowest scores of mental health for first-year students underline the necessity of early counseling. Potential drop outs should be offered a special mentoring programme. An approach for this group could be the improvement of self-efficacy.

7X/P3
What is done when mentoring relationship happens?
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Background: Mentor roles include the use of many types of behavior during the interpersonal relationship with mentees. At a Brazilian Mentoring Program all mentors send narrative reports regarding each one of the monthly meetings accomplished during the year. The contents of these reports are an important way to understand the essentials of effective mentoring practice.

Summary of work: One year representative mentor-mentee experience was analyzed by an in-depth qualitative approach, focusing the mentor’s interventions and its purposes during the meetings. The mentor’s reports regarding 10 meetings scheduled during the year is presented. Six mentoring dimensions are discussed - relationship, informative, facilitative, confrontative, mentor model and professional vision. Behaviors like empathetic listening, questions about present, multiple viewpoints, sharing experiences and reflection on future will be highlight in the reports texts.

Summary of results/Conclusions: The mentor-mentee interaction along the analyzed timeframe shows that mentoring can be a worthwhile experience. By meaningful dialogues skilled mentors can increase the mentee’s competencies and well being, promoting constructive changes and positive growth.

Take-home messages: The mentor role is a dynamic and pragmatic task and it can help mentees’ transition through significant life and academic events. Mentoring programs must enhance mentoring skills by regular training and supervision.

7X/P4
Impact of a study habit workshop on nursing freshmen
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Background: Freshmen with poor study habits suffer adaptive problems that sometimes lead to mood disorders, academic failure and attrition. Students’ affairs division of Universidad Catolica de Chile created a center for student support which offers a study habit workshop (SHW) to prevent this problem. Using active learning and personalized feedback SHW promotes good study practices and stress management. Scheduled in the second semester of the first year, it lasts 16 weeks, totaling 24 hours.

Summary of work: The SHW impact on three cohorts of nursing students (n=177) was measured by the change in self-reported self-efficacy, responsibility, strategy, study environment and anxiety, as evaluated by an instrument developed for university students.

Summary of results: SHW improved the self-reported self-efficacy, responsibility, strategy and study environment, and diminished anxiety of nursing freshmen.

Conclusions: SHW empowers freshmen so that they feel more secure and effective to face college life. In addition, students develop new social networks, a protective factor for future difficulties.

Take-home message: It is highly recommended to implement this kind of intervention early on the study program to prevent adaptation difficulties.

7X/P5
Identifying early predictors of student performance in a new medical curriculum
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Background: Medical students at St Andrews graduate with a BSc Honours Degree in Medicine before transferring to other medical schools to complete 3 further years of clinical training. Despite a rigorous process of selection for academically able and appropriately experienced students, a small number struggle to realise their potential. We are seeking to identify early predictors of ‘at risk’ students in order to assess the effectiveness of our current academic and pastoral support mechanisms.

Summary of work: The assessment outcomes have been analysed for the first two cohorts of students graduating from our new curriculum in 2007 and 2008. The first formal assessment occurs after only 6 weeks of the foundation module.

Summary of results/Conclusions: Analysis of the results of student performance in this very early assessment, based on only 40 Multiple Choice Questions and 4 Short Written Answers, indicates that this is a reasonable predictor of the final degree classification.
Take-home message: Very early formal assessment of entrant medical students is an effective diagnostic tool for identifying ‘at risk’ students. Early diagnostic testing is important for identifying those medical students who may struggle to achieve their potential. Our challenge is to develop appropriate and effective support structures for these students.

7X/P6
A quick method of identifying medical students at risk of failing the clinical skills licensing examination
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Background: The Step 2 Clinical Skills (CS) examination, a component of medical licensure in the US, costs medical students over $1,000 US. Quickly identifying senior medical students at risk of failing the Step 2 CS has become a top priority for The University of Texas School of Medicine at San Antonio (UT-SOMSA).

Summary of work: UT-SOMSA implemented a Clinical Skills Examination (UT-CSE) in 2005. The examination components include: Interpersonal and Communication Skills (ICS), Data Gathering (DG), and Documentation (Post Encounter Note/PEN). The PEN requires a great deal of faculty time to score, while the ICS and DG are scored by Standardized Patients via computerized checklists, allowing immediate access to the students’ overall checklist score.

Summary of results: Comparison of past scores, checklists only (ICS + DG) versus checklists + PEN, found that the PEN did not affect the overall scores of the lowest scoring students. Therefore, using only checklist scores, we could have identified all but one of the students who subsequently failed the Step 2 CS.

Conclusion/Take-home message: We have found a way using our internal CSE to quickly identify the majority of at risk students. While the PEN assists with remediation, it is not necessary to have it scored prior to identifying and notifying the students who may need additional intervention prior to taking the Step 2 CS.

7X/P7
Identifying and helping doctors at risk of unsatisfactory outcome at annual review (ARCP)
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Background: The Guide to Postgraduate Specialty Training (Gold Guide 2007) specifies the outcomes for Annual Review of Competency Progression (ARCP) panels. This is a new concept for general practice (gp) Trainees and their Clinical and Educational Supervisors. Unfavourable outcomes will have a significant impact on individual career progression and on the provision of training. The Specialty Training Executive Group in the Wales Deanery developed a strategy to identify doctors at risk of an unfavourable outcome and offer an individual remedial plan prior to a panel referral.

Summary of work: Educational Supervisors identified Specialty Trainees who were failing to engage or make satisfactory progress. Trainees causing significant concern were referred by the Programme Directors to the Associate Dean who then arranged a one to one interview with the Trainee. A form to record the content and outcomes of this meeting was devised with an action plan for each Trainee.

Conclusions: Trainee outcomes at the June ARCP will be noted to determine the effectiveness of these interventions.

Take-home messages: This work will determine whether or not targeted interviews help Trainees who are failing to fully engage with competency progression. It will also identify factors contributing to Trainees experiencing difficulty.

7X/P8
Gambling and its impact on medical student academic and personal well-being: implications for medical educators
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Background: Gambling among students is a concern to medical educators. Over a given year, approximately 42% of college students gamble and as many as 10% are identified as at-risk or problem gamblers. Students who gamble are at risk for substance abuse, personal, and academic problems. To date, no studies have been conducted on gambling among medical students or its potential impact on students’ education.

Summary of work: The present study surveyed medical students at a private medical school in the United States. Over 84% of 497 medical students responded to a 26-item modified South Oaks Gambling Screen that included questions on gambling and related issues.

Summary of results/Conclusions: Of those surveyed, 61.5% of students admitted to gambling over the previous year. Five students (1.2%) met criteria for at-risk or problem gambling, which is less than rates reported for the undergraduate population, and 195 students (46.3%) admitted to at least weekly alcohol use.

Take-home message: A high number of medical students gamble and use alcohol frequently. Expanding legalization and promotion of gambling, coupled with already mounting student debt, require medical educators to develop ways to screen, educate, and assist students with gambling and related problems.

7X/P9
Certification of students in probation at University Of Montreal Medical School: a 20 years survey
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Background: A retrospective analysis of the certification of medical students in probation for the last twenty years was made at University of Montreal medical school. A committee is responsible for the interview of students in failure and determines those who can be readmitted in probation. Members of the committee specify the conditions of the period of probation. Students who failed because of a lack of interest for medical studies are not allowed in probation. Reasons to permit probation are diversified but they usually ensue from student difficulties of medical, financial or psychological nature.
Summary of work: From 1982 to 2002, there were more than 200 students in probation. 56% of them failed to complete their medical studies according to the medical directory of physicians in practice of the province of Quebec. There was no statistical difference in gender or age. We are currently investigating those physicians in practice that were in probation during the study period (the remaining 44%) and we will describe their anonymous practice profile on discipline matters at the college des médecins du Québec compare to an equivalent cohort of physicians promoted without probation.

7X/P10
Social anxiety of Korean medical students
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Background: “Social Anxiety” means “interpersonal anxiety”. To medical students, who have to constantly interact with unfamiliar patients, high levels of social anxiety may lead to psychological distress and social maladjustment. The aim of this study is: (1) to measure and investigate social anxiety levels of Korean medical students; (2) to examine effects of self-esteem on social anxiety; and (3) to identify differences between the effects of autonomous achievement motivation and heteronomous achievement motivation on social anxiety.

Summary of work: The hypotheses of this study are: (1) Self-esteem will be negatively related to social anxiety. (2) Autonomous achievement motivation will be negatively related to social anxiety, whereas heteronomous achievement motivation will be positively related to social anxiety. To assess self-esteem, achievement motivation and social anxiety, self-reported inventories will be used.

Conclusions: This study may show new vision on social anxiety of medical students and provide information needed to develop medical students’ social and psychological welfare.

7X/P11
Alcohol drinking among medical students at the Pontificia Universidad Católica de Chile
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Background: Alcohol drinking is common and culturally accepted in Chile, starting in early adolescence. Summary of work: To characterize alcohol drinking among medical students an anonymous, voluntary and confidential questionnaire was applied to all medical students from 1st to 7th year.

Summary of results: 74% of students answered. Last year consumption reached 89% and last month consumption 81%, increasing from 1st (74%) to 7th year (86%), chi-squared statistically significant, p=0.0035. No association by sex was found. Daily drinking reached 1%; drinking some weekdays 9%, weekend drinking 40% and occasionally during the month 50%. In a typical drinking day 28% had one drink, 31% two drinks and 0.5% had ten drinks. According to sex, 37% of women and 21% of men had 1 drink while 0% of women and 4% of men had 6 or more drinks in a day. (Association statistically significant p=0.0001).

Conclusions: Medical students have high rates of alcohol drinking, increasing along the career. Men drink more drinks than women per drinking day.

7X/P12
Quality of life among medical students at the Pontificia Universidad Católica de Chile
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Background: Quality of life (QOL) is the individual’s perception of their position in life considering culture, values, goals, expectations and concerns. Medical students work hard and they choose to study rather than entertain or relax, thus affecting their QOL.

Summary of work: To assess QOL a questionnaire was designed and validated (63 Likert-type and 14 open questions). After accepting an informed consent students answered the QOL questionnaire.

Summary of results: 547 students answered. Last year consumption reached 89% from 1 to 5 and 33% from 6 to 7 years. 73% report good QOL, 81% are satisfied with themselves and their friends. 84% feel forced not to fail, 56% study too much and 49% recognize being competitive. Only 20% are satisfied with sleeping hours. 38% have experienced professional and personal crisis and 69% have been near burnout. 17% have seen a psychiatrist last year.

Conclusions: Medical students have high academic demands. Some dealt appropriately, others suffered from stress, anxiety or depression. In response to these results a new tutoring activity is being implemented to help students to remain healthy and deal with the demands.

Take-home messages: Medical schools should be aware of the need to protect and improve quality of life among students.

7X/P13
Comparison of the prevalence of psychological morbidities in the same group of medical students in the first and final years of medical school
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Background: Medical school may involve risks to mental health and may affect students’ quality of life.

Summary of work: One hundred students (61% females) were evaluated at the beginning and at the end of the course using a sociodemographic questionnaire, a questionnaire on habits and academic life, and the General Health Questionnaire (GHQ).

Summary of results: Psychological morbidity was 44.6% at the beginning and 40.9% at the end of the course, stress being the most prevalent variable at both moments, principally among migrants (p=0.01). Freshmen have more problems with self-sufficiency; however, as graduating students (65%), they feel incapable of exercising their profession as physicians, even those considered good students. At the second data collection, being married positively affected sleep quality (p=0.04). Among those who reported suicidal thoughts, 50% had general health problems (p=0.01), 47.1% sought psychological help (p=0.01) and 52.9% reported psychosomatic disturbances (p=0.05). Morbidities decreased throughout the duration of the course, coinciding with the perception of the students regarding their academic performance and contradicting concerns with respect to changes in the quality of their life in general.

Conclusions: Stress constitutes part of the formative process, and there is a need to develop preventative actions to strengthen self-esteem and permit students to recognize their fragilities, possibilities and impossibilities.
7X/P14

Using learning contracts in undergraduate medical education: the students’ point of view

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Background: Learning contracts are considered a valid strategy to enhance student-centred learning, especially in the clinical environment. A learning contract includes educational needs, learning goals, strategies to achieve them, and assessment instruments. In negotiating learning contracts, medical students are required to play an active role.

Summary of results: The main difficulty in writing a learning contract was to identify adequate learning goals. Furthermore, students thought that learning goal achievements were not always optimally evaluated. Nevertheless, they were generally satisfied and suggested increasing the tutor training in this learning method.

Conclusions: Medical students’ satisfaction on the use of learning contracts in the clinical environment is high, especially if the achievement of learning goals is properly evaluated.

Take-home message: Tutor training in assessing learning goal achievements is an essential step to introduce learning contracts in the clinical medical training.

7X/P15

7X/P15

Spiritual aspect of medical education

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Background: The hospice service is important due to increase of chronic illness. Although the relieving of spiritual suffering is essential in palliative treatment, the cultivation of spirituality was not well documented in medical education. This study was designed to understand the opinion of students on this aspect.

Summary of results: The freshmen in the year 2007 of the Medical College, National Cheng-Kung University, were the sample evaluated. A questionnaire containing eighteen questions with the following three aspects of spirituality was used: understanding the meaning of spirituality and spiritual care of patients; evaluation of self ability in spirituality; and assessment of different educational needs for spiritual growth. The questionnaire was formulated through discussion of experts, pretested, and with a good internal concordance.

Conclusions: There is a need to help students in their spiritual development. The size of the class, training of teachers, and choice of appropriate teaching materials were the most important parameters for successful teaching of spirituality in medical school.

7X/P16

Making common cause with students - personality development triggered by student involvement

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Background: Putting students’ personality development on a par with their professional development is one of the visions of Germany’s first private University (Witten/Herdecke) since its foundation in 1983. In times of short-running resources and increasing individualisation this ideal receives a new value.

Summary of work: In Integrated Studies of Anthroposophic Medicine and regular medical studies students are involved in a vast variety of topics and organisational structures like curricular or assessment committee. Underlying key elements like: fostering the personality development of students by allowing room for self-reflection with identification of professional AND personal goals; facilitating regular feedback and unveiling the consequences; participating in decision-making and design processes contribute to continuously raising of students’ skills in assuming individual and social responsibility which retroacts to faculty as learning organisation.
Summary of work:

Diabetes is a model of modern chronic disease management, with a patient-centred, multidisciplinary approach. Diabetes affects 3.7% of the general population and 6-16% of hospital beds are occupied by people with diabetes.

Background:

Kingdom)
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Development of a multidisciplinary teaching programme in diabetes for 3rd year medical students

7Y/P2

How the incorporation of clinical aspects into the basic areas modifies the knowledge in a School of Medicine

S Morales-López*, J López-Bárcena, Maricela Jiménez López, J Méndez Antonio, A Muñoz Comonfort, A Cea Bonilla, G. Sánchez Bringas, Milán Chávez (UNAM, Av. Universidad 3000, School of Medicine, Mexico Distrito Federal 04350, Mexico)

Background:

Students of the Faculty of Medicine of the National Autonomous University of Mexico attend 2 years of Basic Sciences at the Faculty campus and 3 in hospitals and clinics outside the campus.

Summary of work:

In an effort to approach these areas of knowledge the faculty has designed some cases to help the students to make the integration of all the basic courses with the clinical ones. The cases are discussed by students with the professors of the different courses they have and after that all the groups have a special session with a clinical physician that makes the integration of the cases at a level the students from the first years in the medicine campus can understand. To make sure that this system is helpful for the students we have conducted an opinion questionnaire with the students from the first to third year. This last group of students have worked this strategy since the first course. Answers were analysed statistically by the use of SPSS program.

Conclusions:

We can conclude from the data obtained that this activity is perceived by students as something useful for learning and the integration of the contents of basic and clinical courses. It is essential to improve information and communication among professors from the basic and clinical areas, so they can help students to apply and integrate knowledge when they discuss the cases. Also case discussion is a way to begin utilizing a model of systematic thinking like clinical method.

Summary of results/Conclusions:

Evaluation suggests that students rate the teaching highly in relation to relevance, usefulness and quality of teaching. 96% felt the sessions complemented their medicine rotation. They appreciate the multidisciplinary teaching and equally valued sessions led by non-medics (podiatrist, dietitian and diabetes nurse). They gained insight into practical aspects of living with diabetes as well as its medical management.

Take-home messages:

Promoting students' awareness and autonomy; Adopting attitudes: students as partners and faculty as facilitator, and Engaging students in active shaping can be driving forces for establishing a culture of a learning and changing organisation.

Take-home message:

Teaching and assessment of students contribute significantly to their stress.

Summary of results:

Response rate: 38.2% (480/1,255). Symptoms of burnout were reported by 56% (240/428). Depression of varying severity was present in 48.6% (197/405). Most significant stressors identified: Long term retention of knowledge; Promotion of every block; An expectation to perform well.

Conclusion:

Burnout and depression is a problem. Students' perceived reasons for these can be addressed. The undergraduate program committee will be asked to: implement teaching and assessment strategies that encourage deep learning; review exam exemption policy; Improve support and counselling services.

What will be presented:

Detailed examples why, where and how students are involved; Strategies and concepts of sustainability of students’ contributions; Effects on faculty and students.

7Y Curriculum: educational strategies

Poster presentation

7Y/P1

How the incorporation of clinical aspects into the basic areas modifies the knowledge in a School of Medicine

S Morales-López*, J López-Bárcena, Maricela Jiménez López, J Méndez Antonio, A Muñoz Comonfort, A Cea Bonilla, G. Sánchez Bringas, Milán Chávez (UNAM, Av. Universidad 3000, School of Medicine, Mexico Distrito Federal 04350, Mexico)

7Y/P2

Development of a multidisciplinary teaching programme in diabetes for 3rd year medical students

Louise Walker*, Nicola Robinson, Andy Smith, Inam Haq, Anna Crown (Brighton and Sussex Medical School, Nutrition and Dietetic Department, Royal Sussex County Hospital, 4 Paston Place (Basement Entrance Sudeley St), Brighton BN2 1HA, United Kingdom)
7Y/P3
Integrating Medicine and Surgery: a unified approach for undergraduate medical education
Eric Lim, Yoon-Kong Loke, Alastair Thompson (Laurence Hunter to present) (The Royal Brompton Hospital, Sydney Street, London SW3 6NP, United Kingdom)

Background: Medicine and Surgery are considered different disciplines, but patients do not present with problems confined or restricted to a particular speciality. Information from two separate sources (Medicine and Surgery) has disadvantages of disjointed presentation, conflicting viewpoints, overlap of background reading, increased expenditure of time and money.

Summary of work: To achieve a patient centred method to teaching, we developed an integrated textbook that presents information uniformly utilising a patient centred approach to management that illustrates when and where medical or surgical options fit into the patient care pathway. In addition, management is presented according to national and international consensus guidelines aimed to bridge the discrepancy between what is taught and what is practised, rather than an arbitrary separation of the two disciplines. We also introduce the concept of peer review to assist in the integration process between other sub-specialities such as general practice, infectious diseases and intensive care medicine.

Conclusions: It is possible to create a patient rather than discipline centred approach for undergraduate medical education that facilitates cohesion of presentation of clinical management.

Take-home messages: Medicine or Surgery should not be viewed as two separate disciplines and can be taught together in an integrated patient centred approach.

7Y/P4
Outcomes of a fully integrated scientific/clinical methodology and medical humanities course in an Italian medical undergraduate curriculum
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Background: Italian undergraduate curricula are traditionally non-integrated ones. We have activated a new undergraduate curriculum (UC) since 1999 with the aim of developing a professional, rather biomedical-psycho-social profile.

Summary of work: The UC is characterized by a multidisciplinary horizontal and vertical integration according to the “inverted triangles” curriculum model. A course of medical and scientific methodology and medical humanities (CMSMH) was phased in six years, representing a structural frame amongst the basic sciences, pre-clinic and clinic phases of the curriculum. CMSMH comprises research, statistic, epidemiology, clinical reasoning, anthropology, psychology, ethics, history, communication skills, multiculturalism, and management.

Summary of results: Students’ anonymous questionnaires revealed positive feedback (years 2006-2007; students interviewed n=2,665; mean percentage satisfaction CMSMH=83,77±6,22; mean percentage satisfaction for all integrated courses of UC=75,49±19,28; t=-1,45; P=0,1528).

Conclusions: A continuing CMSMH is a necessary tool to really integrate the entire UC, to emphasize on self-directed learning, to promote an early clinical approach from the first year, to stress the importance of humanistic sciences in medical studies, and to set the basis for critical thinking and continuing medical education.

Take-home messages: The course improves the students’ adhesion within this modern UC, encouraging them to develop a professionalism identity and interdisciplinary team-building skills.

7Y/P5
Community Medicine - an integrated course
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Background: Integrating the curriculum motivates students by making learning reflect real life. It helps them to see the connections between subject areas and the clinical relevance of the subjects and skills that they are learning. Dundee University has developed a course which integrates public health, primary care and behavioural sciences at a community level in a student’s first 3 years.

Summary of work: Curriculum developers from public health, primary care, and behavioural sciences met regularly to discuss the learning outcomes which they felt medical students needed to meet in relation to their individual disciplines. Themes were developed from these outcomes. Modules were produced which would cover the themes from the perspective of the 3 disciplines. The teaching was delivered by a range of tutors recruited from primary care, behavioural sciences and public health.

Summary of results/Conclusion: A course has been developed which incorporates and integrates learning outcomes from behavioural sciences, primary care and public health which has been delivered to all students in the first three years of a medical curriculum.

Take-home message: Public health, primary care and behavioural sciences can be successfully delivered as a fully integrated course over the first three years of a medical student’s career.

7Y/P6
Early clinical experience facilitates students’ learning of consultation skills
Stig Röjdler*, Gunilla Hellquist, Marie Karlsson-Norén, Kerstin Leander, Bernhard von Below, Mats Wahlqvist (Dept of Community Medicine and Public Health/Primary Health Care, Sahlgrenska Academy at Gothenburg University, Gothenburg SE-405 30, Sweden)

Background: In the 1990s, students of Gothenburg met patients in the 5th term, in the Consultation skills (CS) course, comprising 10 weeks. In 2001, the curriculum was reorganized and a new strand of Early Professional Contact (EPC) was launched. EPC comprised 16 days in clinical practice, evenly distributed over the two preclinical years. The CS course was shortened to five weeks. In EPC, educated facilitators gradually introduced four students to physician’s professional work and the consultation, including group reflection. Through the change process, the procedure of the practical examination in the CS course was kept constant.

Summary of work: Students’ consultation were assessed in three areas: communication skills/history taking, examination skills and writing up a medical record. Examination results before and after introduction of EPC were obtained, and tutors’ oral reports.

Summary of results: Results display that less EPC students failed in the CS practical examination. In particular, communication skills/history taking was improved. CS tutors reported that EPC students were generally more relaxed and prepared when training consultation skills.
Conclusions: The EPC process appears to facilitate students’ learning of consultation skills. Examination results and tutors’ reports indicate that a longitudinal strand of early professional contact eased students’ transition to clinical education.

7Y/P7
Motivating medical students to learn teamwork skills
Matti Aarnio*, Juha Nieminen, Eeva Pyörälä, Sari Lindblom-Ylänne (Research & Development Unit for Medical Education / University of Helsinki, P.O. Box 63 (Haartmaninkatu 8), Helsinki FI-00014, Finland)

Background: This study examines how to improve medical students’ perceptions of the usefulness of teamwork skills training.

Summary of work: First-year medical students participated in teamwork skills training in two consecutive years. The feedback from the first training suggested that we needed to make the training more inspiring for medical students. We thought the training had relevant theory and useful exercises, so we only changed the introduction to the subject. In the first training, teamwork skills were introduced as an essential competence in PBL-tutorial sessions and in health care teams. In the second training, we sought to point out more clearly the clinical relevance in the introduction. We presented that poor teamwork is a significant cause of medical errors. Comparing the feedback from both trainings, we analysed how the revised introduction affected students’ perceptions of the usefulness of the training.

Conclusions: Students’ perceptions of the usefulness of the training were significantly higher after the second training. These results support earlier findings that clearly stated clinical relevance motivates medical students.

Take-home messages: When introducing multidisciplinary subjects to medical students, it is important to think through the clinical relevance of the subject and how it is introduced to medical students.

7Y/P8
Opinion on new integrated curriculum in Obstetrics and Gynecology of 4th and 5th year medical students at Saraburi Regional Hospital, Thailand
Mallika Suwanakiri*, Wanpen Buathong (Saraburi Regional Hospital, 18 Tedsaban4 Rd, Pakpreaw, Muang District, Saraburi 18000, Thailand)

Background: Development of integrated curriculum for year 4 and 5 medical students at Saraburi Regional Hospital started in 2007. For year 4, the students went through medicine-based, surgical-based, pediatric-based and OB-GYN-based, 10 weeks for each rotation. For year 5, students rotated through medicine-based (8 wks), surgical based (8 wks), electives (12 wks) and holistic medicine (4 wks).

Summary of work: We surveyed the opinion of year 4 and year 5 medical students on the new integrated OB-GYN curriculum by questionnaires. The data were analyzed for percentage, average range and standard deviation.

Summary of results: Fifty-six students (93.33%) returned the questionnaires. Twenty four (42.85%) were male and 32 were female (57.14%). The students agreed on proper course time (82.1%), on content (58.9%), 85.7% of students preferred the course to be delivered in both year 4 and year 5. They agreed on using both formative and summative assessment to assess the outcomes. The most useful learning activities in their opinion were bed-side teaching followed by topic discussion.

Conclusion: The opinion of year 4 and 5 medical students on the new integrated OB-GYN curriculum are the same in the course time and on the content but they prefer to learn in both years. Considering the class average grade (3.15), we may develop our next curriculum based on their feedback.

7Y/P9
Health promotion integrated with education
Prawit Wannaro*, Jeerawan Wannaro, Wanida Sae-ung (Medical Education Center-Hatyai Regional Hospital, Songkhla 90110, Thailand)

Background: Health promotion is required to be integrated into medical education.

Objective: 1. Evaluate knowledge and understanding of medical teachers regarding how to teach health promotion and how to take it into practice. 2. Evaluate confidence of medical teachers about health promotion. 3. Survey needs of medical teachers for any assistance in health promotion in terms of teaching and practicing.

Summary of work: 1. Questionnaire (Ottawa charter). 2. Analyze with SPSS.

Summary of results: Sixty eight questionnaires (from 105) were returned (64.8%). About 2/3 of medical teachers were moderately to markedly confident in integrating health promotion into medical education. About half of them used role model, case study and demonstration as methods of teaching. About half of them did not know health promotion of Ottawa charter. Topic that they knew most about was developing personal skills. However, it was also the topic that medical teachers were keen to know more about, followed by re-orienting health care services and creating a supportive environment.

Conclusion: Health promotion has been integrated with education and about half of medical teachers need to develop how to teach with integration.

7Y/P10
Integrating Emergency Care into the PBL MBChB Curriculum at the Nelson R Mandela School of Medicine
Saras Reddy* (University of KwaZulu-Natal, Nelson R Mandela School of Medicine, Durban 4041, South Africa)

Background: The Basic Emergency Care Course has been taught in the MBChB Curriculum since 1996. In 2001, there was a change to a problem based curriculum. The study looked at the difference between the students who learnt the content of the course in the traditional format versus the pbl format.

Summary of work: The study involved students and staff presently working with the MBChB Curriculum at the Nelson R Mandela School of Medicine. A questionnaire containing both a rating scale and open-ended questions was designed. The purpose of the questionnaire was to ascertain whether the students were able to perform the various emergency skills in the Lab (pre-clinical) setting and then perform these emergency skills on real patients in the clinical situation.

Summary of results: The students in the Traditional Curriculum, although being able to perform the clinical skills on real patients, seemed less confident and did not have a structured approach to patient care, whereas the PBL students seemed very confident and had a systematic approach to patient care.

Conclusion: These differences may be attributed to the teaching and learning styles of the students and Tutors involved.
7Y/P11
Analysis of integrated system of education implementation
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Background: To realize higher medical education reform, in 2001 Kyrgyz State Medical Academy (KSMA) implemented an integrated system of education (ISE) at the “General Medicine” faculty and “Pediatrics” faculty. First graduation of ISE students took place in 2006. The goal of the work is analysis of results of experimental implementation of ISE in KSMA.

Summary of work: 446 students and teachers completed a questionnaire to study attitudes to ISE, efficiency of material mastery, module teaching quality and improvement of the educational process.

Summary of results: Results of the questionnaire showed what subjects are considered to be the most complicated for students, quality of module teaching, efficiency of training material mastering, and individual growth. Opinions regarding ISE differ greatly: 76% students and 41% teachers support it. Cut of knowledge to check “knowledge survival” had been assessed. Students answered 100 questions of computer-based testing. The following scale of grades was used in questionnaire: 0-57 - unsatisfactory, 58-75 - satisfactory, 76-85 - good, 86-100 - excellent. There were no ‘unsatisfactory’ grades in the results.

Conclusions: The data demonstrate positive dynamics in progress of students in ISE in comparison with the traditional system in general.

Take-home messages: The future of ISE demands the further improvements of conditions of study, development of pilot curriculum, training teachers at leading medical universities, and interchange experience by a monitoring of the educational process.

7Y/P12
Interdisciplinary engagement: the power of synergy in developing an integrated, outcomes based Clinical Medical Practice program
Patricia Arangie*, Glynis Pickworth, Jannie Hugo (University of Pretoria, Department of Family Medicine, PO Box 667, Pretoria 0001, South Africa)

Background: The healthcare needs of South African citizens motivated the decision to introduce mid-level workers for each of the categories of healthcare. For medicine this resulted in the creation of a three-year degree in Clinical Medical Practice.

Summary of work: The scope of practice and outcomes were determined through research on the skill and clinical support needs at the district hospitals and collaboration among representatives from every Family Medicine department in the country. Consultation with departments supporting medical education defined essential elements to support a problem oriented case based integration of basic sciences with clinical practice. Subsequently outcomes based modules with accompanying learning and assessment criteria were developed. Specific lesson plans were designed for both didactic and clinical courses. A “train the trainer” program was developed to address the teaching and assessment requirements of the new program.

Conclusion: A curriculum that is horizontally and vertically integrated across all didactic and clinical practice courses was developed.

Take-home message: Interdisciplinary cooperation within a medical school can produce a novel educational program that has the support of basic sciences, clinical medicine, nursing and hospital administrators.

7Y/P13
Integration of preclinical and clinical teaching in Singapore: the perception of medical students and educators 10 years later
R C S Seet, S M Saw, K Singh, P Gopalakrishnakone (Yong Loo Lin School of Medicine, National University of Singapore, 117597, Singapore)

Background: Following a curricular reform in 1998, we surveyed medical students and educators to obtain their perception on these changes.

Summary of work: A cross-sectional survey of students and educators was done using 20 statements that enquired on their perception of changes. We included 840 students and 246 educators in this study.

Summary of results: Compared to educators, students opined that integration will produce better doctors, current teaching of clinical subjects has limited input from preclinical educators and early exposure of students to clinical subjects is useful. More educators believed that clinicians do not have much time to teach, preclinical educators tend to teach materials that are not clinically relevant. Preclinical educators opined that preclinical subjects should be taught by both preclinical and clinical educators, and clinicians do not feel confident teaching preclinical subjects. Clinicians believed that it is difficult to apply clinical teaching to what has been learnt in the preclinical years and monetary reward for teaching is important. Senior educators believed that teaching is their priority and are interested to assist in the development of the integrated curriculum.

Take-home message: Understanding the perception of students and educators is pivotal for seamless integration. Teaching resources and incentives are needed for the success of these changes.

7Y/P14
Towards the development of civic responsibility amongst undergraduate Irish health care professionals – a service learning model
Margaret McGrath*, Ruth McMenamin*, Sinéad Vine (National University of Ireland, Áras Moyola, Galway, Ireland)

Background: Undergraduate programmes in Occupational Therapy (OT) and Speech and Language Therapy (SLT) at the National University of Ireland, Galway use service learning (SL) to facilitate students to become healthcare professionals with a sense of civic responsibility.

Summary of work: Preparatory work for service learning modules included: identification of learning outcomes, collaboration with community partners, provision of service by students and evaluation of the process. OT students focused on emerging areas of practice. Working in groups students collaborated with community partners to complete comprehensive occupational therapy needs assessments for the community organisations and service users. SLT students were trained as conversation partners and matched with people with aphasia. Students’ weekly conversational visits linked community service with academic study and resulted in a new model of service delivery.

Conclusions: In these modules students invested their knowledge and resources to address needs identified by the community partners. The outcome of this teaching innovation was the development and delivery of innovative primary care services for the local community.

Take-home message: Collaboration with community organisations facilitated the implementation of service learning. As a result students developed a sense of civic responsibility in addition to developing clinical skills.
7Y/P15

Program evaluation of General Practice rotations in undergraduate medical education
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Background: General practice rotations were introduced for undergraduate medical students at the University of Berne in Switzerland in 2007. The program allows students to learn in the setting of a general practitioners’ (GP) office (8 half days in years 1 to 3 and a three week block rotation in year 4).

Summary of work: The aims of the first program evaluation phase were to evaluate the feasibility of integrating students in the GP’s work, to study the influence of the mentorship on students’ perception and attitude towards being a GP, to capture the benefits of early patient contacts, and to validate the achievement of our learning objectives one year after the program implementation. We started the evaluation by registering the participants’ attitudes and aims before they entered the program (baseline questionnaire). A second questionnaire, repeating some of the baseline questions and additionally addressing new experience, was administered after one year of program experience. To prove achievement of learning objectives students and preceptors documented predefined minimal learning standards.

Summary of Results/Conclusions: Questionnaires and achievement of minimal learning standards were analysed quantitatively and qualitatively. Results and conclusions will be shown and discussed.

7Y/P16

Training course on family medicine: an example of Community-Based Education for medical students
Francesco Vitiello*, Vincenzo Contursi, Antonio Quaranta, Gilda Caruso (‘Faculty of Medicine, University of Bari (Italy); ‘Italian Academy of Family Physicians, Polyclinico, Piazza Giulio Cesare, Bari 70124, Italy)

Background: Community-Based Education is a learning activity carried out in both health and social services. In this framework, General Practitioners’ (GPs) activities include community education to public health problems, health promotion, disease prevention and chronic disease management. Thus, by attending GPs’ practices, medical students can acquire the capabilities to identify and manage some of the most important health problems of the community.

Summary of work: The course (which is part of the curriculum of the Bari Medical School) is designed on a four-week period during which a collaborative “clinical work-based training” between the student and a GP tutor is established. The learning activity is introduced by a seminar dealing with the theoretical bases, the goals and the organization of the internship, and is ended by a post-internship meeting during which a self-evaluation questionnaire and an “evaluation form” of the tutor are administered.

Summary of results/Conclusions: Since 2004, more than one thousand students of the 6th year have attended the practices of 350 GPs. Students’ feedback, collected at the end of the course, revealed their “perception” of a better-than-before understanding of the “Primary Care System” and a very good opinion on the training methodology and on the tutors’ activity. The results suggest that a training course on family medicine should become a full-fledged part of the education program of medical students in all Medical Schools.

7Y/P17

Innovative way of teaching in community oriented curriculum for medical students
Zvonko Sosic*, Vesna Juresa, Gordana Pavlekvic, Luka Voncina (University of Zagreb, Medical Schol, Andrija Stampar School of Public Health, Rockefellerova 4, Salata 3b, Zagreb 10000, Croatia)

Background: To make medical students aware of the role of community and social factors in health, occurrence of diseases, and their importance in providing health care for every member of the community, the Medical School of Zagreb University since 1952 has been engaging students in field activities to practice “Health in Community”. The teaching activities are organized by the Andrija Stampar School of Public Health, with students living out of Zagreb in a small community for one week. The main purpose of practical lectures is to study living conditions and life styles in direct communication with people in their homes. Students are not simply collecting information, but they are also experiencing and “feeling” most of the important facts in delivery of health care.

Summary of work: This year an innovative method in data collection was introduced. Students are equipped with iPAQ hx2100 pocket PSSs. The big advantage of this approach, apart from the practical side of assuring complete, correct, and logical data, is the possibility of immediate data processing and analysis, making information collected much more useful in terms of better understanding the sense of information. The preliminary results of this innovative approach in teaching “Health in Community” will be discussed.

7Y/P18

Problem solving by medical students and community participation, 2007
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Background: A suitable method to solve the community’s problems was to learn and to be part of the community, to live and learn their real life, to study their problems and set priorities to solve the problems with them.

Summary of work: In the class there was a lecture and practice to design a questionnaire which consisted of demographic characteristics, health status, health facility visit, infrastructure, employment and education. In the village, 12 students were divided into 2 groups, one group staying in Ma Kham Ted village and the other group in Tha Go village. They interviewed the families’ representatives. Data were collected and analyzed by percentages. The criteria of priority setting were severity, magnitude, feasibility and community concern. One problem was selected to be solved by students and community participation.

Summary of results: 68 and 213 families were interviewed by groups 1 and 2. Basic demographic characteristics were similar. Three problems were listed by the 2 groups: using the wrong methods of waste and garbage disposal, problems with mosquitos and rats, and exercise less than 3 times a week. The first priority which they needed to solve was solid waste management. A group discussion took place on the topics: waste handling and separation, waste disposal, compost making, effect of burning waste and global warming. The activity performed was cleaning around the village planting a tree, and a demonstration of bio-composting and water making.

Conclusion: To learn and live in a real life situation in the village was a suitable method for the students.

Take-home messages: The methods will be applied to other groups.
Background: A community-oriented teaching learning process is mandatory for Brazilian Medical Curricula, since publication of Curricular National Guidelines by the Ministry of Education in 2001. Marilia Medical School implemented its new medical curriculum in 1997.

Summary of work: The project has been divided in three phases: phase 1: temporal coordination of 4 components (step 5 of integration ladder) around major organ-system blocks. Step 2: adding case-based discussion to each organ-systems blocks (correlation). Step 3: multidisciplinary approach of four components (step 9 of integration ladder). A curriculum committee has been organized by representatives of all involved departments. Several meetings have been held by faculty members of these departments to convince them. Define time-tableing of the new blocks has been confirmed and the first block was delivered in early March 2008.

Summary of results: An early survey of students shows that more than 90% of them are supportive of changes and meanwhile some of them are sceptical about the extent which the planned curriculum will be really delivered. The separated content of these 4 important courses has led to confusion and also surface learning of the students. Examination course are totally separated from these organ-systems and arranged at the end of the year. The separated content of the second block (Pathophysiology) is not always useful for the students. The separated content of the third block is not useful for the students and the teaching staff because of time-tableng.

Summary of results: The curriculum committee has adopted its revision. This phase consists of separate courses on internal medicine, systemic pathology, pharmacology and also history taking and physical examination. The history and physical examination course are totally separated from these organ-systems and arranged at the end of the year. The separated content of the second block (Pathophysiology) is not always useful for the students. The separated content of the third block is not useful for the students and the teaching staff because of time-tableng.

Conclusion: Even early stages of integration can lead to increased satisfaction of students and faculty members. The mid and long term impact of this revision needs further evaluation.
7Z/P2
High inter-rater reliability in a questionnaire to assess access to teaching for Specialist Registrars/ Specialist Trainees
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Background: Specialist Registrar and Specialist Trainee (SpR/ST) work-based based education can be threatened by the need to cover "service" commitments. It is useful for SpR/ST trainees and trainers to know how much exposure to training actually occurs.

Summary of work: Questionnaires were completed by all SpR/STs in Geriatric Medicine in the North Western Deanery, asking how many sessions (eg. clinics, ward rounds, consultations) they undertook in the 11 subspecialties of Geriatric Medicine. The total exposure to training after night shifts, days off etc. was then calculated. The process was repeated after 1 year with the same training posts and different trainees. Inter-rater reliability was calculated, comparing the training time calculated in 2006 and 2007. This gave a reliability score of 0.99 using Ebel's formula (based on comparison between standard deviations and means).

Conclusions: The high degree of stability when the questionnaire was repeated using a different group of raters to rate the same training posts shows that the method of assessing access to training has validity.

Take-home message: If the time taken for other activities is scrupulously taken into account, then the access of SpR/STs to training can be reliably calculated using a questionnaire.

7Z/P3
Andalusian Public Health System teaching tool for specialised training: PortalEir
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The PCCEIR (Complementary Common Programme for specialists in health sciences) was designed and implemented by the APHS as a curricular strategy for the development of transversal skills common to the different specialised training plans with the objective of assisting the preparation of professionals in order to confront the vertiginous development of new knowledge, the dynamic conditions of health organisations and the use of new information and communication technologies by promoting resources to improve communication and continuous self-learning. The APHS strategic tool for delivering the PCCEIR is the PortalEir Web Platform which is defined as an instrument for Knowledge Management and provides a virtual environment used for work, training and coordination between the teaching organisation and the resident intern specialists. PortalEir functions as a training platform for the development of transversal skills for all residents as well as for the design of teaching and evaluation methodologies related to Health Sciences in Andalusia.

7Z/P4
Teaching and assessing competencies in Graduate Medical Education
Susan Baillie*, Margaret L Stuber, Hannah Zackson, Brenda Bursch, Ian Cook (David Geffen School of Medicine, 760 Westwood Plaza, Los Angeles, CA 90024-1759, United States)

Background: Competency-based teaching and assessment has become the standard for Graduate Medical Education (GME) in the United States. Most programs are experienced and comfortable teaching and assessing the essential knowledge and clinical skills. However, teaching and assessing Professionalism, Practice-based Learning, and Systems-based Practice are more challenging for many GME programs.

Summary of work: UCLA has implemented a new program to help GME programs meet the challenge of assessing these competencies. We have held interactive meetings with the Training Directors, Training Coordinators, and Chief Residents to identify and address specific issues of concern. An on-line evaluation program has been adopted school-wide. Programs have the option to use assessment tools we have developed for the School, or to develop or adapt one unique to a training program. Programs use a 360 degree assessment approach. We are now developing remediation strategies, with input from the training programs.

Conclusions: Addressing the teaching and assessment of some of the competencies for Graduate Medical Education is a challenging task. Working both within and across training programs can be helpful in creating the tools and faculty development required.

Take-home messages: A school-wide approach to assessing competencies in Graduate Medical Education appears feasible, effective and acceptable.

7Z/P5
Career advice and guidance for Anaesthetic trainees – reflection of a college tutor in Anaesthetics
K Mukherjee* (Medway Maritime Hospital, Level 3, Green Zone, Windmill Road, Gillingham ME7 5NY, United Kingdom)

Background: Career advice and guidance is now an integral part of post graduate training. Generic career advice via the deaneries is embedded in the Foundation programme. However, career advice and guidance specific to Anaesthetics may not always be available.

Summary of work: KM, as college tutor over a three year period provided career advice for 24 trainees at SHO level, 28 in Higher Specialist training and 12 non training grade doctors.

Areas of interest for the trainees: College Examination 52%; Subspeciality training 62%; Audit and Research 90%; Study leave and appropriate courses 80%; Application and interview advice for higher specialist training 64%; RITA process 60%; Advice regarding poster/platoform presentations 40%; Application/interview advice for consultant post 30%; Opportunities for flexible training 8%.

Conclusions: Career advice and guidance forms an important part of College tutors work and specific time needs to be allotted during job planning process. Special skills which are necessary include good empathy, listening skills, cultural awareness and trainees' needs awareness.

Take-home messages: College tutors need to develop specific knowledge and skills to deliver career advice and guidance. Royal college and local deaneries need to provide specific courses to develop these skills.

7Z/P6
Demand and evasion of candidates to residency in Head and Neck Surgery
Rui Celso Martins Mamede*, Francisco Veríssimo de Mello Filho, Hilton Marcos Alves Ricz (Medical School of Ribeirao Preto, Av. Bandeirantes, 3900, Campus USP, Ribeirao Preto - SP 14048-900, Brazil)

Background: The objective of the study was to verify possible determinants of diminishing of applications to Head and Neck Surgery (HNS) residency program and of evasion from this program.
Summary of work: The data (information about the number of doctors enrolled, entering and leaving the medical residency - MR) were collected at the Center of Human Resources – University Hospital.

Summary of results: From 1958 to 1991 28 professionals entered, 20 of whom completed the program. From 1982 to 1992 (prerequisite of 2 years of General Surgery - GS) 29 residents entered, and only 11 concluded the program. From 1993 to 2007 (prerequisite of 1 year of GS and 1 year of Otorhinolaryngology – ORL) 44 residents entered, all of whom concluded the program.

Conclusions: There was a growing demand since 1958, with a tendency to a fall with the requirement of indirect access to the specialty. Evasion during access with a prerequisite of 2 years of GS was greater. The largest number of graduates is related with access with the prerequisite in GS and ORL.

Take-home messages: Demand and evasion of medical residents may be influenced by the requirements for admission in residency programs.

7Z/P7
Mentor system in Anaesthesia
Anup Bagade* (Conquest Hospital, St Leonards-on-Sea, East Sussex TN37 7UY, United Kingdom)

Background: It is clearly documented in recent literature that junior doctors should have a system of support in place throughout their training. In 1997 the AAGBI produced a document titled 'Stress in Anaesthetists' and outlined mentoring as part of the stress support system. In 1998 the Standing Committee of Postgraduate Medical Education (SCOPME) produced a document relating to mentoring as part of the support structure for junior doctors. It concluded that mentoring can form a valuable part of a framework of support but it should be entirely voluntary and not superimposed.

Summary of work: A questionnaire was distributed to 130 trainees in the South Thames region out of which 62 were completed and returned.

Summary of results: Of the 93 respondents 57 trainees knew who their mentor was and had met them in this role. A significant number of trainees felt unsupported academically and emotionally in their department and suggested that a mentor could have helped them with such issues.

Conclusions: Without providing the structure of mentor system at a local level for all trainees, we are ignoring the recommendations of both the AAGBI and an extensive report commissioned by the DOH.

7Z/P8
Postgraduate audiology curriculum for ear nose and throat (ENT) residents
E Kentala* (Helsinki University Central Hospital, PB 220, Helsinki 00029 HUS, Finland)

Background: Postgraduate medicine is high-stake education and practice. In Helsinki University Hospital each ENT resident has only a 2-month rotation at the audiology department during their 5-year specialist training.

Summary of work: Together with residents a structured progressive syllabus was developed for the rotation. The goal was to support student-directed learning, but at the same time provide sufficient exposure and experience in audiology. Different professions, such as speech therapist, psychologist etc., who worked at the audiology department, took part in resident training.

Summary of results: The syllabus contained clinical duties and educational activities. Educational activities included teaching assignments for both medical students and patients (with their families). Residents could also follow consultants' clinical work. Reading assignments were discussed during weekly meetings with the consultant. During the rotation the resident prepared a project work, which was 1) educational, 2) science related or 3) administration related.

Conclusions: Structured approach with individual flexibility put the limited time into best use. Special attention to communication skills eased the work at the department.

Take-home messages: Individual goal setting enhanced residents' participation in the audiology department's activities. Attitudes and ethics need to be kept on the learning agenda.

7Z/P9
Are the core competencies of the ST programme in general surgery realistic?
Ryan Baron*, Marco Baroni (Leeds Vascular Institute, The General Infirmary at Leeds, Great George Street, Leeds LS1 3EX, United Kingdom)

Background: The Intercollegiate Surgical Curriculum Project (ISCP) has been developed to help address perceived inadequacies in surgical training. The assessment system is designed to assess all the domains of good medical practice utilizing a number of assessment tools. Direct observation of procedural skills in surgery (DOPS) are used by the trainer and trainee to assess progress and competency through the surgical curriculum. Core index procedures are defined for each specialty and level of trainee. There is some concern amongst current ST1 and ST2 trainees that they are not being exposed to the core competencies required to progress during their placements.

Summary of work: All ST1 and ST2 trainees in general surgery within the Yorkshire School of Surgery were identified. A questionnaire was distributed, and responses analysed against the core competencies as set out by the ISCP.

Conclusions: We present the results of our questionnaire. Whilst a move towards competency based assessment and a formal surgical curriculum is a positive one, assessments and core competencies need to reflect the everyday work of surgical trainees.

Take-home message: If trainees are not being exposed to the required index procedures either training posts or index procedures need to be modified.

7Z/P10
A comparison of the quality of care for elderly patients by practicing physicians in Internal or Family Medicine residency programs in the United States
Lorna Lynn, Lisa Conforti*, Brian Hess*, Gerald Arnold, Weifeng Weng, Rebecca Lipner, Eric Holmboe* (American Board of Internal Medicine, 510 Walnut Street, Suite 1700, Philadelphia 19106, United States)

Background: Physicians and healthcare systems need to be prepared to provide services known to decrease morbidity and improve quality of life for an aging population.

Summary of work: The Care of Vulnerable Elderly Practice Improvement Module (CoVE PIM) is a web-based tool using chart abstraction, patient surveys and a practice-system survey to generate performance reports focused on key aspects of care for patients >75.
Performance of 134 practicing internists and geriatricians (3,442 patients) and trainees in 54 internal and family medicine US residency programs (2,259 patients) is compared. Patients under training program care were less likely to be screened for cognitive impairment (12% versus 55% for practicing physicians), falls risk (17% versus 62%) urinary incontinence (52% versus 94%), and hearing loss (14% versus 43%). Similar gaps exist for follow-up of falls and incontinence, functional status assessment, and addressing end-of-life preferences.

**Conclusions:** Healthcare services specific to elderly patients are often not provided. Quality gaps are significantly pronounced in training programs, raising serious questions about current training models in geriatrics for residents.

**Take-home messages:** Care for elderly patients in training programs is poor. Improvement depends on improving practice systems and training faculty to facilitate acquisition of essential knowledge, skills and attitudes.

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**7Z/P11**

**Evaluation of residents using the 360-degree assessment method: first results from Turkey**

**Yesim Senol**, Özlem Döcük, Cem Oktay (Akdeniz University, Faculty of Medicine, Antalya 07070, Turkey)

**Background:** The aim of this study was to test the applicability of the 360-degree assessment method in Turkish setting of postgraduate medical education and find out the improvement of the areas.

**Summary of work:** Using the competencies framework of the The American Accreditation Council for Graduate Medical Education (ACGME) a 71 item pool was formed and based on evaluation aspects of possible evaluator groups, converted to seven different evaluation forms for the following groups: teachers (faculty), nurses, peers, secretaries, auxiliary staff, patients, and self. Twenty three residents at the Dermatology and Emergency Medicine Departments voluntarily participated in the study. At the data analysis process, mean scores, internal consistency scores were measured and evaluator groups' scores and resident's ranks in competency areas were compared to find out differences.

**Summary of results:** A total of 1,171 forms were completed by seven groups to evaluate 23 residents. All clinic staff participated in the process. The reliability coefficient for the faculty members was 0.99 while it was 0.60 for the auxiliary staff. Low scores were clustered.

**Conclusions:** Our results show that the 360-degree assessment is very much welcomed by the evaluator group and residents and the method is acceptable in a Turkish setting of postgraduate specialist training.

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**7Z/P12**

**What motivates doctors to sit the Royal College of Paediatrics and Child Health's Diploma in Child Health?**

**A Reece**, L Davis, P Todd, M Bellman, S J Newell (Royal College of Paediatrics and Child Health, 5-11 Theobalds Road, London WC1X 8SH, United Kingdom)

**Background:** The Diploma in Child Health (DCH) is a multi-station assessment offered by the Royal College of Paediatrics and Child Health (RCPCH), assessing clinical skills aimed principally at General Practitioners (GPs) who have completed a 4-6 month period of training in paediatrics. We report an audit of 13 centres over 2 diets in 2007.

**Summary of work/results:** Data from 37 examiners and 211 candidates revealed: Motivation for over 50% was to improve knowledge, to get a qualification, or for GP training. The majority were encouraged to sit the exam by supervisors or colleagues; just over half of candidates rated DCH important for their paediatric career compared to 91% for their GP career; A large majority found the examination helpful for assessment of communication and child development skills.

**Conclusions:** Numbers of candidates applying to sit DCH have increased significantly. Candidates are not paediatric consultant trainees but largely career GPs. DCH is not compulsory but is rated important by trainees and supervisors.

**Take-home messages:** A Diploma in Child Health, separate from entry level qualification for specialist paediatric training, is popular among doctors who care for children. They perceive it to be professionally advantageous.

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**7Z/P13**

**The Notes Project: validating a quality measurement tool for hospital progress notes**

**Michael Leise, Robert Huebert**, Nandan Anavekar, Thomas Beckman, Denise Dupras, Robert Ficalora, Joseph Kolars, Amy Oxenentko, Darcy Reed, Kris Thomas, Kyle Klarich, Furman McDonald (Mayo Clinic, College of Medicine, 200 First Street SW, Rochester 55902, United States)

**Background:** Transitions of providers during hospitalization are increasingly common due to duty hour restrictions. These transitions demand greater reliance on hospital notes to facilitate communication between physicians and allied health professionals. We propose a structured hospital note format assessed by a quality measurement tool will have positive downstream effects on health care efficiency, quality, safety, and cost.

**Summary of work:** Tool validation was pursued to assess specific structural components of daily hospital notes related to quality documentation. Fifty intern progress notes were randomly selected from the electronic medical record. Six faculty members of the Mayo Clinic Internal Medicine Residency applied the assessment tool to each progress note masked to author identity.

**Summary of results:** After application of the tool to each note, results will be compiled, analyzed, and reported using a kappa statistic to assess inter-rater reliability. Statistical analysis and results will be represented.

**Take-home messages:** The end point is a validated measurement tool that will be utilized to give feedback to residents on how to construct a standardized, quality daily note.

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**Posters**

**7AA**

**Clinical teaching 1**

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**7AA/P1**

**Evaluation of Standardized Patient Admission Order Sets (PAOS) as an educational tool for medical students**

**R Cavalcanti**, Y Lee, R Sargeant, O Mourad, D M Panisko (University of Toronto, Toronto Western Hospital, EW 8-420, 399 Bathurst St, Toronto MST 2S8, Canada)

**Background:** Health-care institutions increasingly adopt standardized patient admission order sets (PAOS) to improve quality of care, which replace direct admission order writing by medical trainees. Impact of this shift in practice on medical education is unknown.
Exposure of students to choices of standard therapies and investigations at point-in-time point-of-care, in the PAOS, may enhance knowledge and learning. Conversely, direct provision of these choices may reduce active problem solving and learning, and may reduce knowledge retention.

Summary of work: Two teaching hospitals implemented PAOS in distinct clinical areas (alcohol withdrawal and obstructive pulmonary disease). Disease specific knowledge and order-writing ability in these areas, by senior medical students rotating in Internal Medicine, were tested at the end of their rotation.

Summary of results: This is a work in progress with clinical exposure being 50-80% and 42 students enrolled. The effect of exposure to PAOS on students’ disease specific knowledge, compared to controls unexposed to PAOS, will be determined.

Conclusions: This is one of the first studies to evaluate the educational impact of PAOS.

Take-home messages: PAOS have potential for positive or negative impact on medical education. Complimentary curricula may need to be introduced to ensure that learning is not affected.

7AA/P2
From theory towards practice: how to begin clinical education
Stefanie Balzeret*, Sonja Kukuk, Anja Roeder, Elisabeth Berger, Katrin Peters, Marzellus Hofmann (Universität Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten 58448, Germany)

Background: At the University of Witten/Herdecke the students begin their practical clinical education at the end of the 2nd year. Up to winter term 2005/2006 at this point of the curriculum the students had to choose an individual sequence of ten given disciplines each referring to one of two sub-units called non-operative and operative disciplines. As a consequence a student could start with a two weeks period of dermatology, followed by one week of ophthalmology without learning history taking and physical examination in internal medicine first.

Summary of work: The main criticism of students and tutors was that in this way the individual disciplines’ sequence of each student was accidental rather than systematically planned. During the period 2005/2006 in a number of meetings ideas for a curriculum change were discussed by students, medical teachers and the coordinating office for medical education.

Conclusions: The following aspect had to be regarded: all students should start at the same time with a six weeks period of internal medicine to train the basic skills on real patients as a preparation for the following special disciplines.

Take-home message: As the new curriculum was implemented in winter term 2006/2007 it led to a systematically planned beginning of the practical clinical education.

7AA/P3
The Medical Algorithm Project (www.medal.org) - a web-based resource for medical education
John R Svirbely*, M G Sriram Iyengar, Jack W Smith (Trihealth Hospitals, 375 Dixmyth Avenue, Cincinnati, Ohio 45220-2489, United States)

Background: The biomedical literature contains thousands of computational and mathematical techniques that are useful in the teaching and practice of medicine. These medical algorithms include scales, scores, mathematical formulas, prognostic and diagnostic criteria. Availability in a centralized location makes them accessible to medical and nursing educators.

Summary of work: Since 1998 we have been engaged in identifying, documenting and converting medical algorithms from the peer-reviewed biomedical literature to computer form. The Medical Algorithm Project (www.medal.org) currently contains over 12,000 algorithms in 45 medical domains encoded as Excel spreadsheets, each with documentation and references. Interactive web-forms are available for 400 algorithms. Current research is directed in information retrieval, point of care computing, user modeling and interfacing to the electronic health record (HER).

Summary of results: Medal has over 93,000 registered users at universities and biomedical facilities from over 100 countries worldwide. 40% of registered are physicians and 40% are medical/nursing students.

Conclusions: Manual systems may limit the use of evidence-based methods. Ready availability of concise information at a single source can improve student education and patient care.

Take-home message: Medal contains a large amount of medical knowledge that can be used to teach medical and nursing students.

7AA/P4
Transferring of learning to the workplace in a meaningful way
Amor Gerber*, Elmie Castleman* (Foundation for Professional Development, PO Box 74789, Lynwood Ridge, Pretoria 0040, South Africa)

Background: Transfer of learning from courses to the actual workplace is a global challenge. The FPD/Yale Advanced Health Management Programme addresses this challenge through a unique assessment methodology.

Summary of work: To support transfer of learning to the workplace, assessment is based on the learners’ real-world. Learners have to identify a work related problem and all assignments are focused on solving the identified problem. The assessment process entails comprehensive project-, monitoring and evaluation - and financial plans; and finally a donor proposal to procure funds to support implementation.

Conclusions: The benefit of the assessment methodology is that learners implement the developed plans in their workplace because of the integrated problem-based approach. It also has an immediate effect in the workplace because they apply what they learn in real life. An example of such successful implementation is the down-referral system that was implemented at a community hospital in 2007. One learner presented her plans to the hospital management which led to procedural and policy change in the province that affected patients positively.

Take-home messages: Assessment could support transfer of learning provided it: relates to the learners’ individual work situation and is integrated throughout the programme.

7AA/P5
Undergraduate logbooks as a driver to learn and engage on early clinical attachments
Stephen Lynch*, Helen S Cameron (University of Edinburgh, Chancellor's Building, 49 Little France Crescent, Edinburgh EH16 4SB, United Kingdom)

Background: Students commencing clinical attachments face many challenges especially instigating encounters with patients and attaining suitable clinical experience. The University of Edinburgh introduced a paper based logbook as a pilot in two modules of Year 3 in the undergraduate medical programme in 2006/7.
Students log patient encounters, clinical experience and practical procedures. Logging the experience permits students to reflect on their clinical encounters. Following initial evaluation and review the logbook was revised and extended to the remaining modules in the current academic year.

**Summary of work:** We have evaluated the impact of logbooks on student learning and experience in this academic year by online questionnaire.

**Summary of results:** The questionnaire was distributed to 256 students and the response rate was 63%. Among the findings were that 43% of students agreed and 35% disagreed that keeping a logbook was a positive educational experience. 40% agreed and 48% disagreed that use of the logbook encouraged them to see patients in a clinical setting. 37% of students agreed and 40% disagreed that keeping a logbook encouraged performance of clinical procedures.

**Conclusions:** We need to explore the negative feedback with students regarding logbook use and other potential drivers.

**Take-home message:** Logbooks can encourage clinical engagement for some students.

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**7AA/P6**

**How far does clinical teaching of the undergraduate medical course at Ramathibodi Hospital Medical School meet the international current trends in clinical teaching?**

**Kanokporn Sukhato*, Saipin Hathirat (Department of Family Medicine, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Rama VI Road, Ratchatheewee, Bangkok 10400, Thailand)**

**Background:** Although the new curriculum was developed at Ramathibodi in 2004 to meet new educational ideas, gaps remain between trends in clinical teaching and existing educational practice.

**Summary of work:** An iterative qualitative method, which consisted of focus group interviews, key informant interviews and document analysis was performed.

**Summary of results/Conclusion:** The new curriculum goes part way to following modern trends in clinical teaching: Early introduction to clinical practice, Patient-centred approach, Apprenticeship to systematic approach, Multi-professional teaching and learning, Focus on the clinical setting, and Reflective practice. However, a number of further improvements could be introduced to build on the work already undertaken. The presenter will outline the current situation of clinical teaching and opinions about some ways to improve it.

**Take-home message:** There is no need to be in the new trend of clinical teaching. Each medical course or institution should select appropriate clinical teaching to fulfill their educational goals and the need of the national health care system. To compare our own curriculum with the new trend of clinical teaching will help us to adapt our medical curriculum to serve the global change of the health care system and education need.

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**7AA/P7**

**Nurses' perceptions of administration charts for injectable antibiotics**

**L J Mathibe*, J Harris, A Gray (Department of Therapeutics & Medicines Management, University of KwaZulu-Natal, 719 Umbilo Road, Congella, Durban 4013, South Africa)**

**Aim:** To report on the student nurses’ perceptions of the “Administration Charts for Injectable Antibiotics” (ACIAs) Project.

**Background:** The purpose of developing ACIAs was to help students to identify various antibiotics used in the wards they are attached to, and to learn about the indications, side effects, storage conditions, routes of administration, stability after reconstitution and compatible diluents for these antibiotics.

**Summary of work:** We used self-administered originally constructed questionnaires as well as semi-structured interviews, to assess students’ perceptions of ACIAs project. Further semi-structured panel interviews were conducted between the previous and current groups of students regarding the difficulties as well as lessons learned when compiling ACIAs. The interview transcripts were analysed according to the principles of ‘grounded theory’.

**Summary of results:** The majority (93.3%) of participants felt that the project contributed to their knowledge of antibiotics and 90% felt it stimulated their interest in antibiotics. Students showed greater preference (agree/strongly agree) towards ACIAs as compared to “seminars” (57%), Case-Studies (53%). However, ACIAs did not receive preference over the use of ‘popular factual novels’ and research-based learning.

**Conclusion:** Participants felt that the ACIAs project is worthwhile, interactive, interesting, and it leads to better academic performance and improves knowledge retention. Even though they were discouraged by the time it takes compiling ACIAs, they were motivated by the fact that their work would be beneficial in many ways to the nurses in practice.

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**7AA/P8**

**Workshop training for interns to increase competency in tracheostomy**

**Kobchai Uengpitakphan*, Supaluk Raiyawa (Udornthanee Hospital, 33 Potniyom rd, Amper Meung, Udornthanee 41000, Thailand)**

**Background:** One of the required competencies of the Thai Medical Council for interns is tracheostomy. Udornthanee Hospital is a training center for internship. In the past year this issue was evaluated with a very low score for training potential. So this workshop was planned to increase competency of tracheostomy in internship.


**Conclusion:** There was a statistically significant competency change in doing tracheostomy procedure compared to the past at p-value less than 0.05.

**Take-home messages:** Assessment of skill lab should be done by OSCE and compared to the authentic assessment.

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**7AA/P9**

**Combining audio-visual in the teaching and acquisition of clinical skills and language**

**Rae Nash* (University of Cape Town, Clinical Skills Programme, Cape Town, South Africa)**

**Background:** 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.

Summary of work: The integration of languages into the MB, ChB programme has been successful with 1st language speakers tutors both in the classroom situation as well as at the bedside during the Clinical Skills Tutorial sessions. However there still appeared to be reluctance in students to address patients in Xhosa and Afrikaans. As further encouragement the CD ROMs, used as aids to Clinical Skills acquisition, have been expanded to include dialogue with the patient in Xhosa (in the form of requests and instruction). (Afrikaans will be addressed in 2009). Thus the student has not only direction for acquisition of the practical skill, but also has the voice over to include the language element relevant to that skill. 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.

7AA/P10 Clinical curriculum development in Radiotherapy
Beverley Ball* (University of Liverpool, Johnston Building, Quadrangle, Brownlow Hill, Liverpool L69 3GB, United Kingdom)

Background: The idea of creating opportunities for students to learn directly from people with experience of a service is not new, but most current literature has a focus on social work education (Waterson and Morris, 2005). Across the Faculty of Medicine at Liverpool there is a range of experience of building on these developments in a variety of disciplines.

Summary of work: In autumn 2006, a funding opportunity arose to enable radiotherapy students to learn directly from people with experience of cancer services. This resulted in the development of a pilot project scheduled to commence in December 2006 and completed in 2007. The aim of the pilot was to develop the content and delivery of the BSc (Hons) Radiotherapy programme at University of Liverpool, by consulting with people who have had radiotherapy. The pilot and subsequent workshop deliberated issues around the experience of receiving radiotherapy and how these could be transferred first hand into the context of the course for enhancement of communication skills, professionalism and general learning. The poster will look at the key outcomes of the project and how this has been translated into the radiotherapy programme. It will review some key areas highlighted in the evaluations and how service user input has been developed into the course to improve the student experience.

7AA/P11 Medical student understanding of patient emotion: what is it and where does it come from?
Joshua LaBrin*, Paul Huddleston, Harvey Huddleston, Jeanne Huddleston (Mayo Clinic, 200 First St. SW, Rochester 55905, United States)

Background: A primary objective in medical education is the cultivation and successful practice of student empathy. This fundamentally involves understanding patient emotion and experience in the medical setting. Determining students’ basic understanding of these emotions could reveal areas for improvement in professionalism education.

Summary of work: During their orientation, 42 first-year medical students completed a written questionnaire assessing their initial perceptions of patient experience, responding to the question: “What is the primary emotion experienced by hospitalized patients?” We abstracted the first emotion listed and collected demographic variables including gender and prior hospitalization.

Summary of results: Of 42 students, the primary emotions identified were: fear (15), anxiety (14), powerlessness (3), vulnerable (2), uncertainty (2), loneliness (2), stress (1), irritation (1), and discomfort (1). The only variable eliciting a significant difference in response was prior student hospitalization. Students previously hospitalized (N=19) predominantly identified fear as the primary emotion (11 vs. 4, p=0.02), while students with no prior hospitalization identified anxiety (12 vs. 2, p=0.02).

Conclusions: Students’ perceptions of patients’ primary emotion during hospitalization significantly differed based on prior student experience of hospitalization.

Take-home messages: Recognition of medical students’ understanding of patient emotion and their formative factors could enhance approaches for educators in professionalism education.

7AA/P12 Performance-based assessment of third year medical students in Dokuz Eylul University School of Medicine (DEUSM)
Berna Musal*, Cahit Taskiran, Sema Ozan, Yucel Gursel, Serpil Velipasaoglu (Dokuz Eylul University School of Medicine, Department of Medical Education, Inciralti, Izmir 35340, Turkey)

Background: The professional, clinical and communication skills trainings are separately implemented and evaluated in the preclinical years of DEUSM.

Summary of work: Collective assessment of third year students’ performances and knowledge and skills integration acquired from the above mentioned training activities is the aim of the study. The dates of pilot study and full implementation are respectively May 2007 and May 2008. Three integrated station cases were two-month-old infant’s initial examination and vaccination, middle aged woman’s IUD follow-up, young man with suspected hepatitis complaints. Students carried out activities like history taking from SPs; physical examination, vaccination and venous blood sampling on mannequins. Meetings to standardize evaluators and SPs were held.

Summary of results: The students communicated fairly well with SPs and were competent in tested psychomotor skills. Some of the problems observed were: difficulties in gathering case specific information, smooth transition from history to examination, neglecting to take patients’ informed consent.

Conclusions: Weaknesses and strengths observed by trainers and SPs were shared with students. On a five-points Likert scale, the students highly rated the study.

Take-home messages: The medical schools implementing skills training in separate courses should provide their students with learning opportunities to integrate their knowledge and skills.
7AA/P13

Does learning a practical skill like taking blood pressure improve understanding of cardiovascular concepts?

P Cooles*, M Sheakley (Ross University Medical School, Portsmouth Campus, PO Box 266, Roseau DM, Dominica)

Background: In their first semester medical students learn to take blood pressure and assess a radial pulse while they are receiving a lecture series on cardiovascular physiology.

Summary of work: 281 students were assigned in pairs to a trained senior student who followed a detailed check list. Each pair spent 20-30 minutes with the instructor. The pairs were randomly assigned to an Active-station where the students did the activity or to a Passive-station where the instructor demonstrated the techniques. The students later took an MCQ exam covering cardiovascular physiology. The study was approved by the institutional review board. The students were not aware of the difference between the stations. An heterogeneous group of 52 non attenders did significantly worse in the exam.

Conclusion: There was no significant difference in examination performance between the 2 groups.

Take-home message: Competency training is worthwhile but whether the students do the activity themselves under close supervision or have it demonstrated to them makes no difference to their understanding of cardiovascular physiology as tested in a multiple choice format.

7AA/P14

Attitudes of final-year medical students to the teaching and learning of clinical skills

Katy M Edmonds, Richard D White*, John A Spencer, Naveen Kachroo, Rachael A Fraser (Department of Anatomy and Clinical Skills, Newcastle University Medical School, Framlington Place, Newcastle-Upon-Tyne NE2 4HH, United Kingdom)

Background: At Newcastle University, clinical skills teaching starts early in the undergraduate medical course, in non-clinical surroundings. However, such skills must inevitably be translated into the clinical setting in later years.

Summary of work: We surveyed 231 final-year medical students at Newcastle University (UK). The questionnaire focussed on the clinical skills teaching the students had received in the first two years of the course, including the perceived relevance to future clinical practice and any problems which had been encountered in clinical placements.

Summary of results: 91% felt clinical skills teaching had adequately prepared them for clinical placements; 97% thought the skills taught would be relevant to future practice; 12% had encountered problems with these skills in a clinical setting, mainly relating to a lack of opportunities to practice.

Conclusions/Take-home messages: Students showed a high satisfaction rate for their clinical skills teaching. Problems in clinical settings arose primarily due to a lack of practice, especially on real patients, and having to adapt to varying techniques employed by different tutors and medical staff. The consensus was that more opportunities to practice these skills before meeting real patients would be of greatest benefit.

7AA/P15

Assessment of clinical skills in dermatology: indicative to improvement of education

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Background: This study aimed to assess dermatologists' internal medicine doctors' and Y5 and Y6 learners' clinical ability to referral patients with prevalent dermatological lesions, including those with malignancy potential.

Summary of work: At the end of 2006, the dermatology staff from the State University of Campinas, Brazil developed an assessment questionnaire containing 10 clinical cases (and respective images). 83 medical doctors (8 dermatologists and 75 general practitioners), and 55 learners (24 Y5, and 31 Y6 medical students) answered the questionnaire anonymously. Due to changes in curriculum design, Y5 learners' dermatology clerkship was twice as long as Y6.

Summary of results: Mean ratings were: 10 for dermatologists; 3.32 for general practitioners; 3.82 for Y6 learners and 6.34 for Y5 learners. Statistical analysis used Spearman coefficient. There was significant correlation only between general practitioners and Y6 learners (p<0.05).

Conclusion: The increase in the numbers of hours in dermatology clerkship contributed to the improvement of undergraduate learners' quality medical referral. General practitioners seemed not to be adequately prepared to make dermatology diagnosis.

Take-home message: Educators should be aware of the importance of including prevalent cases in the undergraduate curriculum, in order to prepare learners to make efficient diagnosis.
Three years’ experience using a Virtual Learning Environment (Moodle) at the Royal College of Surgeons In Ireland. What are the key elements to success?

**Eric Clarke**, **Claire Doody** (Royal College of Surgeons In Ireland, 123 Saint Stephens Green West, Dublin 2, Ireland)

**Background:** The Virtual Learning Environment, Moodle, has been used at the Royal College of Surgeons in Ireland (RCSI) to support education for over three years. While implementing Moodle strong emphasis was placed on a standard module design, communication, timetabling, assignment handling and online examinations.

**Summary of work:** Moodle is now used in the entire curriculum to host a range of activities such as group discussion, assignments and online examinations. An extensive staff-training programme was implemented and reactions have been positive. As there is such a strong emphasis on student participation, the provision of student computers was reviewed along with connectivity in peripheral hospitals where WiFi is unavailable.

**Conclusions:** A total of 5,000 RCSI staff and students are regular Moodle users. This high demand and reliance makes it a core system, which can allow little or no downtime. While Moodle is free to download initially, heavy reliance on the system requires significant investment in hardware, bandwidth, support and training.

**Take-home messages:** Although open source software such as Moodle is freely available, if applied as a core system serious investment is required. Open source software is not essentially free. Staff support and training is vital to success. Our use of Moodle has highlighted other areas requiring investment.

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The design of an online peer reflection process for tutors moderating an online asynchronous learning activity

**Sian Coxall***, **Maria Gonzalez**, **Steve Brigley** (1Department of Dermatology; 2Department of Medical Education, Cardiff University, Heath Park, Cardiff CF14 4XN, United Kingdom)

**Background:** The Diploma in Practical Dermatology is an international distance learning course for General Practitioners, delivered by the Department of Dermatology at Cardiff University. It uses large numbers of online tutors who are mainly practising GPs based around the world.

**Summary of work:** We designed a system for peer reflection of teaching of an asynchronous online activity to allow the tutors to gain feedback and support on their teaching roles. The model adopted for the peer reflection was derived from principles and practice in peer reflection of teaching literature, Cardiff University guidelines and policies and an assessment of the needs of our online GP tutors. An online process was designed which consisted of initial discussions online with a peer review partner, followed by an observation period and follow up discussion. An online instructional package was created which included full instructions for the process, links to resource web pages, downloadable guidance notes, a downloadable form to complete and include in the tutor’s own appraisal form and a declaration of completion form to complete and return to the department to allow the dissemination of best practice. The process and instructional package was piloted on a group of twelve tutors. This short communication will be a presentation of the process and demonstration of the instructional package designed and the lessons learnt during the design and pilot process.

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The designing and evaluation of a standard template for the delivery of CPD online

**Elizabeth Rogerson, Linda Martindale*** (University of Dundee, Tay Park House, 484 Perth Road, Dundee DD2 1LR, United Kingdom)

**Background:** The fast changing nature of professional practice and in some professional groups the requirements of mandatory update, presents medical and other health care educators with the challenge of designing and delivering cost-effective, continuing professional development (CPD) programmes, which are: flexible; current; relevant; and capable of providing a personalised learning experience, on a wide range of topics.

**Summary of work:** A collaborative project was funded to design and evaluate a standard e-learning template, from which a large, 10 hour, unitised, e-learning, CPD programme could be built and its effectiveness evaluated. This presentation describes why and how the tenets of three learning strategies: competency-based learning (CBL), problem-based learning (PBL) and information-based learning (IBL) informed the design of a standard education template on which a CPD programme could be built and delivered. The evaluation is scheduled for completion in May 2008. The design of the evaluation tool, methods used to test it and the evaluation results will also be presented. These will include the use of focus group interviews and a self-report research questionnaire to collect data on demographic, education, technical and practice information judged to be relevant to the education effectiveness of the template design and the evaluation tool.
8B/SC4

Implementation of an Online Doctorate of Health Education (DHEd) Program: student and faculty experiences and reflections

Lynda Konecny, Jon Persavich (A.T. Still University of Health Sciences, School of Health Management, 210A South Osteopathy, Kirksville, Missouri 63501, United States)

Background: This applied dissertation based, online professional doctorate degree provides students a challenging and innovative environment requiring them to develop a unique solution to a work related challenge. Course work and dissertation preparation are highly integrated; with part of each class dedicated to working on the dissertation as students move through the formal process of identifying and crafting a concise problem statement, research design, implementation and evaluation.

Summary of work: The program has gone through its first cycle recognizing its first graduates in February 2008. Because the production of the applied dissertation is integrated into the course work the All But Dissertation Status (ABD) has been eliminated.

Conclusions: Participants will be guided through the entire program of study. The concepts of student-faculty interaction points (email, discussion forums, formative and summative assessment and assignment feedback), authentic embedded assessment of student learning, and how each of these apply to the development of a comprehensive applied dissertation will be stressed.

Take-home messages: Delivering doctoral level curriculum and guiding authentic, thorough research can be done effectively using an online approach.

8B/SC5

Does international multidisciplinary peer appraisal provide a useful learning experience? Reflections on the experience of interdisciplinary educational peer appraisal in an international setting

Fiona McMillan*, Amy Mitchell, Daniel Kusumawidjaja, Grace Cullen, Avindra Jayawardene, Stephen Lynch, Michael Ross (NHS Education for Scotland, 89 Hydepark St, 2 Central Quay, Glasgow G3 8BW, United Kingdom)

Background: Appraisal has become a ‘hot topic’ in medical education. Its central role in professional development of healthcare professionals is increasingly recognised.

Summary of work: Six multinational postgraduate students enrolled in the online MSc (Clinical Education, The University of Edinburgh) undertook a personal educational peer appraisal with a self selected peer and reported their experiences. Some appraisals occurred face-to-face with others occurring in an online environment. The principal researcher later undertook thematic analysis and semi-structured interviews to explore emergent themes.

Conclusion/Take-home messages: This research shows that interdisciplinary educational peer appraisal can be effective in facilitating personal reflection, the development of a personal development plan and that appraisal can be successfully conducted in an online environment between peers in different countries and clinical disciplines - an approach that raises the possibility of global use of personal appraisal. The lessons learnt by this group are useful to those planning appraisal systems and for individuals undertaking the process of appraisal themselves.

Chairperson: Allan Cumming (University of Edinburgh, UK)

4.30 Welcome: Allan Cumming (Taskforce Leader, Tuning Project (medicine))
4.40 New Trends in Medical Education - Determinants for Change: Madalena Patrício (President, AMEE)
4.50 Outcomes-Based Education: Ronald Harden (General Secretary/Treasurer, AMEE)
5.00 Tuning (Medicine) Development/History: Allan Cumming
5.10 Methodology: Michael Ross (Coordinator, Tuning (medicine))
5.20 The Tuning outcomes: Michael Ross/Allan Cumming
5.30 The research question: Chris van Schravendijk (Free University of Brussels)
5.35 The way forward: Allan Cumming
5.50 Discussion
6.00 Conclusion: Henry Walton (University of Edinburgh)
Reception for all attendees

8C

Launch of Tuning (medicine) learning outcomes for undergraduate medical degrees in Europe

Chairperson: Allan Cumming (University of Edinburgh, UK)

4.30 Welcome: Allan Cumming (Taskforce Leader, Tuning Project (medicine))
4.40 New Trends in Medical Education - Determinants for Change: Madalena Patrício (President, AMEE)
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8D

Different uses for an OSCE

8D/SC1

The Glasgow University Triadic OSCE: take one to settle nervous student dyspepsia

Peter Barton* (University of Glasgow, Wolfson Medical School Building, University Avenue, Glasgow G12 8QQ, United Kingdom)

Background: Clinical skills are taught from year 1 MBChB. We wished to increase student learning by giving them an early formative OSCE experience.

Objectives: (1) To create a formative learning OSCE examination to prepare students for demonstrating competence during subsequent summative OSCE assessment, in year 2. (2) To provide an early opportunity for students to understand the importance given to generic common aspects, most notably hand washing and patient respect.
Summary of work: We devised a formative seven station OSCE for May 2007. Each student rotated and stayed through in three distinct roles in different circuits: volunteer patient, examiner and candidate. Additionally the clinical skills website published assessment exemplars so students understood how we assessed them. Prior to the OSCE all students were sent a 4 page OSCE briefing paper, and a 30 minute examiner briefing, based on existing internal examiner briefing.

Conclusion: This exercise was the most heavily evaluated part of students' year 1 experience. Triangulation of on-line data, a focussed staff student meeting, and Faculty's own observations confirmed that this was an extremely valuable learning experience especially in the areas of students' comprehension of our future OSCE expectations and how it felt to be a volunteer patient.

8D/SC2
Patient safety in internal medicine clerkship: a new experience with OSCE methodology
Renata Daud Gallotti*, Milton de Arruda Martins, Ireneu Tadeu Velasco, Iolanda Calvo Tibério (University of São Paulo School of Medicine, Av. Dr Arnaldo, 455, São Paulo 01246-903, Brazil)

Background: Although Patient Safety (PS) is an essential field in postgraduate programs and medical practice, very little attention is given to this important subject during training. In 2007, PS was introduced in our Internal Medicine Clerkship (a 3 month program for 40 to 47 5th year students per group with 4 groups/year), focusing on human error theories, incidents and adverse events, epidemiology and disclosure.

Summary of results: At the end of each rotation, an OSCE with a scenario exclusively related to error disclosure, physician-patient relationship (PPR) and empathy is applied. Global students’ performance and their performance in PPR, PS and empathy competences were analyzed and compared regarding gender. The correlation between attitudes on PS, PPR and empathy was determined.

Conclusion: Differences in PPR and empathy scores were remarkably lower (5.66 ± 2.25 (1.67-9.17)). No differences were detected regarding gender. A strong and significant correlation was found between empathy and adverse events disclosure attitudes (r=0.984 p<0.001).

Conclusions/Take-home messages: OSCE is a valuable tool to evaluate Patient Safety attitudes and competencies. Empathy is essential for appropriately disclosing adverse events to patients.

8D/SC3
An innovative team collaboration assessment tool for a quality improvement curriculum
Prathibha Varkey*, Priyanka Gupta*, Kevin Bennet, Jacqueline Arnold, Laurence Torsher, (Mayo Clinic, 200 1st St SW, Rochester 55905, United States)

Background: Team skills such as communication, cooperation, and leadership are critical for improving patient safety and quality of care. These skills are being incorporated in medical curricula to prepare physicians to be effective members of Quality Improvement (QI) teams. Competency has traditionally been assessed through qualitative evaluations, and few examples of structured assessment methods are present in the literature. This study describes the feasibility and acceptability of using the Objective Structured Clinical Examination (OSCE) to assess team skills.

Summary of work: The team OSCE was part of an eight-station QI OSCE administered at the completion of a QI curriculum in the Mayo Clinic Preventive Medicine and Endocrinology fellowship programs. Team performance was evaluated using the Mayo High Performance Teamwork Scale (MHPTS).

Summary of results: Internal consistency for the station was excellent (Cronbach’s alpha = 0.825). The mean scores for the faculty and fellows did not differ (p-value = 0.80). All faculty and fellows strongly agreed (0%, 75%) or agreed (100%, 25%) that the assessment technique was authentic.

Conclusion: The team OSCE station was found to be a feasible and acceptable method for assessing competency in team skills. Further research is needed to better understand the psychometric properties and predictive validity of the team OSCE.

8D/SC4
Does performance on discipline-specific Objective Structured Clinical Examinations predict subsequent performance on an interdisciplinary, clinical competency examination?
Heather L Hageman*, Donna B Jeffe, Dorothy A Andriole, Alison J Whelan (Washington University School of Medicine, 660 S Euclid Ave, Box 8073, St Louis 63110, United States)

Aim: We sought to determine if discipline-specific standardized-patient (SP)-based Objective Structured Clinical Examinations (OSCE) performance predicted subsequent performance on our summative, end-of-clerks, interdisciplinary, SP-based Clinical Competency Examination (CCEX).

Summary of work: Between May 2005 and July 2007, 204 students completed all core clinical clerkships, the Pediatrics/Obstetrics and Gynecology (Peds/Ob) and Medicine OSCEs, and the CCEX. Hierarchical multiple linear regression tested whether Peds/Ob-OSCE and Med-OSCE scores were significant predictors of CCEX score, controlling for variables associated with CCEX score in univariate tests at two-tailed p < 0.05.

Summary of results: In univariate tests, higher CCEX score was significantly correlated with higher Med-OSCE score, Peds/Ob-OSCE score. United States Medical Licensing Examination Step I score and clerks' grade-point average (GPA); MD-only graduates and women had higher CCEX scores compared with MD/MA or MD/PhD graduates and men, respectively. In the regression model, Med-OSCE (Standardized β = .176, p = .017), but not Peds/Ob-OSCE (Standardized β = .047, p = .500), predicted higher CCEX score, controlling for gender, advanced-degree-program graduation, Step 1 score, and GPA.

Conclusion: Med OSCE, but not Peds/Ob OSCE can identify students at risk for poor performance on an interdisciplinary CCEX, perhaps due to the predominantly adult-medicine focus of the CCEX.

Tuesday 2 September 2008
8D/SC5
Rating the quality of spoken English: another dimension of OSCE assessment of IMG communication skills

Robert F Maudsley*, Bruce Holmes*, Swarna Weerasinghe (The Clinician Assessment for Practice Program, College of Physicians & Surgeons of Nova Scotia, Ste. 200, 1359 Brunswick Street, Halifax, Nova Scotia B3J 2G1, Canada)

Background: The Clinician Assessment for Practice Program uses an OSCE to assess the readiness of International Medical Graduates (IMGs) for family practice. An assessment of Quality of Spoken English (QSE) is included as an additional dimension of communication skills.

Summary of work: Simulated patients (SPs) and Physician Examiners (PEs) rate QSE, assign a global rating to overall communication skills and provide comments. SPs also rate speaking skills (SS) as one of seven components in the broad domain of communication skills. QSE includes using appropriate vocabulary in context, logical word flow to convey intended meaning, rate of speech, and accent affecting comprehension. SP ratings (N=1280) and PE ratings (N=630) were analysed.

Summary of results/Conclusions: PE and SP ratings of the QSE and SS were statistically significantly correlated (r = 0.7 - 0.9 with p< 0.0001). The global ratings and SS as well as quality of spoken English ratings are moderately correlated (0.45 to 0.6 with p-value < 0.001), however few discrepancies were noted.

Conclusions: There is a correlation between SS and QSE, the latter giving an additional dimension to the assessment of IMGs' ability to function clinically in an English language setting.

8E/SC2
The influence of a vertically integrated curriculum in medical school on the transition to postgraduate training

M Wijnen-Meijer*, Th J ten Cate*, J C C Borleffs* (University Medical Center Utrecht, Center for Research and Development of Education, PO Box 85500 (HB 4.05), Utrecht 3508 GA, Netherlands)

Background: Recently, many medical curricula have been changed into vertically integrated programmes. One of the aims of vertical integration is to facilitate the transition from theoretical to clinical education and from medical school to postgraduate training.

Summary of work: To determine whether a vertically integrated curriculum affects the transition from medical school to postgraduate training, we carried out a case study among graduates of two cohorts of the Utrecht Medical School, who followed either the traditional curriculum or the innovative, vertically integrated programme. Topics of the questionnaire were: a) activities since medical school, b) required amount of time and number of applications to get admittance to residency, c) the process of making career choices.

Summary of results/Conclusions: Despite a diverse student population, students (particularly graduates) generally come into veterinary school favouring a traditional, surface approach to learning, with an emphasis on content rather than process. These initial findings highlight the need for better scaffolding, in terms of providing support for students as independent learners, and staff training to enable teachers to move students away from dependency acquired during previous secondary and Higher Education experiences.

8E/SC3
It's all in the mix: bringing the medical humanities curriculum to life

Richard Ayres*, Sam Regan de Bere (Peninsula College of Medicine and Dentistry, Peninsula Postgraduate Health Institute, John Bull Building, Research Way, Plymouth PL668U, United Kingdom)

Background: Integrating medical humanities into the curriculum is a challenge for academics in medical education, and clinician educators who may be skeptical about relevance. Students can be resistant to ideas they suspect might be superfluous or ‘woolly’.

How can medical humanities be delivered in a way that overcomes disciplinary differences and provides clear clinical relevance?

Summary of work: We describe the establishment of an innovative medical humanities curriculum at a new UK medical school.
We chart development from an academic-led discipline to an integrative curriculum theme staffed by a collaborative team of academic/clinician and student/patient ‘partners’. We illustrate experiences of collaborative planning, and of presenting plenaries, workshops and extra-curricular activities.

Conclusions: Taking into account multi-professional interaction, and the practical realities of teaching humanities to medical students, we outline the challenges and benefits of adopting a collaborative approach. We emphasize particularly the importance of balancing rigorous theoretical underpinnings with clinical relevance.

Take-home messages: The integration of academic and clinical staff with students and patients in curriculum development is initially challenging but highly beneficial to professional development. It is invaluable in helping staff and students critically to explore subjective, creative and ‘humane’ aspects of their medical learning, knowledge and practice.

8E/SC4
Integrating seminar implementing task-based learning in undergraduate medical education
Timo Hyytinen*, Tiina Keski-Opas, Antti Koivukangas, Pauliina Suomela, Irma Virjo (Seinäjoki Central Hospital, Hanneksenrinne 7, Seinäjoki FIN-60220, Finland)

Background: The Medical School of the University of Tampere arranges part of the education in South Ostrobothnia 200 kilometres north from Tampere. The aim is to learn common diseases and co-operation of primary health care and secondary care.

Summary of work: Medical students study internal medicine and surgery at Seinäjoki Central Hospital, and general practice in eight health centres in the area, two weeks each. Simultaneously there is one group representing each discipline. All three groups have their own program except a joint seminar at the end. Students participate in tasks that the health care professionals do in their work. They e.g. refer patients from health centres to the central hospital and vice versa. Students present these cases in the seminar and describe what happened. The cases are reflected together with teachers: how and why the case was handled as it was now, and what this would mean generally.

Summary of results: In 2007 there were 12 seminars, 269 students participated, 93% filled in evaluation forms (scale from 1-5). The mean for the seminar was 3.9 and 4.0 for the whole two-week entity.

Conclusions/Take-home messages: Task-based learning suits undergraduate medical education well.

8E/SC5
The current status of medical education in the Gulf Cooperation Council (GCC) Countries
Khalid A. Bin Abdulrahman* (Imam University, College of Medicine, P.O Box: 75227 Riyadh 11578, Saudi Arabia)

Background: In the last two decades, Medical Education has witnessed a change in curriculum, so as to maintain its efficiency and effectiveness. Considerable curricular changes are underway in many medical colleges worldwide.

Aim: To assess the current status of undergraduate curricula, 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.

Summary of work: A structured open-ended data form was used in the collection of information from the appropriate authorities in 30 medical colleges of the GCC countries (Kingdom of Saudi Arabia, Oman, Kuwait, Qatar, Bahrain, United Arab Emirates and Yemen) in the year 2005.

Summary of results: Out of 30 medical colleges, 13 (43.3%) were located in KSA. The annual intake of students in the year 2005 in these 30 colleges was 3,225 of which 64.15% were males. Twelve colleges (40%) were following the traditional curriculum, while the remaining (60%) were following hybrid Problem-based learning (PBL) curricula. Most of the colleges’ curricula followed were moving towards the more desirable side of the SPICES model. The majority of the traditional colleges were planning to change their curricula to hybrid PBL curricula. Almost all new medical colleges were adopting the hybrid PBL curricula.

Conclusion: Despite the diversity in the curricula followed in medical colleges in GCC countries ranging from the traditional to the hybrid PBL, most of these colleges either are following or are moving towards the new trends in medical education curriculum.

8E/SC6
Postgraduate Hospital Educational Environment Measure: a multi-purpose tool
Sheilla K Pinjani*, David Stokoe (Aga Khan University, Department for Educational Development, Stadium Road, PO Box 3500, Karachi 74800, Pakistan)

Background: The educational environment is a nebulous concept but nevertheless is of profound importance to the goal of delivering high quality medical education.

Summary of work: The PHEEM (Postgraduate Hospital Educational Environment Measure) was used as part of faculty development programme at United Lincolnshire Hospital Trust to survey various specialties identifying the areas which needed improvement from the trainees’ perspective and differences in perceptions of generalists (foundation years) vs. specialists (career doctors). Some consultants also completed the survey from trainees’ perspective. This information was utilized to address the training needs and develop educational seminars.

Summary of results/Conclusions: PHEEM results for generalists and specialists in June 2006 n = 30 (96.27 / 160), n = 20 (101.00 / 160) and June 2007 n = 72 (101.04 / 160), n = 70 (109.16 / 160) show more positive perceptions of educational environment with statistically significant improvement in role autonomy (p < 0.02), teaching (p < 0.007) and insignificant improvement in social support.

Take-home messages: This tool was valuable in identifying the individualized training needs of various groups and facilitated in directing training at all levels. Observations suggest that feedback to clinicians with evidence and focused directions brings more positive change with observable improvement in educational environment.
8F/SC1

Innovation in family medicine training - key learnings from P4 project
Perry A Pugno* (American Academy of Family Physicians, 11400 Tomahawk Creek Parkway, Leawood, Kansas 66211-2672, United States)

Background: Preparing the Personal Physician for Practice (P4) is a nation-wide project of supported innovation in post-graduate medical education to prepare family doctors to fit in the evolving practice environment.

Summary of work: Now in its second year of a 5-year project, key learnings are beginning to emerge that will help guide the discipline's 450 training programs in curricular change to better prepare graduates to provide what patients want and need from their doctors.

Summary of results/Conclusions: Seven key learnings are emerging as the most important areas where training programs should concentrate: 1) Faculty development in how to deliver new curricula should be a priority. 2) Demands for maintaining clinical services continue to challenge meeting educational needs. 3) Faculty pressures to generate revenue decrease available teaching time. 4) Duty hours limitations have yet to prove their value either to patient care or education. 5) The current focus on competencies remains at a primitive level. 6) Clinical simulations can offset reduced patient contact experience. 7) Change is difficult to initiate, and even harder to sustain.

Take-home message: To implement innovation in post-graduate medical education, begin with the faculty, take care to preserve your service/education balance, and stick-with-it until it becomes integrated into your routines.

8F/SC2

Specialty training in the UK: the educational impact of ITP compared to VTS training; an exploratory follow up study of former trainees in current GP positions
Olga Zolle*, Johnny Lyon-Maris, Samantha Scallan (NHS Education South Central, Highcroft, Romsey Road, Winchester SO22 8D, United Kingdom)

Background: Both the Integrated Training Programme (ITP) and the Vocational Training Scheme (VTS) in the UK offer alternative progression routes into GP. Although both training schemes offer hospital based training, ITP has been argued to be better suited than VTS for specialty training in GP. This may be partly explained by the extended exposure to GP offered in ITP compared to the 'compartmentalised' insight into different specialties offered by the VTS approach. ITP trainees have also been shown to select their hospital training posts according to their learning needs in GP.

Summary of work: We designed a questionnaire aimed at former VTS and ITP trainees that had finished their training between 2002 and 2007, in the Southampton patch of Wessex. The questionnaire contained a total of 16 open and scaled questions that allowed for a qualitative and quantitative analysis.

Summary of results/Conclusions: All former ITP trainees were retained in the GP profession whereas there was some loss of former VTS trainees from GP. In terms of preparedness for the first GP position we have found a significant difference (p<0.05) in the perceived development of competencies.

Take-home messages: 1. ITP route appears to be more effective in: a) retaining doctors in GP profession; b) developing decision making; c) confidence; d) understanding QOFs. 2. No perceived gaps in clinical knowledge from either group. 3. VTS trainees (now GPs) perceive a lack of training in computer systems, practice management, law and ethics for the job.

8F/SC3

Implementing a national curriculum for training general practitioners in the UK: initial findings
Sarah Burke*, Julie Bedward, Ian Davison, Hywel Thomas, Neil Johnson (Centre for Research in Medical and Dental Education, School of Education, University of Birmingham, Edgbaston, Birmingham CV7 7PQ, United Kingdom)

Background: In August 2007 a new curriculum for general practice (GP) training was introduced in the UK. A three year national evaluation is examining its implementation, how it is experienced by teachers and learners, and its fitness for purpose.

Summary of work: The first phase of the evaluation has three parts. (1) Interviews with staff holding lead roles in GP training in five case study regions (Kent, Surrey and Sussex; North Western; Northern Ireland; Wales; and East Scotland). (2) Focus groups with trainees (ST1 to ST3), GP trainers and programme directors in the five regions. (3) Descriptive analysis of anonymised national data on workplace based assessments.

Conclusions: Qualitative data providing evidence on stakeholder experiences of the new curriculum, perceptions of its impact on teaching and learning, views of the new learning tools (including an electronic portfolio) and new forms of assessment (including workplace based assessment) will be presented, along with quantitative data examining the workings of workplace based assessments.

Take-home messages: Key issues arising from the introduction of a new national curriculum will be outlined. The perceived impact of aspects of the new curriculum will be explored, particularly an electronic learning portfolio and workplace based assessment.

8F/SC4

The educational prescription in postgraduate assessment
A A Khan*, P A Trafford, P Burrows, N R Jackson (London Deanery, GP Department, 32 Russell Square, London WC1B 5DN, United Kingdom)

Background: Doctors who have been out of clinical practice need to update their skills and improve their confidence. The London Deanery provides a postgraduate assessment for GPs wishing to resume their work after a career break. This qualifies them to join the 'returner scheme' which provides refresher training and supervised practice.

Objectives: (1) To ensure that returning GPs are fit to work as independent practitioners. (2) To facilitate their entry to the 'Performers List' of the Primary Care Trusts. (3) To provide an “educational prescription” for their professional development.

Summary of work: (1) Simulated patients standardise the assessment by delivering “real-life” presentations consistently. (2) The quantitative assessment is augmented by a qualitative report.
8G Communication skills in the medical curriculum

8G/SC1
Competence of “untutored” final year medical students in doctor patient communication
Ayesha Rauf*, Rahila Yasmeen, Umar Ali Khan, Aafaq Ahmed (Riphah International University, Almizan - Islamic International Medical College, 274 Peshawar Road, Rare - Riphah Academy of Research and Education, Rawalpindi 46000, Pakistan)

Background: Ineffective doctor patient communication is a leading cause of noncompliance and dissatisfaction; therefore formal teaching and assessment of communication skills is declared mandatory by many accrediting bodies. This need is now being increasingly realized in the developing world as well.

Summary of work/Results: The objective was to identify the need to develop a communication skills module in the curriculum of medical students at Riphah International University, by using a formal needs assessment exercise. A cohort of 50 final year medical students (30 females and 20 males), were observed by two observers using the “Kalamazoo Essential Elements Communication Checklist (adapted)”, in the outpatient area. Observations were confirmed by the patient, through “Patient Perception of Patient Centeredness” (PPPC) form.

Summary of results: 48%, 56% rated good in building relationship and opening discussion respectively, 50% were fair in gathering information, a significant percentage of students rated poor in various areas; understanding patients' perspective 50%, sharing information 42%, reaching agreement 64% and providing closure 52%. Patients' perspective was similar, less than 6% displayed essential competencies relating to patient centeredness.

Conclusion: The exercise identified, using effective tools, lack of competence of medical students untutored in doctor patient communication.

Take-home message: There is now a need to develop a patient centered communication skills teaching program involving faculty as facilitators, assessors and role models.

8G/SC2
Communication skills: are we there yet?
Margaret Bearman, Mary Lawson*, Alison Jones (Australian & New Zealand College of Anaesthetists, 630 St Kilda Road, Melbourne 3004, Australia)

Background: Over the last fifteen years, the importance of communication skills training has become accepted across Australian medical schools. Communication skills is now considered to be an essential graduate attribute.

Summary of work: The Australian Medical Education Study was investigating the general quality of Australian medical schools through conducting surveys, focus groups and interviews with key stakeholders. Survey data (N= 3382) indicated that 97% of medical students and 96% of junior doctors were satisfied with their own preparedness to practice communication skills. 85% of clinical educators and employers of junior doctors were satisfied with graduates' preparedness to practice communication skills. Clinical educator and employer of junior doctors were asked to nominate areas where graduates are well prepared. The most frequent category of response was ‘communication skills’. However, the focus group and interview data revealed more complex attitudes towards communication skills training, including some specific areas where preparation was considered inadequate or to the detriment of other essential topics and skills.

Conclusions: Almost all participants in a large-scale national survey regard graduates from Australian medical schools as being well prepared to practice communication skills.

Take-home message: While communication skills of graduates are almost universally well regarded, there may be areas of training which can be improved further.
8G/SC3
Cultural competencies in undergraduate medical education
Simone Scheffer, Isabel Muehlinghaus (Charité-Universitätsmedizin Berlin, Charitéplatz 1, Berlin 10117, Germany)

Background: In the reformed medical track at the Charité-Universitätsmedizin students attend a mandatory communication skills (CS) training for 10 semesters. This course focuses on various aspects of doctor-patient-interaction. So far, the ability to deal with diverse cultural backgrounds of patients has been neglected.

Summary of work: Starting in 2006, the CS curriculum has been revised, implementing several modules to practice cultural competencies at different stages of training. This process was monitored by a survey asking first- and fifth-year students about their attitudes towards studying cultural competencies and their expectations for practising these as a part of the CS training.

Summary of results: Students of both semesters agreed that cultural competencies are an important medical ability, preferring practical training to theoretical input. Training now includes group discussions, seminars, role-play and five encounters with simulated patients in six semesters, each addressing different aspects of cultural competencies. The modules are embedded in the topic of the semester. The contents as well as students’ evaluation results of the new teaching approach will be presented.

Conclusions: Training cultural competencies should be part of undergraduate CS training.

Take-home messages: Implications derived from the implementation of the new teaching modules will be outlined.

8G/SC4
Who’s got the power: the SP or the medical student? A linguistic analysis of conversational dominance in the assessed, simulated consultation
Anne de la Croix* (University of Birmingham, Department of Primary Care and General Practice, The Learning Centre, Edgbaston, Birmingham B15 2TT, United Kingdom)

Background: Research into doctor-patient communication shows that doctors are in control of the consultation - they have institutional power, knowledge and experience. Third year medical students do not have these assets when consulting with simulated patients (SPs). This might influence the conversational dynamics in assessed, simulated consultations: who takes control - students or SPs?

Summary of work: 100 videotaped consultations between third year students and SPs are being analyzed using techniques from discourse analysis and conversation analysis, focusing on: Floor (who talks more, who interrupts); Flow (who asks questions & initiates new topics); Fringes (who opens & closes the consultation).

Summary of results: Analysis is underway; results will first be presented at AMEE 2008. Pilot studies indicate that SPs, rather than medical students, take control of the assessed consultation.

Conclusions: Both the context and the structure of assessed, simulated consultations differ from doctor-patient consultations. There might be a need to (re)consider the format of communication skills assessments and the training/use of SPs.

Take-home messages: Linguistic analysis is valuable when analysing interactions in medical education. It is useful to scrutinise the content of communication skills assessments to learn more about the nature and structure of simulated consultations.

8G/SC5
Clinical supervisors’ perceived needs for teaching communication skills in clinical practice
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Background: Lack of faculty training is often cited as the main obstacle to post-graduate teaching in communication skills. The aim of the study was to explore clinical supervisors’ needs and perceptions regarding their role as communication skills trainers.

Summary of work: Four focus group discussions were conducted with clinical supervisors from two inpatient and one outpatient medical services from the Geneva University Hospitals. Focus groups were audio taped, transcribed verbatim and analyzed in a thematic way using Winmax software for qualitative data analysis.

Summary of results: Clinical supervisors said they frequently addressed communication issues with residents but tended to intervene as rescuers, fellow clinicians or coaches rather than as formal instructors. They felt their own training did not prepare them to teach communication skills. Other barriers to communication skills teaching include lack of time, competing demands, lack of interest and experience on the part of residents, and lack of institutional priority given to communication issues. Respondents expressed a desire for experiential and reflective training in a work-based setting and emphasized the need of a non judgmental learning atmosphere.

Conclusions: Results suggest that organisational priorities, culture and climate strongly influence the degree to which clinical supervisors may feel comfortable to teach communication skills to residents.

Take-home message: Attention must be given to these contextual factors in the development of an effective communication skills teaching program for clinical supervisors.
Non-traditional learning: literature-centered medicine in the exploration of antisepsis
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In the United States, recent changes to medical school curricula have resulted in the combination of didactic education with nontraditional learning methods. Therefore, we chose to study various historical and contemporary topics through the lens of "literature-centered medicine." We began by reading Morton Thompson’s The Cry and the Covenant, a fictionalized biography of Ignaz Semmelweis, who is best known for promoting antisepsis in the Austrian medical community. We subsequently researched the following modern topics and their relationship to the text: hospital-acquired infections, noncompliance with healthcare practices, infection prevention economics, modern puerperal fever, antisepsis support in history, and the accurate version of Semmelweis’ life. We concluded that through the literature-centered study of medicine, we explored issues that may have been overlooked in a standard didactic environment and were given an opportunity to apply history to the understanding of modern medical practice. In order to best convey our points, we have designed an interactive presentation. Our intent is to ask the audience about subjects they may have chosen to research, given the starting point of the Semmelweis biography. We will elicit audience involvement, test knowledge of related topics, and provide suggestions for literature-based study.

Music metaphors for tired teachers
Brian Bailey* (Napier University, School of Health and Social Sciences, Edinburgh EH2 4LD, United Kingdom)

The use of metaphors to generate new insights has a long history in science. Music metaphors are particularly powerful in this regard. In this presentation teachers will be invited to consider a number of ways in which these metaphors may be used in the lecture hall, regarding, for example: student/staff relationships; design of scenarios/teaching materials; communicating with patients; exploring social history; and understanding complexity.

Living (in)competency quartet: the presentation of a tool to teach (in)competent clinical teachers about medical (in)competencies
Cor de Kroon*, Pascale Roovers-Blom, Ilja de Vreede, Jamie Busari, Maarten Schutte, Hanneke Mulder, Ronnie van Diemen, Fedde Scheele (HAGA Ziekenhuis, Leyweg 275, 2545 CH Den Haag, Netherlands)

With the introduction of modernised PGME-curricula in the Netherlands all clinical teachers, and that is virtually everybody working in health care, can and will be asked to evaluate and reflect on the competency of residents. However, almost noone in Dutch health care is familiar with competencies in general and medical competencies in particular. Therefore a simple tool was necessary to teach incompetent clinical teachers about medical (in)competencies. Quartet is a highly popular card-game in the Netherlands. The goal is to obtain as many quartets as possible; a quartet consists of 4 (!) cards usually linked by a common topic. The trick is to figure out which player has the missing cards from your quartet. Unfortunately this will show (at least in part) which incomplete quartets you have yourself. We developed an (in)competency quartet: each (in)competency is a quartet consisting of 4 examples of (in)competency. By this means the game consists of 14 quartets. For example the ‘incompetent communicator’ quartet consists of ‘being untraceable’; ‘listening is lost speaking-time’; ‘turn over-talking’ and ‘hurry helps.’ At the AMEE Fringe the living- (in)competency quartet, using all participants as one example of (in)competency, will be played: hilarious, educational and great fun.

What is it like to be a heart?
Peter Kube*, Jörg Pelz*, Stefan Reinsch*, Oliver Wendt* (Charité, Universitätsmedizin Berlin, Charitéplatz 1, Reformstudiengang Medizin, Berlin 10117, Germany)

First year undergraduates at Charité’s Reform Track are faced with PBL cases involving the heart and heart action. Remembering the heart’s gross anatomical structure is easy. Predicting actions of the circulatory system can be memorized in a linear mode one by one. But how the heck, if everything happens simultaneously and triggered by preceding events at – let’s say – 70 BPM? Add a little pulmonary circulation and excessive demands increase your own heart rate. But here is a panacea: let’s work together and become part of a beating heart, run by your mates! It’s easy to deploy a small group to become a beating heart – but difficult to decide which part to play and how to star as a mitral valve. Who has to do what, when, and how? A real hands-on experience for small groups. Those, who are more adept, can try to knock together a knee, using nothing else but what can be found in the kitchen. “Joint” forces of our students led to partially functioning patellas, ligaments, and menisci. Real learning by doing and fun! What luck that we have a room full of body parts – and actors!
8I/SC2
What (more) can Simulated Patients contribute to undergraduate assessment?
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Background: Simulated patients (SPs) are a core component of medical student assessment, particularly within OSCEs. Simulators often assess candidates, and previous work has demonstrated that training around a single, simple anchor statement delivers valid and reliable ratings.

Summary of work: As part of work co-creating OSCE stations by expert patients and academic staff, our existing SP anchor statement was expanded into a 3-item checklist for stations assessing capacity decisions/dementia and self harm risk. SP responses were analysed, and modelled into the assessment process.

Summary of results: Both stations contributed positively to an overall Cronbach's alpha reliability of 0.755. All components of the 3-item checklist (demonstrating respect; sensitive response to emotional state; would seek out this doctor again) showed highly significantly correlation with our existing anchor statement, and across both stations. Incorporating these SP ratings led to a further rise in overall reliability.

Conclusions: SPs can successfully co-create a range of items for candidate assessment. Simulators have a separate but connected view of candidates when compared to clinical assessors, and are able to discriminate between different student characteristics. Modelled these extended SP ratings into the assessment process improves overall assessment reliability, and highlights the position of patients’ views at the heart of professional assessment.

8I/SC3
Preparing for patients’ active contribution to assessment: development of a successful approach
P Morris*, A McGoverin, J Symons, R Lane, R Fuller, E Dalton, D Muir (University of Leeds School of Medicine Medial Education Unit, Level 7 Worsley Building, Leeds LS2 9NL, United Kingdom)

Background: Learning with patients as teachers can have a transformative effect on students. Ensuring a consistent approach to involving patients effectively in medical education is a challenge. Final year OSCEs test an approach which prepares, develops and supports the voice of the patient.

Summary of work: Patients and carers were recruited from community groups to train as simulated patients for communication skills learning and a cascade approach taken to develop and extend the group alongside the medical faculty. This diverse group now work with the wider community to develop learning scenarios and facilitate broader teaching for medics, nurses and interprofessional groups. They run ‘Patient Learning Journeys’, an induction programme which supports patients and carers to reflect on their own experience and how to help others learn. They are now core to OSCE developments which improve validity and reliability. Action research approaches with medical faculty and the group have examined what works and how.

Conclusions: The voice of the patient has to be raised through mutual reflection to be most effective. Supporting patient voices in education benefits those involved as well as assessments and models a collaborative relationship for students. Learning with active patient voices produces healthier outcomes for all.

8I/SC4
Communication training with peer role-play and standardised patients: a controlled trial
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Background: Standardised patients and role-play are frequently employed to train communication skills. Standardised patients are perceived as highly realistic by students and provide the advantage of a professional feedback. Role-play fosters introspection and understanding ambiguity in communicating with patients. Explicit data is lacking to compare acceptance and effectiveness of these two methods.

Summary of work: We conducted a controlled trial in an undergraduate course in Pediatrics comparing communication trainings with (a) peer role-play (RP; N=28), (b) standardised patients (SP; N=30), and (c) a control group receiving scripts only (CG; N=33).

Summary of results: Both RP and SP were well accepted: 1.85±.85 for RP and 1.50±.71 for SP, (p<.0001; 1=very high, 6=very low) and seen as highly realistic: 1.38±.59 for RP and 1.44±.69 for SP (n.s.; 1= highly realistic, 6=unrealistic). Both RP and SP prepared well for future counselling of parents of sick children: 2.83±.99 for RP and 2.48±.36 for SP (1=well prepared, 6=not prepared), significantly better than in the CG (3.50±1.09; p<.038 for RP and p=.0016 for SP).

Conclusions/Take-home message: Students highly appreciate training communication skills both with standardised parents and with peer role-play and perceived the interventions as highly realistic. Both interventions prepare the participants well for future counselling of parents, significantly better than the control intervention.

8I/SC5
The Toronto/SPP Observation Guide: a framework to scaffold communication feedback
Catherine Smith*, Stan Rogal*, Diana Tabak* (University of Toronto, Standardized Patient Program, The Wilson Centre, 200 Elizabeth St., E1-565, Toronto M5G 2C4, Canada)

Background: Standardized patient educators provide formative communication feedback to trainees with diverse educational backgrounds. We needed a transparent lens to analyze, organize and discuss feedback. Existing tools were unwieldy or formulaic.
We distilled theoretical concepts into a concrete, one page tool to structure feedback delivery. The Guide encompasses three interwoven domains - communication techniques, styles, attitudes - with a glossary. Comprehensively designed, it provides a flexible, non-formulaic, learner-centered framework for dialogue. Specific behaviors seen or heard are identified, linked to descriptors, and then used to describe the resulting perceived impact. One or two points are discussed, often representing a learner's area of strength and area for growth.

Conclusions: Anecdotal evidence from users suggests that the Guide illuminates and aids in analyzing the ambiguity and multi-layered complexity inherent in communication. The Guide is applicable in myriad learning contexts, including E-learning and faculty development. A powerful, unanticipated outcome, with implications for our future research, is the enhanced ability of both SP and learner to reflect and self-assess.

Take-home messages: The Guide promotes a systematic approach to scaffold skill development. Differing perspectives of the same moment in an interview can be discussed safely using the framework, thereby forging an effective learning alliance.
Portfolio as assessment tool: how to define criteria?
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Background: Vocational training in GP/FM in Croatia lasts 3 years and finishes with an exam consisting of: a) written test, MCQ and EMI; b) OSCE; c) oral in front of a jury of three examiners, academics and practitioners.

Summary of work: Portfolio is part of an oral exam and should be submitted in advance. It is reviewed independently by the examiners and graded according to the defined criteria. Consensus should be achieved among examiners and orally reviewed by candidates during the exam. Three groups of criteria were agreed. The first is related to the amount and the second to the content of submitted materials; if it is relevant for GP. The third is related to the process of learning; if it shows the acquisition of theoretical knowledge or professional performance and if it is theoretical or reflective – learning from experience.

Conclusions: We experienced several obstacles and would like to discuss them during the presentation. Because we experienced inter-examiner variations, the question is how to train the examiners? If we look at portfolio as a qualitative assessment method, how high a level of standardisation do we need? Does portfolio contain something more important for the learning and assessment?

Can integrating student and teacher portfolio systems provide mutual benefits?
Gillian Armitt*, Hilary Dexter, Roland Ukor, Tim Dornan (University of Manchester, Oxford Road, Manchester M13 9PL, United Kingdom)

Background: In social constructivist theories, learner interactions with peers and teacher facilitators provide unique personal learning experiences. Therefore one expects the learner portfolio system to be enhanced through integration with the teacher’s online environment. However, it appears no integrated student-teacher portfolio system has been developed.

Summary of work: This work evaluates an integrated student/teacher e-portfolio system to support clinical education. Stakeholder requirements gathering followed by object-oriented analysis informed a service-oriented development approach. Pilot evaluations through stakeholder interviews, focus groups and questionnaires evidenced the value of an integrated system which: 1. provides two-way feedback supporting personal development and motivation of students and staff; 2. improves student support and teaching quality management through comparative and trend data on individual and group performances.

Conclusions: An integrated system provides facilities for students and staff to learn from, support and motivate each other. This synergistic relationship is reflected in the service-oriented architecture, in which a generic ‘learner portfolio’ is extended by additional services for both teacher and student. This heralds a change in portfolio philosophy, in which teachers and learners become more equal partners.

Take-home message: Integrating the online student and teacher portfolio systems provides mutual benefits in social learning, motivation, student support and teaching quality management.

The use of portfolio in the pre-clinical phase at the Faculty of Medicine, Chulalongkorn University
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Background: There is a growing trend in utilizing portfolio in undergraduate medical curricula around the world. The Faculty of Medicine, Chulalongkorn University has implemented portfolio in the pre-clinical phase (Phase 1-2) of the undergraduate medical curriculum since 2005. Its purposes are to promote students’ reflective ability, to facilitate the mentoring process and to provide evidence of achievement of the curriculum’s learning outcomes. Students are required to pass their portfolio assessment in order to graduate.

Summary of work: Phase 1-2 portfolio focuses on seven learning outcomes. There are three types of content in the portfolio: academic experiences, extracurricular activities and student-selected components report. Students have to submit their portfolios to their mentors twice a year. Students’ portfolios are, then, double-marked by the portfolio assessment committee at the end of Phase 2.

Summary of results: The result from the first summative portfolio assessment showed that many medical students did not know how to reflect. Of the 226 submitted portfolios, 28.3% had less than half of the expected learning outcomes reflected properly. Only 21.7% could reflect on all seven learning outcomes.

Conclusions: Portfolio is proved a worthwhile assessment procedure. It has provided more information of medical students’ reflective ability which other instruments have yet to demonstrate.

A comprehensive model for healthcare team training
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Research Question: “What models most reflect interdisciplinary teams in healthcare contexts comprising all aspects patient care?” The study aimed was to identify a model of healthcare teams, to inform the development of interdisciplinary team training across multiple dimensions of team performance.

Context: The provision of healthcare is facilitated through the coordination of care across multiple specialties. Healthcare team effectiveness is a critical component of successful patient care outcomes, as well as the successful maintenance of practice across healthcare systems. Recognizing that effective teamwork improves both clinical and financial outcomes, interdisciplinary team training has emerged as a popular concept for improving team efficiencies and accuracy, with assessment of team-based competencies recognized as central to establishing patient safety oriented practice.
problems developing this competence. Following Mandin², diagnostic reasoning can be understood as schema-based problem-solving.

Finding the right diagnosis is a key-competence for every physician. Medical students in their clinical education have contextual information for the development of their competence. This context consists of a problem, several solution steps, and the final solution itself (correct diagnosis). It has been shown that learning with worked examples focuses the learner's attention on information that is relevant to schema construction. However, studies have shown that the worked-example-effect can be learned from work in other domains, we need to consider the best way to use this knowledge for healthcare teams. The 4-types of healthcare teams identified through this study will help inform the selection of appropriate team training and assessment of competencies. This is an area for further exploration and development.

8K/RP2
Improving medical students’ diagnostic competence by case-based learning with worked-out examples: evaluation of a learning environment

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Research Question: To foster medical students' diagnostic competence we developed a computer- and case-based learning environment to implement a problem-based worked-example approach in the field of arterial hypertension. A worked-example consists of a problem, several solution steps, and the final solution itself (correct diagnosis). It has been shown that learning with worked examples is a very effective method for the acquisition of competence. This worked example effect is explained by the cognitive load theory¹. Studying worked examples imposes lower levels of cognitive load on the learner than solving training problems. Therefore more cognitive resources are available for demanding processes of schema construction. Moreover, studying worked examples focuses the learner's attention on information that is relevant to schema construction. However, studies have shown that the worked-example-effect can be enhanced. In order to increase effectiveness, two additional measures were implemented in this study: worked examples with built-in errors and detailed feedback. To what extent is diagnostic competence facilitated by worked examples with built-in errors and detailed feedback? What influence do both instructional measures exert on students' acceptance and subjective learning outcomes? To what extent are effects of the learning environment sustainable?

Context: Finding the right diagnosis is a key-competence for every physician. Medical students in their clinical education have problems developing this competence. Following Mandin¹, diagnostic reasoning can be understood as schema-based problem-solving. Therefore, effective learning environments should provide methodical support for the students constructing and organizing schemata.

Methods: In the context of a study in the learning laboratory at University of Munich, two measures were varied experimentally. 153 students were randomly assigned to the four conditions of a 2x2-factorial design: examples with built-in errors vs. correct examples and detailed feedback vs. knowledge of correct result (KOR). Each group had to work through six worked examples. Diagnostic competence was assessed by MCQs, key features and problem solving tasks immediately after the learning phase (max. score 68 points). Acceptance and subjective learning outcomes were assessed by two questionnaire scales. Sustainability was assessed with students from the second clinical semester in which arterial hypertension is part of the curriculum and also part of a regular MC test, which assessed primarily conceptual knowledge. From this population, we draw a sample of students who participated in our study (n = 52; experimental group) and compared them with the rest of the students from the second clinical semester (n = 145; control group) concerning the results of the regular MC test. In regard to relevant learning prerequisites, students of the experimental and control groups did not differ.

Results: The acquisition of diagnostic knowledge is significantly improved by using examples with built-in errors in combination with detailed feedback (M = 47.30 (7.64)). The condition “examples with built-in errors and KOR-feedback” resulted in the lowest learning outcomes (M = 40.57 (6.75)). These effects were independent from differences in time-on-task and prior knowledge. Both acceptance and subjective learning outcomes were not influenced by the two measures. Scores in both rating scales were rather high. Results based on written assessments of sustainability show that students using the learning environment outperformed their fellow students who did not take part in the study.

Conclusion: This new instructional approach that combines worked-examples with elements of problem-based learning seems to be an efficient way to foster diagnostic competence. If the positive findings of our study can be replicated, this new instructional approach to the learning environment should be considered to improve the clinical curriculum.


The retrospective pre-post: a valid, practical method to evaluate learning from an educational program

Research Question: We compared traditional and ‘retrospective pre-post’ methods of self-assessment of learning to an objective learning measure to assess if either correlated to actual learning. Theoretically, the ‘retrospective pre-post’ method offers the advantage of a ‘common metric’ for learners to judge their knowledge — important when the intervention recalibrates the learners’ self-rating criteria (the response shift bias). 

Context: Program evaluation remains a critical, but underutilized, step in medical education. Reflective evaluation can promote curricular evolution to meet the needs of students, the educational institution and ultimately improve patient care. Kirkpatrick outlined four levels of training evaluation: learner reaction, learning, transfer, and results. While learner satisfaction is important for learner motivation, it does not provide information on the full impact of a training program. Conversely, evaluating the impact of a specific instructional intervention on patient outcome is not feasible due to time and resource constraints. Therefore, for specific programs, a focus on learning and transfer into clinical practice is most appropriate. While a subjective self-assessment could be considered a practical and inexpensive method to assess their learning, previous research has questioned physicians’ and students’ ability to self-assess.

Methods: 47 medical students (clinical clerks) with prior training in Advanced Cardiac Life Support for adults participated in a voluntary 4-hour pediatric resuscitation course. They completed subjective self-assessments on pediatric resuscitation and two distractors (fracture management and toxicology) before and after the intervention. Students were also asked, after completing the course, to rate themselves as they were at the outset (the ‘retrospective-pre’). The changes in traditional and ‘retrospective-pre’ to post course subjective measures were then compared to objective-based multiple choice exams. The pre and post exam questions were taken from the Pediatric Advanced Life Support (PALS) course, the most widely taught pediatric resuscitation course in North America, with its content based on international consensus-based guidelines. The pre and post exams were empirically tested for equivalency before administration.

Results: Students’ subjective mean scores on the traditional and ‘retrospective-pre’ to post designs increased identically from 1.87/5 to 3.67/5 (p<0.001). Their scores on the objective test also increased from 12.55/22 to 17.83/22 (p<0.001). Correlations between the change in subjective and objective measures revealed a Spearman correlation of -0.02 and -0.13 for the traditional and retrospective pre-post methods. Students reported the two distractors changing 29 times using the traditional pre-post design but only 11 times using the retrospective-pre-post method.

Discussion: The retrospective-pre post, an alternate method for self-assessment, shows promise as a practical method to evaluate the learning of students, as it can identify where learning has or has not occurred. The approach was not effective in quantifying the learning for individual students, as the Spearman correlation was close to zero. However, the accurate identification of learning itself is helpful in educational program evaluation as student learning is a more relevant decision criterion than learner appreciation. The retrospective-pre post may also be valuable in situations where formal ‘pre-evaluation’ might unduly influence the students’ behaviour in the learning program. Our results are generalizable to other program evaluation contexts, specifically medical student clinical education. The learners’ ‘social desirability’ to demonstrate change may be more important when learners are formally evaluated and we suggest caution be exercised using the retrospective pre-post (or any subjective measure) under this circumstance. While we would advocate for the use of the retrospective pre-post as the primary method of subjective evaluation, further research should be undertaken before replacing the traditional pre-post design entirely.

Conclusions: Students can accurately identify, but not quantify, knowledge gain via traditional and retrospective pre-post ‘subjective’ measures. The retrospective pre-post method of self-assessment more accurately excludes perceived change in non-targeted subject matter.

How do private general practitioners teach medical students without losing money or getting home late?

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Research Question: Previous research has shown that neither individual consultation length nor number of patients seen showed any reduction for rural general practitioners teaching in the Flinders community-based clerkship in their student teaching sessions compared to sessions where no student was present. This research aimed to quantify and compare what mix of in-consultation activities actually occurred in both situations in order to understand how the doctors can make the time to teach without increasing the overall time taken for patient care. The specific research question was: How does the time spent by the GP in patient care activities change when a student is involved in the consulting session?

Context: In the Flinders University four year graduate-entry medical course, a subset of students chooses to spend entire third year in a rural general practice as part of the Parallel Rural Community Curriculum (PRCC). Time spent in patient care is directly related to income generation in the Australian system. Therefore, the financial sustainability of this educational approach is clearly affected by the perception that such teaching would take extra time and therefore either reduce the number of patients seen, and therefore the income of the teaching clinic, or increase the length of the working day, thus incurring opportunity costs for family time, recreation, and other pursuits. Students begin consulting with a patient in their own consulting room while their GP supervisor sees another patient in the consulting room next door. After the GP completes the consultation with their patient, the GP then joins the student for completion of the student’s consultation. Using this parallel consulting model, we previously showed that consultation length does not increase when rural general practitioners supervise medical students. Why is this so?

Methods: A prospective cohort study of 523 videotaped consultations was undertaken. Consultations were classified as either Teaching (with a student participating), Parallel (in a teaching session, but no student participation), or Lone (no student present in the session). Consultations were analysed in 15 second intervals using a modified Davis Observation Code to define general practitioner activity. Mixed model analysis using SPSS accounted for clustering of consultation activities within doctors, and controlled for confounding factors.


8L/SC1
How do students give feedback?
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Background: Medical students at the VUmc in Amsterdam, The Netherlands, studying in ‘VUmc-Compas’, a competency based curriculum inspired by the CanMEDS framework, learn to give feedback from the start. A group of these students participated as a team in a student project. The quality and properties of their feedback in a 360 degree peer assessment was evaluated.

Summary of work: 55 medical students (majority ‘VUmc-Compas’, only few old curriculum), participated at the World Parkinson Congress 2007 in Amsterdam where they worked as volunteers in a ‘Student Hospitality Crew’, supporting the event organization. 46 of the students participated in an evaluation to assess their learning experience. The students gave each other specific feedback. The feedback collected was reviewed by 10 randomly selected students from the project evaluating the items as: good quality or not good. 4 students categorized the items according to the feedback framework of Hattie & Timperley.

Conclusion: Although participating students know how to give feedback, giving good feedback remains a challenge.

Take-home message: We teach our students to give feedback and we train our colleagues. The question remains if that will make them successful. Students are eager to contribute to solve this issue.

8L/SC2
Salaried students and inter-professional clinical training; a peer-to-peer teaching approach
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Background: The Karolinska Hospital Clinical Skills Centre (KCSC) provides opportunities for hospital staff and students to attain and practice clinical aptitudes in a secure setting. One great challenge of the centre is to cater for students. Another is continuous development in order to keep accessible resources up-to-date with current clinical evidence-based practice.

Summary of work: Since 2000, the KCSC includes medical and nursing students amongst its salaried staff. Initially, this was done in order to augment availability of the centre by increasing opening hours to comprise evenings. Over time, the role of the student employees has expanded to include CPR training of peers, arranging lunch-seminars with top-ranked researchers, and an active involvement in the development of the KSCS concerning courses and equipment needed. Furthermore, the student instructors are recruited from medical school and nursing school, allowing an inter-professional approach.

Conclusions: With high attendance at lunch-seminars, and positive remarks from students, the student involvement in KCSC management has proven fruitful. Furthermore, the student instructors with their dual identity as employees and users offer direct input concerning what resources are in demand amongst students.

Take-home message: Employed students provide a key function when catering for students’ needs in a clinical training facility.

8L/SC3
A student-initiated undergraduate program on basic skills for peer teaching
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Background: Learning in the clinical environment requires frequent, informal teaching interactions among peers with which most students feel uncomfortable. Four medical students initiated an undergraduate program providing tools to enhance informal peer teaching.

Summary of work: Students and faculty members developed and taught the program, starting with a compulsory introduction forum “How to best profit from your clerkships” and followed by five interactive, elective workshops: one-to-one peer teaching, training procedural skills, giving feedback, orienting peers in a new clinical environments, inter-professional communication, and reflective practice. The program ended with a formative assessment against predefined criteria during a simulated teaching interaction with a “standardized peer”.

Summary of results: We implemented the program in 2006-2007 with 16 elective students. All of them successfully reached the predetermined performance levels and expressed high satisfaction, both during the oral feedback session and in a 12-item evaluation questionnaire (mean range: 4.1 to 4.8, on a scale from 1 to 5).

Conclusions: We successfully implemented an undergraduate elective program providing tools for peer teaching in real clinical practice. Its potential impact on preparing future residents’ teaching skills requires further research.

Take-home messages: Peer teaching is central in clinical learning, but most students lack relevant skills. Such skills can be successfully trained in an undergraduate program.
Background: In a dissecting room employing small-group facilitation for anatomy teaching we compared teaching by near-peers with that of faculty composed of trained graduate demonstrators.

Summary of work: Using a 1-5 Likert-type scale, small group facilitation by 22 senior students and 12 graduate demonstrators was rated by experienced assessors over 8 weeks. Teaching style (didactic or facilitatory), use of dissection room resources, communication and inspiration, and professionalism as a facilitator were assessed. Demonstrators were also globally rated. Similar scales were used to assess the same demonstrators by the students they had taught.

Summary of results: We detected no significant difference in the performance of near-peers compared to faculty demonstrators, as rated by assessors and students. Although non-significant, we found assessors rated near-peers as less didactic and more professional. We also found the average of assessors’ ratings across the four themes was higher for near-peers, although this was non-significant, with no difference between assessors’ global ratings for the two groups. Student and assessor ratings of the four items were weakly positively correlated.

Conclusions/Take-home message: Near-peer teachers are no worse than faculty demonstrators in their teaching performance as anatomy demonstrators, and may be better.

8M/SC5
Wikis and online peer review to stimulate collaborative learning during clerkship
M Dankbaar*, R Turk, E van Beeck (Erasmus University Medical Centre, Postbox 2040, Opleidings Instituut Geneeskunde, Room FF 230, CA 3000, Netherlands)

Background: Students do a 2-week clerkship in Public and Occupational Health during their last year. During this period, they also attend classes, do a group assignment and present their plan at the end of the 2 weeks. The assignments have been redesigned using online peer review and wikis to stimulate collaborative learning.

Summary of work: Subgroups of ±4 students, working at different locations, get an assignment. Assignments are aimed at improving the evidence-based knowledge of students and developing collaborative skills. We offered online communication facilities for group work and online information (assignments, plans, peer reviews). In the second part of the pilot, wikis were introduced.

Summary of results: Evaluation results (n=100) show that the majority of the students find the assignments interesting; half of the students claim they have learned from their group members and from feedback. Online communication facilities were hardly used; the online accessibility of information was used and appreciated. The evaluation of the wiki varied strongly. The lecturers felt the quality of the plans was improved, using peer review.

Conclusions/Take-home messages: Collaborative learning, using online peer-review, is a powerful tool to improve the quality of group work (develop evidence-based plans), even when students are in their clerkship at different locations.
Reliability of Multiple Mini-Interview for selecting medical students at Kangwon National University School of Medicine in Korea

HyeRin Roh*, Gibong Chae, Hee Jae Lee, Seung-Joon Lee (Kangwon National University School of Medicine, 192-1 Hyoja 2 dong, Chunchon-si 200-701, Republic of Korea)

Summary of work: Eighty four applicants participated in the MMI which consists of three 8-minute stations with 9 check items and 3 global items each. We analyzed the reliability of the MMI with urGENOVA and GENOVA for PC and surveyed these applicants and interviewed focus groups of professors for the evaluation of the MMI.

Summary of results/Conclusions: The reliability was 0.791. Most attributable variance component was items. Students answered that the interview was impressive and enjoyable. Students also satisfied the level and quality of the cases. Professors stated that more stations and raters were needed.

Take-home message: MMI can be reliable for assessing applicants to medical school in Korea.

Sources of error variance in assessment of medical school applicants with the Mini Multi Interview (MMI)

Peter H Harasym*, Jean-François Lemay, Jocelyn Lockyer, Wayne Woloschuk (University of Calgary, 3330 Hospital Drive, Calgary, Alberta T2N 4N1, Canada)

Summary of results/Conclusions: The Multiple Mini-Interview (MMI) created at McMaster University in 2001 has been used in various countries. To date there have been no studies on the United States pre-medical student perception comparing the MMI to the traditional interview. Students completed both a traditional interview and MMI in February 2008 at one US medical school. Out of 90 students, 61 students completed an anonymous voluntary survey comparing the MMI and the traditional interview experience.

Summary of results: A paired t-test (p < .05) showed that students believe the traditional interview gives the Admissions Committee a more accurate assessment of their potential as a practicing physician and a more accurate assessment of their potential as a medical school student. Students found the MMI more intellectually challenging, but were equally nervous and emotionally challenged for both. With regard to having the Admissions Committee review one type of interview results over the other, students did not prefer the interview over the MMI, or vice versa. Responses to an open-ended survey question indicated students believed the MMI did not allow them to highlight their strengths.

Conclusion/Take-home message: Students interviewing for medical school believed the standard interview more accurately assessed their potential.
8N/SC1
Implementing a virtual international network of Health Promotion in InterProfessional Education (HPIPE)
Tangerine Holt*, Ann Wylie*, Marc Soetfout* (Monash University, Building 15, Centre for Medical and Health Sciences Education, Faculty of Medicine, Nursing and Health Sciences, Clayton Campus, Clayton, VIC 3800, Australia)

**Background:** Health promotion is an essential component of medical education and so a virtual international network could provide medical and health professional educators with valuable information and guidance for best practice. This has resulted in the creation of a website to be linked to a repository of HP resources hosted by the FMNH, Monash University.

**Summary of work:** At AMEE 2007 we worked on the idea of a virtual health promotion international virtual network. At OZZAWA 2008 we presented a poster, conducted a workshop and symposium on health promotion. In our workshop we examined the cross-cutting issues involving health promotion education from a broad range of perspectives: educational objectives, content, and outcomes – accessibility, feasibility, and quality – in the establishment of best evidence guidelines.

**Summary of results:** Participants recognised the changing landscape of international health requires medical educators to collaborate in this global development of health promotion curricula. Key issues raised include the development of best evidence principles to guide the selection of resources; definition of global standards and identification of strategies in health promotion; research opportunities; educational innovations; and best practice issues.

**Take-home message:** The creation of an international forum for the exchange of ideas and resources will be linked to a repository of teaching resources with a plan to develop a compendium of case studies and exemplars on health promotion curricula for use in medical and health professional education. AMEE 2008 will be an excellent opportunity to create this international forum!

8N/SC2
The missing link: Interprofessional education and faculty development
B Frank*, KV Mann*, J McFetridge-Durdle, R Rowe, H Beanlands, S Mansour, R Martin-Misener (Dalhousie University, Division of Medical Education, Clinical Research Centre (CRC), 104-5849 University Avenue, Halifax, NS B3H 4H9, Canada)

**Background:** Seamless Care is a three-year Health Canada-funded project in interprofessional education (IPE). Pre-licensure interprofessional learning is key to preparing health professionals to work in collaborative teams. Yet, faculty preparation for interprofessional teaching is relatively under-addressed.

**Summary of work:** Over 2 years, 14 teams, comprising pre-licensure learners from five health disciplines, participated in an eight-week experience in nine clinical sites. Each team was assigned a patient and guided by an interprofessional preceptor and a discipline preceptor. The Faculty development intervention included a 1-day project orientation, workshops and support from an interprofessional facilitator (IF). Measures taken pre-intervention, immediate and three-month post-intervention, included readiness, efficacy and focus group interviews.

**Summary of results:** Preceptors reported the need for faculty development to help them acquire new skills to facilitate IPE, particularly student clinical teams. They valued the ongoing support of the IF highly. Reported challenges included incorporating student teams into sites of ongoing care, coordinating student schedules, and managing students’ competing responsibilities.

**Conclusions:** Precepting interprofessional clinical teams requires deliberate faculty development. New skills take time to acquire.

**Take-home messages:** Faculty development for IPE is needed; however, ongoing support is key. Faculty resources are essential to arrange and support experiential IPE, including dedicated time.

8N/SC3
Training tools in interprofessional collaboration competencies
L Talbot*, N Landry, D Lauzier, J Trottier (University of Sherbrooke, 3001 12e ave Nord, Sherbrooke J1H 5M4, Canada)

**Background:** This research aims at developing tools (video and training kits) to train students to interprofessional collaboration and prepare them in a simulated matter to deal with healthcare situations of practice in triads (students of the program of medicine, students of the baccalaureate in sciences nurses, students of the baccalaureate in social service and students of masters in occupational and physical therapy) and putting the patient at the center of care. More specifically, the project aims: (1) To develop simulations of interprofessional team work which implement competencies in team work towards better health for the patient; (2) To make this material available to Faculty and receive feedback from students. The presentation will discuss the individual competencies necessary to work in a team, and will demonstrate the usefulness of the material and the provided feedback received from Faculty and students.

8N/SC4
Multiprofessional approach to education: views of nursing, pharmacy and medical students
Souad de Roos*, Andrea Miltenburg Solnes, Paul de Roos (European Medical Students’ Association, c/o CPME Standing Committee of European Doctors, Rue Guimard 15, Brussels 1040, Netherlands)

**Background:** The World Healthcare Students’ Symposium is a event organised by European and international healthcare student organisations every 2 years. The aim of this event is to strengthen collaboration between students of different healthcare professions to improve healthcare.

**Summary of work:** In a workshop session with 200 students from 26 different countries with participants of different healthcare studies, students discussed and reported about their preferences on how they would like to learn with and about peers in other healthcare studies. Outcome consists of concrete ideas for learning activities, perceived obstacles and solutions for implementation and perceived benefits of such an approach to their education.

**Conclusion:** Multi professional learning is perceived as useful if the learning activities are meaningful in context of the future profession. There is a general feeling that it’s important to learn about the work of different professions early in the study to promote better collaboration between professions.

**Take-home message:** Student Associations in healthcare remain active in promoting a more multi professional approach to their education with a stronger emphasis on teamwork. Joint learning activities and collaboration between students associations should encourage this.
8N/SC5
An exploration of the preparation and support required for teachers involved with inter-professional education
Richard Gray (J Price to present) (Brighton and Sussex Medical School, Mayfield House, University of Brighton, Falmer, Brighton BN1 9PH, United Kingdom)

**Background:** Inter-professional Education (IPE) prepares students for effective team working. The value of IPE is linked to the quality of teaching and there is a need for research to focus on the training of such teachers. This study surveyed 31 UK medical schools to determine: a) whether IPE is occurring and b) the extent and nature of preparation/support for teachers of IPE.

**Summary of work:** A questionnaire was sent to all medical schools. A second questionnaire was then sent to the 13 medical schools reporting preparation/support sessions for IPE teaching to ascertain further details about such programmes. Six organisers and 8 participants of support/preparation sessions were interviewed by telephone. 25 medical schools responded: 17 of these reported IPE sessions. 15 schools provided preparation sessions for new teachers and 11 provided support for established teachers of IPE.

**Conclusions:** 1. IPE is challenging and requires skills additional to mono-professional teaching; 2. Preparation and on-going support for teachers of IPE although practically difficult to arrange are essential; 3. Preparation should include theory, practice and the development of an inter-professional philosophy; 4. Support should involve evaluation of student sessions to facilitate the continual development of the programme and the teachers.

**Take-home message:** This research will help inform the development of a flexible framework for preparation and support of IPE teachers that can be offered to UK medical schools

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80 Program assessment to judge the effect of changes and to make improvements

Ingrid Philibert* (Accreditation Council for Graduate Medical Education, United States), Robert Galbraith* (National Board of Medical Examiners, United States), Julie K Johnson *(University of Chicago, United States)

**Background:** A well-designed and executed assessment strategy can answer questions about program effectiveness, assess the success of interventions and guide future improvement efforts. The workshop will emphasize engagement of stakeholders, iterative refinement of approaches in ongoing assessment, and using a framework that can incorporate local goals and context.

**Structure:** Interactive workshop, combining brief lectures, small group exercises and discussion.

**Intended outcomes:** (1) Introduce forms of program assessment suitable for different aims; (2) Frame assessment questions, and understand the link to objectives, criteria and standards; (3) Select data for program assessment in a quantitative, qualitative and mixed framework; (4) Aggregate and interpret existing data to accomplish the goals of program assessment, using a “realist evaluation” approach.

**Who should attend:** Medical educators across the continuum from medical school to continuing medical education.

**Level:** Intermediate to advanced.

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8P Training reviewers of AMEE ‘Research in Medical Education’ papers

William McGaghie (Northwestern University Feinberg School of Medicine, Chicago, United States)

**Background:** Research in medical education is very much on today's agenda. As a way of contributing to this, the AMEE Executive Committee introduced for the first time in 2008 some Research in Medical Education sessions where papers demonstrating sound medical/healthcare professions research could be presented and discussed. Twenty-eight papers were selected for presentation from the 160 abstracts submitted, representing a range of research methodologies. Abstracts went through a two-stage selection process. The first stage was conducted by the Scientific Committee and those selected for stage two were sent out to two external reviewers. Feedback was given to authors of all stage 2 abstracts. Revisions were requested for approximately 50% of those subsequently accepted by the Scientific Committee for presentation. AMEE is now looking to recruit more reviewers for the 2009 Research in Medical Education Paper sessions and it was decided that a workshop should be offered for those considering offering their services as a reviewer for these papers.

**Content:** Participants will discuss the criteria against which research paper abstracts should be judged. This will help to formulate a set of guidelines for reviewers. Issues to be addressed include (1) the importance of the research question being addressed; (2) the propriety of the research methodology; (3) issues relating to study implementation; (4) issues relating to data analysis and study reporting; and (5) the ability of the abstract to convey to the reader the aims, methodology, and conclusions to be drawn from the work.

**Who should attend:** Those familiar with research methodology, who are interested in reviewing abstracts for future AMEE Research in Medical Education Paper sessions. It is likely that participants will have published papers in medical and healthcare professions education journals.

**Level of workshop:** Intermediate/advanced.

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80 Script Concordance Tests: principles and practical issues

Bernard Charlin* (University of Montreal, Canada), Stephan Ramaekers (University of Utrecht, The Netherlands)

**Background:** The capacity to reason in contexts of uncertainty is a characteristic of expertise in professions. The assessment of this capacity is difficult to achieve in standardized manners. The Script Concordance Test is a reliable and valid tool for assessment in context of uncertainty.

**Objectives/intended outcomes:** Participants will: (1) discover SCT, an innovative test based on written simulations (paper or computer-based); (2) discuss practical issues, informed by research findings.

**Format and content:** Presentation of SCT principles; examples of SCT items taken from assessment of reasoning skills in several medical specialties and in veterinary medicine; practical issues related to item writing, scoring or panel composition. The format will be interactive, with emphasis on free discussion and exchange of ideas.
Who should attend: Undergraduate, post-graduate, and continuing education in the health professions; So far, the tool has been used mainly in medicine but can be applied in every health profession.

Workshop
8U Attracting participation in faculty development for education

**Structure:**
- Introduction of participants and their experience with the workshop topic; Review of participants’ questions; Brief introduction of multi-source feedback and its applications; Dos and don’ts of the face to face feedback session; Practice on the basis of case description; Discussion and conclusion.

**Who should attend:** Supervisors and residents who have experience with multi-source feedback or those considering its introduction in the curriculum.

**Level of workshop:** Beginners/intermediate.

Workshop
8S Serious games: Interprofessional Disaster Emergency Action Studies (IDEAS)

**Trish Dryden**, **Laurie Mazurik** (Centennial College, PO Box 631, Station A, Toronto M1K 5E9, Canada)

This interactive workshop is designed for medical educators with an interest in gaming simulation as a tool for inter-professional and disaster/emergency education. Five Toronto colleges and universities recently piloted an undergraduate curriculum in inter-professional collaboration and patient-focused care for medicine, nursing, allied health, police, EMS, social work and media students. The challenge was to bring students from different locations together in a manner that was engaging, accessible and did not disrupt their schedule. The result: a multi-player Internet game. Students self schedule and play the game in real time for 60 minutes with others who could be located anywhere in the world. An on-line curriculum supports the game, allowing students the opportunity to explore team-building theories, media clips and asynchronous discussions. At the conclusion of the course participants meet face-to-face in a live mass casualty exercise where they play a patient, family member or student professional assisting victims. Workshop participants will also experience a ‘hot wash debrief’ on critical lessons learned.

**Who should attend:** All faculty involved in medical education and curriculum development.

Workshop
8T Face to face feedback based on multi-source feedback information

**P Remmelts**, **P M Boendermaker** (University Medical Center Groningen, Ant. Deusinglaan 1, Groningen 9713 EV, Netherlands); **Cees van der Vleuten** (University of Maastricht, Netherlands)

**Background:** In literature dozens of methods for setting a passing standard are described. There is no golden standard and different methods lead to different outcomes. Some conditions have been identified that can enhance the quality of standard setting methods: (1) the method has credibility; (2) the method is easy to understand and use (transparency); and (3) the method yields realistic outcomes. Realistic outcomes combine a credible minimum competence level with an acceptable passing rate. Some (favorable) methods are time consuming and therefore too costly to apply to the context of in-house tests. The question is which affordable, easy to use methods will result in defensible outcomes.

**Intended outcome:** This workshop provides participants with an opportunity to explore the different outcomes of standard setting methods. This workshop will (1) challenge some of the traditional ways we think about standard setting, and (2) familiarize participants with a new and affordable standard setting method which combines the advantages of different methods.

**Format and content:** Working through guided activities, discussion and defining realistic outcomes of standard setting procedures.

**Who should attend:** All faculty involved in medical education and curriculum development.

Workshop
8R Going Dutch: affordable standard setting methods

**Janke Cohen-Schotanus**, **P M Boendermaker** (University Medical Center Groningen, Ant. Deusinglaan 1, Groningen 9713 EV, Netherlands); **Cees van der Vleuten** (University of Maastricht, Netherlands)

**Background:** In literature dozens of methods for setting a passing standard are described. There is no golden standard and different methods lead to different outcomes. Some conditions have been identified that can enhance the quality of standard setting methods: (1) the method has credibility; (2) the method is easy to understand and use (transparency); and (3) the method yields realistic outcomes. Realistic outcomes combine a credible minimum competence level with an acceptable passing rate. Some (favorable) methods are time consuming and therefore too costly to apply to the context of in-house tests. The question is which affordable, easy to use methods will result in defensible outcomes.

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**Format and content:** Working through guided activities, discussion and defining realistic outcomes of standard setting procedures.

**Who should attend:** All faculty involved in medical education and curriculum development.
Workshop
8V Preparing for the unknown future: learning in a changing world

Charlotte Silén*, Italo Masiello*, Carl Savage*, Lena Boman*, Klara Bolander Laksov*, Uno Fors* (Center for Medical Education, CME, LIME, Karolinska Institutet, Berzelius väg 3, Stockholm S-171 77, Sweden)

Background: Medical education today is about playing catch-up with today's health care system – developing the necessary knowledge and skills to perform well today. But how does this fit with a world that is changing faster than ever? Will today's students be able to handle the unknown future? How can we as teachers educate students who are competent today as well as capable of dealing with tomorrow?

Intended outcomes: We welcome you to a workshop about the unknown, about what it means to learn, educate, and train for an unknown future. By exploring these questions, participants will reflect on not only what has worked in the past, but also work on developing innovative ideas related to their own teaching practice. Our aim is for medical education and medical educators to become better prepared for and better able to develop approaches intended to challenge and support students as they prepare for the unknown.

Structure: We will be making use of Adaptive Reflection, Appreciative Inquiry, and Problem-based learning to frame the discussions and challenge our assumptions, all the while relating to research and theories about learning for the unknown.

Who should attend: Teachers, students, educational developers, deans, university managers, and program directors.

Level of workshop: Intermediate/advanced.

Posters
8W eLearning case studies

8W/P1
An innovative university «online platform» for the tracking of clinical objectives for medical clerks
Martine Jolivet-Tremblay*, Ahmad Qazi, Marcel Julien, Raymond Lalande (Université de Montréal, Case Postale 6128, Succursale Centre-Ville, Province de Québec, Montreal H3C 3J7, Canada)

Background: The Obstetric anaesthesia department in the University Hospital of Wales is a busy tertiary referral unit for high risk patients. As the Consultants have a heavy clinical work load, a blended learning environment was created in order to enhance the learning experience of trainees.

Summary of work: The blended learning was delivered through the website www.airwayman.org and in the Simulator suite. The website provided the trainees with the clinical guidelines and protocols as a slide show, followed by a quiz to reinforce the learning. Having acquired the knowledge through e-learning, the trainees were offered skills training in the Simulator suite. Clinical scenarios training requiring split second decisions and protocol compliance using the simulator gave the trainees near life experience. The performance of the trainees was monitored continuously at work along with continuing education. On completion of the clinical training the trainees had to complete a MCQ test on the website as part of the assessment and feedback process.

Conclusion: Blended learning provides the trainers a means of assessing the trainees and feedback from trainees was encouraging and has enhanced their learning experience.

Take-home message: Blended learning is effective and easy to deliver.

8W/P3
High technology in Obs & Gyn for lower level medical students
Markus C Martin* (McGill University, 5845 Cote des Neiges #600, Montreal H3S-124, Canada)

Background: Trying to grasp certain obstetric skills can be very difficult for the junior medical students. These concepts and skills are often too abstract for them to visualize completely. These can include understanding the fetal head position, the size of the pregnant uterus and the flexion of the uterus.

Summary of work: Using WebCT, a special program was added to the package that third year medical students receive to facilitate their comprehension of these concepts. Because they can be accessed by the students at their leisure and as frequently as they wish, it has facilitated their understanding of these three topics. Opportunity will be given to those interested members of the audience to access this aspect of the computer program.
Moodle: merging continuous assessment with end of module OSCE in undergraduate Obstetrics & Gynaecology

R M McVey*, E Clarke, C Doody, F D Malone (Royal College of Surgeons in Ireland, Department of Obstetrics & Gynaecology, The Rotunda Hospital, Parnell Square, Dublin 1, Ireland)

**Background:** Moodle is a freeware interactive Virtual Learning Environment [VLE]. We describe a novel approach using Moodle, ensuring students attained maximum benefit from hospital-based learning.

**Summary of work:** We instructed students to record the clinical cases they presented during their hospital attachment. These cases were uploaded onto the course specific Moodle site. The uploaded assignments were individually marked by course tutors. At the end of the six week rotation the student were set an OSCE. One of the OSCE stations exclusively examined the contents of the uploaded cases. We looked at data generated through Moodle, specifically relating to these uploads.

**Summary of results:** We looked at completed data-sets for 199 students sitting the final professional exam in obstetrics and gynaecology in 2007. The number of uploaded cases per student was a reliable indicator of end-of-year marks.

**Conclusion:** Students’ activity on Moodle and number of uploaded cases correlates well with the Final Professional examination marks. Examiners and students were very positive in regard to this new style of OSCE station.

**Take-home messages:** The other measurable parameters within Moodle, in conjunction with the uploads may provide the initial steps towards the valid, online continuous assessment of undergraduate Obstetrics & Gynaecology.

Stimulating critical reflection in virtual communities of practice

E de Groot*, P van Beukelen, B A M van den Berg, P R J Simons (Utrecht University, Faculty of Veterinary Medicine, Yalelaan 1, Utrecht 3584 CL, Netherlands)

**Background:** Critical reflective behaviour of (para)medical professionals may be supported and stimulated by virtual communities of practice. Research on design of online environments, and the way they have to be implemented and sustained, has mostly been done in educational settings. Design criteria for a virtual community of (para)medical professionals are less clear.

**Summary of work:** We have conducted an online Delphi consultation among experts to confirm the value of principles of practice evoking critical reflective work behaviour (CRWB) and to explore design elements needed for a CRWB-stimulating online environment. The design elements we found have been elaborated upon in a workshop setting.

**Summary of results:** A subset of principles of practice and design criteria to guide our pilots with veterinary practitioners.

**Conclusions:** The Delphi consultation and workshop are running in May and the beginning of June. Conclusions will be drawn in August.

**Take-home messages:** Design principles for learning in virtual communities of practice have to be tailormade to the context of learning professionals.

Implementation of eLearning in an academic hospital

Ellen te Pas* (Academisch Medisch Centrum, Meibergdreef 9, Amsterdam 1105 AZ, Netherlands)

**Background:** In February 2007 the Academic Medical Centre in Amsterdam (AMC) started an eLearning project on “Basic Reserved Treatments”. Aim of this project was the implementation of eLearning in cooperation with the publisher Wolters-Noordhoff. The role of the AMC was to deliver expertise, materials, locations and staff. Wolters-Noordhoff took care of the medical writing, the didactic quality and production. The eLearning modules are appropriate for nurses, nursing- and medical students.

**Summary of work:** The AMC appointed specialists to provide subject matter expertise and a steering committee for reviewing the content. This steering committee included representatives from all groups. After a pilot project a didactical concept has been developed. Next steps were the development of storyboards and media. The AMC reviewed all the materials that went into production. The implementation at the AMC started with an evaluation project of 6 months that included about 100 participants. They started with a questionnaire on experiences with eLearning and on the current knowledge level. After the 6 month they had deliver another questionnaire. Currently the results are being evaluated on user satisfaction and the development of knowledge. From May on the modules will be enrolled to 1,200 nurses and students.

Teaching skin histology through an integrative, functional and clinical multimodality approach

Anca M Stefan* (Touro University College of Medicine, 19 Main St., Hackensack, New Jersey 07601-7023, United States)

**Background:** This multimodal project was implemented at the University of Massachusetts Medical School where the author directed the Histology course between 2004 and 2008.

**Summary of work:** Relevant information regarding cell biology, histology and the physiological response to internal/external factors was presented in an integrative manner and reinforced by scenarios suggestive for pathological processes. The students had to interpret, compare, and contrast the history, clinical features and mechanisms associated with each condition. The expected pathological changes were sketched on normal images of skin and the results compared with pathological images. The traditional microscope-based lab was complemented with virtual microscopy and computer-based exercises. Several online resources for self-directed study were also developed. They included a database of snapshots linked to the online lab manual, virtual microscopy, and interactive histological exercises.

**Summary of results:** This multimodal approach positively impacted the lab attendance and online resources usage. The interactive exercises were the most accessed component during each online visit. The usefulness of the online module was better rated by the students compared with the lab activities.

**Conclusions/Take-home message:** The project promoted students’ active learning and added more clinical relevance to basic sciences. It also contributed to the adoption of virtual microscopy on an institutional scale.

Is web-based ECG training useful in a blended learning setting?

Mikael Nilsson*, Anette Rickenlund, Lennart Jorfeldt, Kenneth Caidahl, Gunilla Bolinder, Uno Fors and Jan Östergren (Karolinska Institutet and Karolinska University Hospital, Depts of Medicine, Department of learning, informatics, management and ethics and Clinical Physiology, Karolinska University Hospital, Stockholm 171 76, Sweden)

**Background:** Web-Based Learning is increasingly used, but does not necessarily improve knowledge and continuous evaluation of this method is needed.
Summary of work: In a randomised trial medical students were offered to use a web-based ECG training programme as an adjunct to the conventional training in ECG interpretation. A pre- and a post-test on ECG interpretation was performed at the start and end of the course in internal medicine.

Summary of results: The 28 users in the intervention group achieved 9.31 points (SD 2.79) and 10.86 points (SD 3.14) p=0.048. In the control group the 90 non-users achieved 10.58 (SD 2.99) and 10.45 (SD 2.88) p=0.72. The intervention group had a numerically lower pre-test result than the control group (p=0.053) and the difference between the post- and pre-test result was statistically significant between groups (p=0.042).

Conclusions: Students with less knowledge in ECG training seemed to use the ECG training programme more frequently. Students in the intervention group who used the web-based ECG training programme improved knowledge in contrast to the control group

Take-home messages: The web-based programme needs further investigation concerning the specific elements of its design and its possibility to enhance retention. The characteristics of users and non users groups need further investigation.

8W/P9

Can a web-based simulation program be used to test medical students?

Sam Beom Lee*, Joe Beum Bang (Department of Emergency Medicine and Medical Education, Yeungnam University College of Medicine, 317-1 Daemyung-dong, Nam-gu, Daegu 705-717, Republic of South Korea)

Background: Web-Based Learning methods are variously applied to medical education but they have not been used for student assessment especially in comprehensive clinical diagnosis. The aim of this study was to evaluate a web-based simulation program used to test medical students.

Summary of work: 70 third-year medical students used the program 2 times each for 1 week and 3 weeks on cardiac arrhythmia, chest pain, airway and breathing, cardiac arrest simulation and then they answered the questionnaire. Their genders, ages, scores, computer skills, experience rate on similar simulated programs, and various opinions on usefulness of the programs were analyzed.

Summary of results: On the web-based comprehensive simulation program used to test medical students, the results were gender (t= 1.873, p=0.065), ages (F=241, p=0.786), scores (r=0.90, p=0.459), computer skills (r=0.91, p=0.453), experience rate on similar simulated programs (r=0.313, p=0.008), program's usefulness (r=0.516, p=0.000). Especially, under Simple Linear Regression (Adjusted R Square=0.285) t-values to apply it to test and experience similar simulated programs, and program's usefulness of giving understanding comprehensive clinical diagnosis process were 2.481 (p=0.016), 4.559 (p=0.000), respectively.

Conclusion: A Web-Based Simulation Program on comprehensive clinical diagnosis is useful for medical students. But to use it to test them, we give them much experience on various simulation programs especially comprehensive and integrated clinical content.

8W/P10

Electronic tools for the increase of interactivity in Medical Genetics teaching

Kamila Prochazkova*, Petr Novotny 2, Zdenek Sedlacek 2 (1 Department of Biology and Medical Genetics, Charles University Second Medical School and University Hospital Motol, Prague, 2 Primary School Sazavská 5/830, Prague, 3 Department of Medical G, V Uvalu 84, Sazavská 5/830, Ruska 85, Prague 150 06, Czech Republic)

Background: The teaching process in Medical Genetics should be practically oriented and interactive. Electronic tools help to enhance both these aspects. We have prepared two tools for Medical Genetics education.

Summary of work: The tool "Pedigrees" is based on DHTML. It helps students to become familiar with pedigree construction. The tool has two versions - one for use in seminars where students work together with their teacher and where the tool serves as a support of pedigree construction during the discussion about types of inheritance. The second version is conceived for individual home study and "Pedigrees" is incorporated into the Learning Management System "Moodle" and accompanied by theoretical information, diagrams and examples. The program "Genomics and Bioinformatics" is based on HTML and AJAX technology. It allows medical students to solve a cascade of several problems in clinical and molecular genetics using Internet databases and on-line data analysis servers. Students work with data of a virtual patient to establish his clinical and molecular diagnosis.

Conclusions: In general, these electronic tools allow medical students to practise in a virtual environment those situations, which are for practical reasons not easily accessible. Electronic tools ameliorate significantly the teaching process and effectively increase interactivity in Medical Genetics education.

8W/P11

Enhancing student learning on professionalism through the use of Web2.0 technologies

P H Dangerfield*, T Varga-Atkins, N Bunyan, S McKinnell, D Brigden, D Williams, M Ralph (The University of Liverpool, Sherrington Buildings, Ashton Street, Liverpool L69 3GE, United Kingdom)

Background: In Liverpool, medical students study in a problem-based learning (PBL) context. This study aimed at exploring whether the use of web2.0 technologies, in particular wikis, could enhance students' development of professionalism.

Summary of work: The use of wikis was piloted in four PBL groups in their first year of medical study using the wiki tool of the institutional virtual learning environment (VLE). Triangulated data were collected in the form of a small-scale survey, focus groups and facilitator interviews.

Summary of results: Students demonstrated a range of working patterns in-between PBL sessions in the way they collaborated with one another. Results highlighted the way students made use of both formal (e.g. VLEs) and informal (face-to-face and online social networking) learning opportunities. Students saw two main purposes of wikis: building a knowledge-base which serves as a resource for meeting their self-assigned learning objectives, or as a formative learning tool.

Take-home messages: How students view the purpose of the wiki and their own role within it (‘professional’/public vs learner/private) was seen to influence their interactions within the wiki and their PBL group.

8W/P12

E-learning versus classical teaching preceding the clinical introduction of medical equipment

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Background: Instruction in the use of medical equipment traditionally involves classical teaching. This study evaluates whether e-learning provides a useful alternative using volumetric infusion pump instruction as an example.

Summary of work: The study involved training of student nurses, randomly assigned to the e-learning group (N=38), or the classical learning group (N= 38).
Summary of results/Conclusions: No significant between-group differences were found regarding test score, and overall perception of usefulness of the training as well as assessment. However, e-learning was perceived to better stimulate self-study compared to classical teaching ($p = 0.006$). Furthermore, online e-learning was perceived as more comprehensible, and more clear ($p = 0.026$).

Take-home messages: E-learning proved to be non-inferior, and in some aspects superior to classical teaching. It seems a useful adjunct in teaching and assessing clinically relevant knowledge preceding introduction of (para)-medical equipment.

8W/P13
Online teaching of medical staff with MASTER PRO

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Background: Teaching in post-graduate education makes special demands on the E-learning applications used. Access to teaching material and registration of study progress should be simple, quick and time- and place independent. If interrupted, learners should be able to continue where they have left off, and learning paths should be open and individualized. Learning material should ideally provide teaching and testing in one, to register as well as fill-up gaps in knowledge.

Summary of work: During 2007, a new E-learning application by the name of MASTER PRO was developed at Leiden University Medical Center. Integration with the Internet portal MedicalEducation.nl (http://medicaleducation.nl) was established for distribution and registration. Several modules are now in use in the field of radiology, orthopedics, family medicine and minor surgical- and nursing procedures. Each module can contain several types of questions, such as multiple-choice and open questions, drag-and-drop, hot-spot and scale questions. All answers are logged and learners automatically receive an evaluation at the end of each case.

Conclusions: MASTER PRO is an easy to use E-learning package for teaching staff members. It runs on all Internet browser and operating systems, and has a fast development track.

Take-home messages: Several of the modules of MASTER PRO will be translated in English and become available on MedicalEducation.nl.

8W/P14
Best practice in technology assisted learning

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Background: Medical Education and training in the UK has undergone significant changes in the last few years, and in order to meet new education and training demands, for flexible education programmes, provided at a pace, place and time of the learner's choosing, technology assisted learning has been introduced.

Summary of work: The Postgraduate Deanery in Wales is responsible for overseeing the delivery and quality assurance of training programmes for junior medical staff. The E-Learning Unit (ELU), is recently established at the Deanery and has significant expertise in education, training and e-learning. The ELU has directed and implemented the development of a virtual learning environment for junior medical staff, and developed a number of technology assisted learning packages. These complement, and are integrated with face-to-face teaching programmes for junior medical staff induction, and specialty specific training.

Summary of results: There are currently two technology assisted learning packages developed by the team - one a resource for a mini mental state examination and the other a resource for the enhancement of education in acute pain management. Both these resources are pedagogically sound, following best practice in the development of such resources. These two packages will be demonstrated along with the key points which inform the production of such resources, and ensuring their use with an engagement strategy. Both packages are freely available to conference participants.

8X/P1
Do group processes in PBL differ when students study cases from real patients rather than artificial cases?

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Background: Problem based learning (PBL) traditionally uses a "paper case" as trigger material, to stimulate the group to work through the 7 step process. The use of details from real cases collected by students meeting, interviewing, examining and reviewing medical records of patients on their attachments lies outwith the traditional model of PBL. From a theoretical basis it is possible to suggest benefits to this approach: cases may seem more contextualised to students, as the patients involved were seen by themselves or colleagues; knowledge learned in relation to patients that students have seen may be better elaborated; the cases may seem less stereotyped than the artificial cases used in traditional PBL. This in turn may cause coverage of a wider array of learning issues, or may generate greater interest in the topic. The processes undertaken by PBL groups using "real patient" case is poorly understood. We aim to characterise the processes that students use when studying in this way.

Summary of work: This work uses an interpretivist theoretical framework with a naturalistic observation methodology. Group observation includes voice recordings and field notes, and documentary analysis. This is used to characterise group processes when PBL proceeds with real patient cases.

8X/P2
Evaluation of the stress module designed with Problem-Based Learning (PBL) principles

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Background: PBL is widely used in medical education, but there are relatively few reports on its evaluation.
8X/P3  
Comparing volunteer and conscripted tutors in Problem-Based Learning  
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**Background:** Vernon and Hosokawa (1996) reported that attitudes toward problem-based learning (PBL) varied with the kind and amount of participation. The faculty had a newly implemented PBL curriculum at the University of Missouri-Columbia School of Medicine. It is well understood that implementing a PBL program requires considerable investment on the part of faculty (Hitchcock and Mylona, 2000), so it is reasonable to assume that willingness to participate would also affect attitudes about PBL.

**Summary of work:** A formalized tutor-training program was implemented in the fall of 2007 in concert with the integration of PBL into the curriculum. This study examines differences in attitudes and beliefs about problem-based learning between faculty who identified as “volunteers” and those who were “required to participate” in the tutoring program. The survey examined familiarity and understanding of the PBL process as well as beliefs about the value of PBL, and attitudes of the participants towards incorporating PBL into the curriculum. Implications for tutor-training and further research are discussed.

**Conclusion:** This finding should answer the question of PBL effectiveness in delivering learning objectives among teaching staff members in medical schools and encourage its implementation.

8X/P4  
Problem Based Learning method is better in delivering learning objectives than lecture method  
F Kurniawan*, S Ali (Medical School Atma Jaya Catholic University of Indonesia, Pluit Raya 2, Jakarta 14440, Indonesia)

**Background:** Medical School Atma Jaya Catholic University of Indonesia started the competence based curriculum with SPICES approach for students admitted in year 2006, but is still running a conventional method for students before that.

**Summary of work:** In the first semester of the 2007 academic year, research methodology was given concomitantly to students from year 2006 in PBL and lecture method (hybrid curriculum) and to students before that in the conventional curriculum (students before 2006).

**Summary of results:** In the evaluation, the hybrid curriculum is better than the conventional curriculum in delivering the learning objectives. Not only had more students from year 2006 passed the final exam compared to the students before 2006 (86% vs 72%, respectively, p < 0.05), but also students from year 2006 achieved better grades compared to students before year 2006 (65.5 vs 58.9 respectively, p < 0.05). Moreover, PBL plays a major role in this achievement as 72% of students found PBL helped them comprehend the learning objectives.

**Conclusions:** This finding should answer the question of PBL effectiveness in delivering learning objectives among teaching staff members in medical schools and encourage its implementation.

8X/P5  
An investigation into FRS (Fixed Resource Session) offered in support of PBL (Problem Based Learning) in Year 1-2 of the medical curriculum in Glasgow  
Nana Sartania*, T Paslawski, R Kearney*, D Cook (University of Alberta, Faculty of Medicine and Dentistry, 2-74 Zeidler Ledcor Centre, Edmonton T6G 2K8, Canada)

**Background:** Problem-based learning (PBL) is an important learning experience in medical education. It is not known if a preparatory course (pre-PBL) will increase students’ interests in the use of PBL.

**Summary of work:** We developed and implemented an elective pre-PBL course in the autumn semester 2006 for the second year medical students. Questionnaire surveys were done at the start and end of the semester. The flipcharts written in each group were collected for content analysis, and oral feedback sessions were made to get the overall opinions of tutors.

**Summary of results/Conclusion:** The observational results, content analysis of flipcharts and data derived from feedback forms showed that the module has worked as planned and was perceived well by both the students and tutors. However, a more focused evaluation revealed some important problems, such as unfocused analysis of the scenario, inability to state a specific problem sentence or to define the learning objectives, insufficient preparation of the students, inadequate group dynamics, inability of the group leaders in conducting discussions and improper use of the flipcharts. This study was supported by a grant from The Scientific & Technological Research Council of Turkey, Social and Behavioral Sciences Division (Project #: SOBAG 106K046).

8X/P6  
Preparatory course of PBL in a medical school  
Jing-Jane Tsaï*, Tsuen-Chiuang Tsaï, Chyi-Her Lin (National Cheng Kung University Medical College, 138, Sheng Li Road, Tainan 704, Taiwan)

**Background:** Problem-based learning (PBL) is an important learning experience in medical education. It is not known if a preparatory course (pre-PBL) will increase students’ interests in the use of PBL.

**Summary of work:** We developed and implemented an elective pre-PBL course in the autumn semester 2006 for the second year medical students. Questionnaire surveys were done at the start and end of the semester.

**Summary of results:** Nineteen medical students were enrolled. In the initial survey, only 22% of them reported that they were ready for PBL and 79% of students expressed their willingness to change learning style helpful to them. At the end of the semester 78% students would recommend this course to their peers.
**Conclusion**: Pre-PBL course may help medical students become used to PBL tutorials.

**Take-home message**: Special efforts to prepare freshmen medical students with the chance of changing their mindset about the new learning format should be considered.

**8X/P7**

**Interactive Problem-Based Learning in temporal bone dissection laboratory**

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**Background**: Temporal bone dissection is a constant part of the postgraduate otolaryngology-resident training program, which was developed into a more interactive, problem-based direction to enhance the practical skills needed in otosurgery.

**Summary of work**: An interactive, problem-based teaching-learning environment was created into the temporal bone dissection laboratory. The participants got first the step-by-step introduction into the specific areas of the drilling work, had opportunity to follow up real on line ear operations, and were activated into the discussions and questionings during the drilling. A structural questionnaire was given both for the participants and for the tutors before and after the course. The results were evaluated.

**Summary of results/Conclusion**: Both the students and the teachers were highly motivated into the student-centered, interactive clinical reasoning. The friendly atmosphere was appreciated among the students, and the goals of deeper understanding of the study subject were achieved. The results of the evaluation will be discussed.

**Conclusions**: An interactive, problem-based learning is a suitable method in the postgraduate temporal bone dissection laboratory, and leads into a deeper understanding of the study subject.

**Take-home message**: Learner interaction and clinical problem based reasoning is an effective student-centered approach to learning in small groups in postgraduate training.

**8X/P8**

**The effects of Problem-Based Learning on academic motivation and self-directed learning readiness in medical school students**

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**Background**: PBL is an educational method which is designed for learners to encourage active participation in learning context based on constructivism. In PBL, complex authentic problems are served as the context and the stimulus for learning to learners. According to the purposes of this study were to verify the effects of PBL on non-cognitive characteristics of learners through the active participation.

**Summary of work**: The subjects of this study were 188 students in 1st and 2nd grade of medical school. Each of grade groups was given different PBL module and PBL Periods. 1st grade group was taught by 2 Modules (2 weeks) and 2nd grade group was taught by 5 Modules (5 weeks). Pretest-Posttest experimental design was applied for this study using Academic Motivation Test (AMT, Kim, 2007) and Self-Directed Learning Readiness Test (SDLRT, Guglielmino, 1977). The Methods of statistical analysis to test the hypotheses of this study were ANCOVA, MANCOVA, and Paired T-test Using SPSS 12.0.

**Summary of results/Conclusion**: PBL had positive effects on AM and SDLR in students, especially, academic self-efficacy and academic failure tolerance in AM. But PBL didn't have significant effects on SDLR totally. Also there were no differences in effects of PBL between the 1st and 2nd grade group.

**Take-home message**: Through PBL, students might be more motivated and self-directed in learning. Therefore PBL needs to be extended over medical education courses. Future studies are needed to confirm the most effective periods of PBL and the number of Modules.

**8X/P9**

**The effects of problem-based Learning on epistemological beliefs and self-regulated learning in otolaryngology residents**

Jung-Ae Rhee, Eun-Kyung Chung*, Sun-A Oh, Jae-Ha Kim, Jong-Suk Oh, Jeong-Gwan Cho (Chonnam National University Medical School, Department of Medical Education, 5 Hak-Dong, Dong-gu, Gwang-ju 501-746, Republic of South Korea)

**Background**: Epistemological beliefs (EB) are beliefs held by individuals about knowledge and learning. Self-regulated learning (SRL) is an element of social cognitive learning theory that states that learner behaviors and motivations as well as aspects of the learning environment affect learner achievement. This study evaluated the effects of problem-based learning on EB and SRL.

**Summary of work**: The subjects were 133 third-year medical students. Before and after participating in a series of PBL tutorials over one year, they had to complete a questionnaire on EB and SRL.

**Summary of results**: There were no significant changes in EB before and after the PBL tutorials; however, the SRL differed significantly before and after PBL. The results showed improvement in the SRL subcomponents, self-efficacy, internal value, cognitive strategy, and self-regulation in PBL, while PBL did not reduce the students' anxiety.

**Conclusions**: The characteristics of PBL, i.e., small co-operative groups and a student-centered learning environment, would facilitate students' SRL.

**Take-home messages**: This study showed that teaching-learning methods influence learner-associated factors. The results verified that PBL improved SRL. The fact that PBL did not change EB indirectly suggested that adult learners' EB may be static and unchangeable.

**8X/P10**

**The introduction of PBL-small group discussion for the planning of periodontal treatment to fundamental practice in 4th grade students of dentistry in Japan**

Akira Sugaya*, Hiroshi Tsujigami, Mitsuyoshi Kubota, Shigenari Kimoto, Shinji Deguchi (Kanagawa Dental College, 82 Inaoka-cho, Yokosuka, Kanagawa 238-8580, Japan)

**Background**: The importance of fundamental practice in clinical subjects is not only to learn the skill, but also the ability of observation, consideration, decision-making and problem improvement. We applied training of periodontal treatment planning by using PBL-small group discussion (PBL-SGD) to 4th grade students in Kanagawa Dental College. In this study, we report the value to this PBL-SGD system in the 6-years data from 2002-2007.

**Summary of work**: Each facilitator has 9-10 students. Students pick up the clinical problems and look for these causes in the chart, X-ray film and oral photographs, according to KJ manner. Then they try to make the planning for periodontal treatment according to the two-dimensional analysis consisting of the emergency and importance factors. Students and facilitators answered each questionnaire after the practice. Then students received the lecture of the treatment process for this practice.
Summary of results: In the results of the questionnaire, this PBL-SGD system for planning of periodontal treatment was rated as high value and interest from students and facilitators. On the other hand, some improvement points were suggested which are the evaluation of the ability for problem settlement and its continuance.

Conclusions/Take-home messages: This study shows usefulness of the PBL-SGD for periodontal treatment planning.

8X/P11
Changes in attitudes to the medical education among students after introduction of Problem-Based Learning
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Background: Problem-solving, decision-making and arguing are skills sought after in higher education, indicating high student activity and self-reliance. Studying a traditional and studying for exams are usually considered as markers of a more traditional behaviour in knowledge seeking. A change from a traditional to a problem-based curriculum at the medical school in Uppsala gave us the possibility to compare attitudes.

Summary of results: Second semester students from the old (n=129) and the new (n=114) curriculum answered a questionnaire (response >80%) asking to what extent the medical education encouraged important learning behaviours. They were also asked to score the importance of each item.

Significantly higher scores were found in the new curriculum students for problem-solving (p<0.0001), decision-making (p=0.0005) and arguing (p<0.02). Students in the old curriculum showed higher scores for study of details and for examination (p<0.0001). Similar scores were found for the importance of the encouragement, except for problem-solving, where the old curriculum students scored significantly higher.

Conclusions/Take-home message: Students found that a PBL-based curriculum encouraged self-regulated, active learning behaviours and less study of details and studying for exams. Results from the traditional curriculum students may be interpreted as a wish to be encouraged to more problem-solving.

8X/P12
Comparison of two Problem Based Learning modalities in first year medical program
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Background: Problem Based Learning (PBL) is used in “Introduction to Medicine” annual preclinical course in our first year medical curriculum inside a traditional medical curriculum.

Aim: To compare two modalities of PBL: traditional clinical cases (CC) and clinical forms (CF: short clinical history focused on signs and symptoms).

Summary of work: One hundred first-year students explored the same PBL objectives and contents. In the first semester 50 students performed the course with CC and the others with CF. In the second semester they switched method. A written test with multiple choices was applied to evaluate cognitive performance along with a short questionnaire (4-items Likert scale) to determine students’ perception at the end of each semester.

Summary of results: Test average scores were similar: 6.12 (CC) vs 6.07 (CF), 1-7 scale, p = NS. Students’ preferences were 64% (CC) vs 25% (CF), 11% without preference. Favourable opinions for the question “Was the activity motivating?” were 91% (CC) vs 68% (CF) and 92% (CC) vs 72% (CF) for better comprehension of contents.

Conclusions: Results show that, even though first-year medical students didn’t show differences in cognitive performance, they preferred traditional clinical cases as PBL teaching modality.

8X/P13
Nursing students’ junior cooperative learning
Mehdi Safari*, Fahimeh Safari (Tabriz University, School of Nursing and Midwifery, South Shariati Street, Tabriz, Iran)

Background: Problem based learning is a system design implemented more than three decades ago. PBL includes collaborative and reflective small group discussion, and student-centered, self directive learning that promotes critical thinking, decision making and clinical judgment in nursing students. It requires students to be actively engaged in learning through social and group interaction and cooperative learning that may increase interdependence and learning skills.

Summary of work: In this quasi experimental pilot study, 34 students were randomized and assigned to experimental cooperative tutorial and control groups. All student took a MCQ pre and post test.

Summary of results: All group members had a very good average score (grade score). The experimental group achieved significantly more than the control group. The group perceived that they learned more at a deep level but learning was “a little hard”.

Conclusions: The perception is that the role of PBL problem solving in group discussion and cooperative learning increased and enhanced knowledge and evidence of achievement in the affective domain.

8X/P14
Looking at medical education through medical graduates’ views and self assessment
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Background: The graduates from a problem based curriculum felt better prepared than traditional medical school in psychosocial skills; there were no remarkable differences in clinical patient management skills.

Summary of work: The study was carried out at two medical schools in Istanbul, Turkey. Istanbul University School of Medicine (IUSM) has a traditional curriculum and Marmara University School of Medicine (MUSM) has a system based integrated curriculum including problem based learning (PBL) sessions and training for clinical skills during their preclinical years while both schools have department based clerkships during clinical years. In both schools students were required to fill out a questionnaire about the curriculum content, learning and assessment methods and perceived professional competencies, one week before their graduation.

Summary of results/Conclusions: While IUSM students had higher scores in being knowledgeable in public health and forensic medicine, MUSM students had higher scores in using various learning resources, self and continuous learning, problem solving skills, research planning and implementing skills and (p<0.05).
**8X/P15**

Can the introduction of peer led PBL to a case based learning (CBL) curriculum increase intrinsic motivation to study?

**Authors:** Anshul Deeshraj*, D E Evans (Barts and the London, Queen Mary University of London, 22 Palmerston Road, Twickenham TW2 7QX, United Kingdom)

**Background:** Problem Based Learning (PBL) has been used as an instructional methodology in many medical schools around the world. There has, however, been very little written on the use of PBL as an adjunct to more traditional curricula. This study investigates whether PBL can be amalgamated into a principally didactic Case Based Learning (CBL) curriculum and whether this can provide added value to a student's educational experience without large resource implications.

**Summary of work:** 16 first-year medical students (two PBL groups) volunteered to participate in peer led PBL sessions offered in conjunction with their core curriculum. These students participated in discussions about curriculum changes of the year, their experiences in the two groups and their motivations to study PBL. The students completed a feedback questionnaire one week later. Students in the test groups completed a feedback questionnaire.

**Conclusions:** This will be completed in May 2008. We will present evidence for or against the use of PBL as an adjunct to curriculum delivery, and include reflections on the feasibility of such an intervention, and the challenges (political, cultural, organisational) that we experienced in its delivery.

**Take-home messages:** Better competencies in certain skills such as problem solving, self learning and researching could be due to established application of PBL and preclinical skills training. These results are parallel with first graduates' perceptions in Dokuz Eylul University School of Medicine which has a PBL curriculum.

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**8X/P16**

Graduates' self-reports on PBL benefits for their clinical everyday life

**Authors:** Andrea Antolic*, Dagmar Rolle, Rita Kraft (Arbeitsgruppe Reformstudiengang, Charité Universitätsmedizin Berlin, Charitéplatz 1, Berlin 10119, Germany)

**Background:** Studies have shown that PBL effects a high level of students' satisfaction with PBL and suggest that PBL could aid clinical reasoning, whereas concerning knowledge levels no different outcomes were measured compared to regular curricula. In Berlin a survey comparing regular and reformulated medical track students at the end of their medical study has shown significantly higher satisfaction with the reformed curriculum and students' subjective opinion to be better prepared for later clinical everyday work. There has been no study on these subjects with postgraduates, working as physicians in hospitals, as in Berlin only four age-groups of the reformed track have graduated yet.

**Summary of work:** A questionnaire for the reformed curriculum graduates was developed concerning their satisfaction with a PBL-based curriculum, their self-appraisal on clinical competencies and life-long learning. Furthermore the questions broach traits and the measure in which postgraduates find PBL useful for different aspects of everyday clinical life. Therefore one focus of the questionnaire concentrates on clinical reasoning, as in Berlin the PBL-concept changes during the ten semesters from problem-based learning to an expressly patient-based learning in the last five semesters.

**Summary of results:** The survey will be completed during the following months and the analysis of findings will be presented at the AMEE conference.

**Conclusion:** Whether or not in our study the graduates of the reformed track esteem PBL useful for clinical competencies awaits to be seen according to findings.

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**8X/P17**

I've got you under my skin. How to learn more about your PBL group – and how you're doin’

**Authors:** Peter Kube*, Andreas Braunsberg, Jörg Pelz (Charité, Universitätsmedizin Berlin, Charitéplatz 1, Reformstudiengang Medizin, Berlin 10117, Germany)

**Background:** PBL groups are led by facilitators, whose task is to foster students and to moderate learning processes. Facilitators need to know much about group dynamics, students' personal situation, and how group members judge facilitators' efforts. Giving and receiving feedback is indispensable for any progress. PBL sessions end with short feedback rounds where students and facilitator briefly comment on aspects of session and own contributions, too short and casual to be valued.

**Summary of work:** After 6 to 7 weeks with a new PBL group, facilitators can attain better understanding of group dynamics, individual strengths and limitations, and facilitators' guidance and shortcomings by semistructured open ended interviews with each student. Students touch upon aspects like getting on with medicine, curriculum, PBL, small group, and own performance. This is followed by students' feedback regarding the facilitator's governance and guarantor function in PBL, and facilitator's deep feedback to the student. Conversely, students depict their own, group members', and facilitator's position inside the small group similar to sociograms or paper and pencil family constellations.

**Conclusions:** After two years' experience, deep interview and sociogram proved to be essential for understanding of small group and own efforts as facilitator.

**Take-home message:** Knowing more about your PBL group and your efforts as facilitator pays off.

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**8X/P18**

DVD Clips as an adjunct to PBL sessions: do they improve outcomes?

**Authors:** David Gore*, Maria Ahmed, Rachel Isba, Beth Woolley, Ged Byrne, Paul O'Neil (University of Manchester, ATR4 1st Floor ERC, University Hospital of South Manchester, Southmoor Road, Manchester M23 9LT, United Kingdom)

**Background:** The curriculum at Manchester Medical School (MMS) is based around PBL stimulated by text-based cases. We investigated whether a supplementary DVD clip enhanced the generation of intended learning outcomes (ILOs) and student clinical experiences.

**Summary of work:** Ten-minute DVD clips specific to two existing PBL cases were produced. Each featured an expert providing a basic introduction to the topic. Thirteen PBL groups (n=113 year 3 medical students) were randomly allocated to test (n=7) or control (n=6). Test groups viewed the DVD before starting their case; control groups undertook PBL as usual. ILOs formulated by each group were recorded for comparison to the model ILOs. All students completed a diary recording their clinical experiences until closure of the PBL case one week later. Students in the test groups completed a feedback questionnaire.
Conclusions: ILOs were received from all PBL groups, and all test students completed feedback (n=57). Ninety percent of test students agreed or strongly agreed that the session was enjoyable, and more than half felt it was more enjoyable than other PBL sessions. Analysis of ILOs and clinical diaries is ongoing.

Take-home message: Preliminary results show that DVD clips are an enjoyable adjunct to PBL, and further analysis will show whether or not they improve outcomes.

8X/P20
Modeling and development of Simulation Problem-Based Learning (S-PBL) package for the health care providers
Jeong Hyun Park*, Young Ah Lee, Jae Hee Kim (Cheju Halla College, Kangwon National University, 1 Sangdong-dong, Samcheoksi, Gangwon-do 245-711, Republic of South Korea)
Objective: The objective of this study was to develop and apply a simulation-problem based learning (S-PBL) package in basic life support. Summary of work: This study was used to develop S-PBL in basic life support throughout 12 steps of PBL package development model. S-PBL methodology was implemented in second year students of department of emergency medical technology. Summary of results: (1) S-PBL package model was applied based on conceptual model of PBL. (2) Quantitative analysis of survey showed the effectiveness of learning, 3.59 points; 4.15 points of BLS and 3.84 of integration and practical use of knowledge. (3) The satisfaction, S-PBL package management, tutor and self-satisfaction score were 3.59, 3.82, and 3.39, respectively. Conclusion: This study suggested that S-PBL education would be necessary to improve tutor skill and achieve advantage of simulation and PBL.

8X/P21
Transition from a classical curriculum to Problem-Based Learning: twelve years after
Jiri Horak* (Third Faculty of Medicine, Charles University, Ruska 87, Prague 10 CZ-100 00, Czech Republic)
Background: A thorough curricular reform has been implemented at the Third Faculty of Medicine, Charles University since 1996. We report here on our experience with the second cycle comprising years III and IV of the six-year study program. Summary of work: This cycle is completely integrated and problem-based learning is the prevailing mode of instruction. Subjects (modules) taught in the second cycle are: Theoretical Foundations of Clinical Medicine (300 hours); Clinical Examination and Medical Ethics (300 hours); Clinical and Pathological Foundation of Medicine (19 courses, 1,200 hours); Compulsory Optional Courses (150 hours). All modules with the exception of optional courses end with an examination. Most complex is the examination from the module Basic Clinical Problems. The examination consists of a written test of 120 MCQs from all 19 courses, a separate examination from pharmacology, and the final oral examination. Here, the student is randomly assigned three clinical case reports (each from a different course) which he/she analyzes, suggests further examination program and basic treatment. We have assembled nearly 300 clinical cases from all medical specialties for this purpose. Major stress is laid on understanding pathophysiology, pathology, symptomatology, indication and interpretation of laboratory and imaging methods and syndromological differential diagnostics. Conclusion: Our experience with reformed curriculum is highly encouraging.

8Y P1
‘Mini Medical School’ - a new initiative in the UK to give public insight into the private world of medical training
Connie Wiskin*, David Fitzmaurice (University of Birmingham, Department of Primary Care, Learning Centre, Edgbaston, Birmingham B15 2TT, United Kingdom)
Background: The Birmingham ‘Mini Medical School’ is the first course of its kind to be initiated and run in the UK. Open to the general public, it provides an accessible overview of modern medicine and how it is taught for anyone with an interest in the subject. Two groups have ‘graduated’ (attended) with two more courses timetabled as part of what we hope will be an ongoing educational initiative. Summary of work: Over 10 weeks participants complete 10 sessions on different clinical themes, each comprising an expert-lecture and a practical workshop. By the end participants will have, eg, practised resuscitation, taken a BP seen how radiologists use x-rays/scans and played the part of a medical student in a consultation with a simulated patient. Clinical themes are anatomy, cardiology, respiratory function, cancer, communication, neurology, psychiatry, pharmacology, ethics and history of medicine.
The course has attracted wide participation, including individuals interested in exploring a medical career, healthcare staff, the public sector and an encouragingly diverse range of people motivated to find out more about the human body, the doctor role and health issues in today’s society.

**Conclusions:** Preliminary findings suggest that there is a demand for this type of model. It provides education and challenge in adult education, raises the profile of the Medical School within the community and encourages integration. As well as possible generalisability, the discussion will include limitations and benefits.

**8Y/P2**

Coping strategies to deal with difficulties in curricular reform in medical schools

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**Background:** There are many medical schools that strive for innovations in medical education. However it is not easy to reform school curricula. Therefore it is helpful to identify factors which affect curricular change in medical schools.

**Summary of work:** First, we established three categories in which curricula in medical schools could be divided: ‘traditional curriculum,’ ‘reformed curriculum,’ and ‘new medical school.’ We gathered information from appropriate sources, including the websites of the world’s best medical schools, and reviewed literature on curricular change in these schools.

**Summary of results:** The data search and the literature review resulted in a listing of the current state of curriculum reform, and revealed factors that contributed to successful curricular change. The reformed curriculum includes the integration of basic science and clinical instruction with community-based learning, with an emphasis on small group and seminar learning. Education in medical history, ethics, and even literature informs and expands the learning experience.

**Conclusions:** The factors of successful curricular change were organizational goals and structures, a cooperative atmosphere, faculty development and communication.

**Take-home messages:** Strategies to cope with difficulties in curricular change should be continually discussed and developed in order to ascertain which ones are best suited for medical schools.

**8Y/P3**

Academic staff’s action learning for curriculum improvement

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**Background:** In 2006, the Department of Family Medicine decided to respond to persistently poor student evaluation of the module presented to senior undergraduate students. Our first attempt at change (to the methodology of reciprocal peer teaching) in 2007 was met with even worse evaluation.

**Summary of work:** The group of stakeholders (academic staff, current and future students) spent four months reflecting on student evaluation, student assessment marks, staff evaluation and ideas for improvement. This group’s action learning resulted in our deciding on a type of action learning for the 2008 students, namely academic service-learning. Thus, the design built in awareness of learning style flexibility, reflection on action and community engagement with a view to improving service delivery.

**Conclusion:** Preliminary results show a vastly improved student evaluation, an improvement in the class average marks for the module, happier academic staff and satisfied service providers. An academic service-learning opportunity for senior medical students seems to contribute to their sense of responsibility which in turn drives their learning.

**Take-home message:** Action learning by academic staff enriches curriculum development, providing a better learning opportunity leading to more meaningful learning by and satisfaction of students.

**8Y/P4**

From "Hell" to "Heaven": How Family Medicine drives from the bottom to the top of the student satisfaction ratings for clinical rotations

Saipin Hathirat*, Autchara Angkanapitw (Department of Family Medicine, Ramathibodi Hospital, Mahidol University, Rama VI Road, Rajthewi, Bangkok 10400, Thailand)

**Background:** Before changing the medical curriculum in 2004, Family Medicine had been the least satisfactory clinical rotation among 14 disciplines in Ramathibodi Hospital in the students’ opinion. After the curriculum change to promote the integration among disciplines, Family Medicine found its ‘new shoes.’

**Summary of work:** After analysis of own strength as a primary care discipline, the family medicine rotation was designed to emphasize practicing in OPD and home care throughout a 3-year clinical rotation. Multiple teaching strategies were performed.

**Summary of results:** The students’ satisfaction has been rising dramatically from the bottom to the top three consecutively since 2004. There are increasing numbers of medical students asking for the Family Medicine elective. This dramatic change has been a surprise for the whole faculty.

**Conclusions:** Although being a new discipline, Family Medicine can make a difference in medical curricula.

**Take-home messages:** The Family Medicine approach is for both patient- and student-centred models to let them learn with joy.

**8Y/P5**

Instrument to evaluate change trends in medical training

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**Background:** Since the first World Conference on Medical Education in Edinburgh in 1988, orientation towards changes in medical training aiming to meet the contemporary health needs of the populations has been provided. International and national events, in Brazil, have been putting under discussion questions concerned with adjustment to training of undergraduates. These movements brought about the ratification of the National Curricular Policy (Diretrizes Curriculares Nacionais) for the undergraduate course of medicine.
Summary of work: This study focuses on the presentation of an instrument which, through the perception of the social doers of the school (teachers, students and techno-administrative officers), affords a view of the course as a whole and evaluates change tendencies in medical training. The instrument, based on seventeen vectors in five axes (labor world, pedagogic project, pedagogic approach, practice environment, and teachers' development), presents three situations in each question - one traditional, one innovating and another advanced for the transformations.

Conclusions: Applied in twelve Brazilian medical schools, this instrument made it possible to classify different change trends: traditional, innovating with traditional tendency, innovating with advanced tendency and advanced (Lampert, 2002). It proved to be fit for the evaluation and follow-up of the implementation of the changes in medical training.

8Y/P6
Hannibal: the new model curriculum in Human Medicine at Hannover Medical School (MHH)
Volker Paulmann*, Hermann Haller, Volkhard Fischer (Hannover Medical School (MHH), Carl-Neuerg-Str. 1, Hannover 30625, Germany)

Background: Since the academic year 2005/06 Hannover Medical School (MHH) offers a new model course for students in human medicine, called Hannibal. One of the key features is the focus on patients and their diseases in all parts of medical education, starting as soon as the first-year-courses. The second major change concerns the exam. The single nationwide standard exam after the first two academic years (the "Physikum") was substituted by a continuous study-related control. Now, each of the modularised subjects ends with an examination.

Summary of work: The presentation highlights the central elements and major challenges of Hannibal for students, teacher and the administration. Furthermore, the results of a survey-based evaluation are discussed. In addition, the academic performance of the first Hannibal-cohort is matched with the data of the nationwide exam results of the "Physikum".

Conclusions: The satisfaction with the content of the new model course and the students' test results indicate that Hannibal successfully combines a reformed patient-orientated medical education with the guidelines of the state license to practice medicine (Ärztliche Approbationsordnung-ÄAppO). But on the other hand, the students' workload has risen significantly due to the number of tests and administrative efforts need to be strengthened to cope with the new curriculum of the model course.

8Y/P7
System changes in curriculum at the Faculty of Medicine and Dentistry, Palacký University in Olomouc, Czech Republic
Jaroslava Králová, Marie Raková, Vladimír Mihál*, Milan Kolář (Palacky University in Olomouc, Wurmova 7, Olomouc 77180, Czech Republic)

Background: University graduates' position in the labour market is closely connected with the level of study programmes provided by their alma mater. Therefore, the Faculty of Medicine and Dentistry, Palacký University in Olomouc is among those trying to increase the quality of their students' training. To achieve this, the key objective is to develop both hard (professional) and soft (psychosocial) skills.

Summary of work: Ongoing system changes in the General Medicine master's study programme cover four areas to be detailed in the poster: (1) Synergistic integration of the curriculum (decreasing its fragmentation and striving for vertical and horizontal integration); (2) System of psychosocial prevention for students of General Medicine (developing soft skills and salutogenic approach of students to themselves, as a way of coping with the impact that global social changes have both on them as individuals and to the medical profession they are preparing for); (3) Practical training in multimedia (developing ICT literacies); (4) Modified professional practical training (developing practical skills by redistributed and extended professional training).

Conclusions: Certain steps have already been taken so far. New subjects, both obligatory and complementary, have been proposed – and, in many cases, already verified – which will be incorporated into the General Medicine master's study programme curriculum from 2008/2009.

8Y/P8
Understanding the value of an innovation: lessons from a pre-clinical elective program
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Background: Faculty and students seek opportunities to reach beyond the basics to explore cutting-edge and non-traditional topics. Innovative, preclinical mini-electives were introduced. A 3-course pilot rocketed to 24 offerings within 3 years, including: Medical Journalism, Concepts in Human Motion, Pandemic Preparedness, Essential Clinical Procedures, Literature and Medicine, Vascular Surgery, Business Aspects of Medicine, Pastoral Care. Understanding teacher and learner characteristics for such rapid and continuing acceptance, popularity, and growth of these mini-electives illuminated the value of curricular innovation. 4 data sources were analyzed to define the value of this highly successful program: course evaluations, student focus groups, course director debriefings, course descriptions.

Conclusions: Mini-electives provided an outlet for individual student exploration and growth without penalty. Faculty found the opportunity to profess the topics they are passionate about to be highly rewarding. Content themes stratified to: humanities; humanism; clinical subspecialties; non-clinical medical topics.

Take-home messages: Non-credit electives are a unique and dynamic vehicle to introduce flexibility and add value to existing curricula. They are low-cost, low-impact instructional methods that enable faculty and students to explore enriching topics that complement the core curriculum. Faculty are energized and mobilized by an institutional culture that encourages creativity and innovation in medical education.
8Y/P9

"They will help to make students become better doctors": an evaluation of student selected units in Year 1 at the University of Southampton

Kathleen Kendall*, Jenny Skidmore*, Marcus Parry*, Linda Turner* (University of Southampton, Division of Medical Education, School of Medicine, Boldrewood Campus, Southampton S016 7PX, United Kingdom)

Background: The University of Southampton's School of Medicine introduced a new curriculum in Years 1 & 2 of the BM 5 year programme (BM5). The Year 1 curriculum was implemented in October 2007 and the Year 2 curriculum will be implemented in October 2008. A key innovation across both years is the Student Selected Unit (SSU). One afternoon each week all students have an opportunity to explore, in groups, a health-related topic of their choice in the following areas: Year 1: Community Engagement, Semester 2: The Medical Humanities. Year 2: Semester 3: Critical Appraisal, Semester 4: Peer Teaching.

Summary of work: An evaluation of the first two SSUs was carried out using the following methods: focus groups with students and facilitators, questionnaires, and observations.

Conclusions: Students and facilitators highly valued and enjoyed the SSUs. The following aims for student learning were achieved: increased choice; opportunities to pursue areas of personal, academic and vocational interest; development of knowledge, skills and attitudes needed for independent learning, team working and reflective practice; increased empathy and communication with a wider range of people.

Take-home message: SSUs can successfully extend learning experiences in content and depth beyond the core curriculum but are time and resource intensive.

8Y/P10

The understanding of biological and psychological connection in nursing caring students: psychoanalytical approach

Miriam Abduch* (Praça Guido Cagnacci, 5 cep, São Paulo 05444-060, Brazil)

Background: Care is of utmost importance in health practices in nursing school. There is a special emphasis on the scientific technical aspects.

Summary of work: This is an exploratory and descriptive study that aimed to find out the meaning of care for nursing students. Data were collected through structured and semi-structured interview, the sample was composed of 30 nursing students from Science Medical School “Santa Casa” at São Paulo-Brazil. Psychoanalytic boarding was used to analyse the data.

Summary of results: The results showed the following aspects: Diversity of meaning, absence of otherness, difficult to understand the interpersonal interactions.

Conclusions: We concluded it was important to look more carefully at the psychological dimension of the carer and to create psychological support services and discuss the necessary academic strategies to help tired students.

8Y/P11

Regional Collaboration in Nursing Education at the School of Nursing, University of the Western Cape, South Africa

F Daniels* (University of Western Cape, School of Nursing, Cape Town, South Africa)

Background: South African universities and technikons bear remnants of apartheid. Institutions within a 50 kilometre radius of each other functioned autonomously and in a highly competitive way, offering similar and sometimes the same programmes. In 2001, the National Plan for Higher Education outlined strategies for restructuring the system to address such problems. Rationalisation of programmes offered in the region, collaboration and mergers of institutions were announced in December 2002, with specific implications for nurse training in the Western Cape. The Minister of Education announced that with effect from 2005, one university, the University of the Western Cape (UWC) and one technikon would be the only enrolling institutions for undergraduate nursing education.

Collaboration: The three universities in the Western Cape embarked in a collaborative way to establish a common teaching platform in the region for the 4 year undergraduate nursing degree. This new nursing education model should be cost-effective, meet the needs of nurses and embrace (embody) best practice for nurses with a curriculum that is flexible and reflects modern teaching and learning principles. The School of Nursing, UWC is in the 4th year of implementation of the common teaching platform. I wish to share our experience of these collaborative efforts in terms of implementation, benefits and challenges, and to elicit discussion around ways to improve and strengthen such collaboration in the training of nurses.

8Y/P12

The present conditions and a problem of the field experience in the Japanese health/Medical profession (a nurse a physical therapist/an occupational therapist)

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Summary of work: A review was performed for the past ten years, looking for practical studies to clarify the present conditions and problems with field experience in the Japanese health/medical profession. A medical central magazine database was searched for relevant articles. The keywords used were nursing, physiotherapy, occupational therapy, education and clinical training.

Summary of results: As a result of the search, 1,066 studies were found consisting of 251 original papers, 318 commentaries and 497 minutes, according to the classification of the medical central magazine.

Conclusions: The Japanese healthcare/medical professions were in the middle of building program content for field experience, and it was suggested that the training of leaders and teachers was considered to be a problem.
8Y/P13

The ReFoRmeD Curriculum and its delivery: beyond the “heartaches”!
K H Mujtaba Quadri and the “Curricular reformers” (Shifa College of Medicine, Sector H-8/4, Islamabad 051, Pakistan)

In August 2007 in Trondheim, Norway, we sought ‘Divine’ intervention for our stuttering curricular reFoRmMs over the past three plus years, such as the state of the reform process vis-a-vis the new modular integrated curriculum at Shifa College of Medicine due for implementation in December 2007. The skeptics, the pro-status quo group, the resistors all seemed to be vindicated, but for the die-hard curricular reformers!

After 93 curriculum meetings to date over the past year, where those knowing looks said “we told you so”, where the lone few voices in the wilderness were often drowned, the “dream”(dreaming) team seemed to be finally getting that Divine help! 46 modules with objectives, themes and cases ‘spiralling’ horizontally and vertically over five years and 44 coordinators presenting delivery schedules fortnightly at the faculty forum meetings, modular delivery in full-swing simultaneously across all five years; assessment driving student learning and evaluation reshaping future delivery and the heartaches are slowly fading away! A bad nightmare steadily gives way to the excitement and inevitable faculty ownership of a new dawn! The curriculum stands REFORMED!

8Z Teaching and learning about research

8Z/P1

Do students feel equipped with scientific research skills and prepared for clinical training after undertaking a B.Sc (Hons) as a core part of a medical curriculum?

Simon Guild* (Bute Medical School, University of St Andrews, Bute Medical Building, Queens Gardens, St Andrews KY16 9TS, United Kingdom)

Background: Students at the Bute Medical School now undertake a new curriculum designed to award them a B.Sc Honours before continuing with their clinical training. The challenge of introducing this new curriculum was to meet the requirements of a scientific Honours degree while retaining the needs of a medical education programme.

Summary of work: Graduates have now emerged from this degree to continue their clinical training and these students were surveyed in terms of their opinions upon how well prepared they felt for clinical training and to what degree they felt they had acquired scientific and research skills.

Conclusions: The vast majority of students felt that they were competent in: Searching for scientific papers; Reading scientific papers; Interpreting experimental data; Understanding research methodology; Writing scientifically; Using correct referencing techniques; Delivering oral presentations; Writing reflectively; Communicating with patients. They felt well prepared for their clinical training and had their interest in medicine stimulated by undertaking a B.Sc. Honors.

Take-home message: It is possible to retain the central importance of the basic medical sciences and to provide graduates with research skills without compromising clinical training and relevance.

8Z/P2

Is it worth supporting PhD Programs in Medical Reform Curricula?

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Background: Medical Reform Curricula like at the University Witten/Herdecke (UWH) are focusing predominantly on problem-based-learning and bed-side-teaching. Both are time consuming and may limit research activities, which are dominated within German medical students by their doctoral thesis (PhD).

Method: Within the ‘UWH Alumni Database’ we assessed a) the rate of PhDs b) the association of demographics, individual curricular choices and evaluation, c) predictors of further career development.

Results: 49% (n=128) of the UWH Alumni, graduated from 1989-2005, concluded a PhD compared to 63% at traditional universities. Alumni with a PhD more often are male (59% vs. 43%, p=0.009), younger at graduation (28.9±1.9 vs. 29.5±2.5, p=0.02) and spent part of their study abroad (88% vs. 77%, p=0.02). Better technical equipment (p=0.008) and improvement of the library (p=0.04) were seen as key requirements whereas taught research competence was not evaluated differently. A PhD predicted higher publication rates (OR=2.4, p=0.003) and leading positions (OR=2.0, p=0.02).

Conclusion: Lower PhD rates were observed within the reform university predominant in female and older students. Further research is needed to a) better understand the potential association to problem-based-learning, b) identify factors which limit individual choices for a PhD, c) provide curricular and individual support to improve PhD rates.

8Z/P3

What should we teach undergraduate medical students about probability and statistics?

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Background: We are conducting a pilot project which aims to inform developments in teaching of probability and statistics for clinical practice.

Summary of work: We developed a questionnaire to explore doctors’ views about statistics and probability in their training and work. We gathered information about what teaching doctors would recommend for current undergraduate medical students in these areas via an open-ended question. The questionnaire was emailed to medical doctors involved with teaching on the UEA MB/BS in April 2007.

Summary of results: The questionnaire was completed by 130 doctors. 114 provided suggestions for teaching under the following themes: A) Content of teaching (basic grounding / understanding, and specific methods). B) Purpose or goal of teaching (clinical practice, and / or research). C) Organisation of teaching. Further details of results with supporting quotes from participants will be presented.
Conclusions: This sample of practicing medical doctors felt that the teaching of probability and statistics should provide a good basis that can be built upon, and should be more applied to clinical work and to interpreting or conducting research.

Take-home messages: The teaching of probability and statistics should be applicable for the various roles a doctor will have to fulfil, and relevance for future practice should be emphasised at this time.

8Z/P4
Effective integration of statistics early in the medical curriculum
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Background: Medical students show problems in learning statistics. The literature is sparse in effective learning experiences in biostatistics.

Summary of work: Freshmen take an integrated 4 week course focused on statistical methods, the analysis of sample variability and measurement error. A "how to use" perspective is adopted to teach concepts, methods, spreadsheets and to gain practice with statistical computer packages. Integration hotspots, in which statistics solves questions arising from large volumes of metric data, systematically gathered from student anthropometric data and laboratory results.

Summary of results: The communication will present three years of experience with the course, the assessment and student achievements. Interesting improvements were found on the use and comprehension of statistics (74-95% positive self-evaluations). Student achievements in statistics strongly determine the final mark in the integrated course (final mark mean ± SD, correlation coefficient: year 1 – 85.7±9.7, 0.88; year 2 – 78.0±10.1, 0.83; year 3 – 70.8±7.8, 0.90).

Conclusions: Contexts of medical or biological problems make students more comfortable with statistics and increase the likeliness of improving student statistical IT skills and reasoning.

Take-home messages: Integration of statistics early in the medical curricula can fight student discomfort with the discipline.

8Z/P5
Innovations in teaching medical statistics
Celia Brown* (University of Birmingham, Public Health and Epidemiology, Edgbaston, Birmingham B15 2TT, United Kingdom)

A sound understanding of the principles of statistics is essential to underpin the delivery and improvement of healthcare (Altman and Bland, 1991). Teaching medical statistics has invariably fallen to statistical specialists or epidemiologists, with varying levels of integration into the curriculum.

The Statistics Teaching Team at The University of Birmingham are changing the way in which Medical Statistics is being taught on the Bachelor of Medical Science (BMedSci) course in four key ways:
- Understanding personal ‘learning style’ preferences (measured using psychometric testing) and varying the pedagogic approach to match.
- Complete revision of examples used to demonstrate statistical concepts and methods. Students’ own personal information (consented), attitudinal data (captured via questionnaire) and laboratory experiment data are used to illustrate basic statistical concepts and methods; Lectures include student-led ‘live’ experiments (using dice and votes) to demonstrate probability, expected values and sample means; Formative self-assessment and eLearning support.

This approach will be thoroughly evaluated using pre- and post-course surveys to determine the impact and refine the techniques.


8Z/P6
Undergraduate Medical Students Research Skills Enhancement - Health Research Project
D Vackova, J M Johnston*, S M McGhee (School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Si/F William MW Mong Block, Faculty of Medicine Building, 21 Sassoon Road, Hong Kong)

Background: Evidence-based medicine has been recognized as a core competency for the new generation of medical doctors. Under the coordination of the School of Public Health, all Year 3 MBBS students from Li Ka Shing Faculty of Medicine, The University of Hong Kong undertake a year long health research project, in which they acquire research skills, enhance peer to peer skills, consolidate epidemiological and statistical learning and apply problem-based and evidence-based teaching.

Summary of work: Each group of students (n=10) develops a research protocol on a locally relevant health or health care topic; obtains ethics approval; recruits subjects; collects data; conducts data analysis and presents their findings in written and oral form. Student groups work independently with backup from project group tutors, statistical advisors as well as online WebCT support.

Conclusions: Students report high levels of satisfaction with the learning process. They produce high quality research outputs with one project per year published in international peer reviewed journals.

Take-home messages: Over the past 15 years, the health research project as an integrated part of the undergraduate curriculum has successfully engaged young medical students in health research enhancing their critical thinking skills and research knowledge.

8Z/P7
Thinking Writing
Milka Marinova* (Barts and the London School of Medicine and Dentistry, Turner Street, London E1 2AD, United Kingdom)

The standard of BSc intercalating medical students' written work at Queen Mary's has been a subject of concern to course directors for some time. This research concerns a series of in-course writing tutorials delivered by subject tutors in conjunction with writing specialists.

An evaluation of the effects of the learning experience on students' writing performance using quantitative (through a pre and post-test writing task) and qualitative methods was performed. This abstract is for the qualitative research only. Student's perceptions of the "Thinking Writing" course were elicited using semi-structured interviews and analysed using the framework method. Emergent themes from the data were collected until data saturation was reached.

Positive outcomes, highlighting an improvement in knowledge of the intricacies of punctuation and referencing, as well as a marked increase of confidence in structuring and the scientific language style used in writing of literature reviews were just some themes. Students feel the course has prepared them particularly well for writing their research projects.

The experience of the "Thinking and Writing course" has helped to improve BSc student's writing skills and scientific writing style awareness. Similar courses should be implemented in Medical Schools to improve student's writing skills for research purposes.
Science in action: how to introduce students to scientific working

Stefan Reinsch, Jörg Pelz, Agata Mossakowska* (AG InterPOL and Prodekanat für Lehre, Charité Universitätsmedizin Berlin, Charitéplatz 1, Berlin 10117, Germany)

Dentistry is often regarded as a basically practical discipline. The Charité introduced 2 modules 'scientific working' in the curriculum. Specific scientific aspects of dentistry are covered in 2nd course in the 4th year. We designed and analysed the 1st course in the 2nd year, which covers general principles of scientific working.

This course consists of 12 session a 180 min in PBL-format. The sessions were designed as long-cases. A dentistry student was followed during his studies till his first years as a researcher. Topics included the scientific basis of dentistry, problems of statistics and study design and conducting a small study by the participants. The course was analysed using participant observation from Ethnomethodology and the Sociology of Translation from Actor-Network-Theory. Scientific training can be understood as an attempt to present medical routine as a series of problems which can be solved more efficiently when the student 'buys in' to scientific methods. During science classes, a learning-network is created, wherein scientific working constitutes an 'obligatory passage point' to become a skilled doctor.

PBL allows students the space to develop ideas and learn from mistakes. Science courses in a PBL-design are very similar to real-life-science, and thus a highly efficient course design.

Favorable outcome of "quantitative methods" teaching in community medicine

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Background: Thai medical students who matriculated as of 2003 are required to pass the medical licensing examinations organized by the Center for Evaluating and Certifying Medical Competency of the Thai Medical Council. There are 3 steps of the exam, the first of which is called comprehensive basic medical science which includes "Quantitative Methods".

Summary of work: Faculties from the Department of Community Medicine met to determine the extent of "Quantitative Methods" to be taught and explore new strategies for instruction and evaluation for the 3rd year medical students. Five three-hour sessions were allocated for lectures and tutorials. Each teaching staff was responsible for a group of 24-25 students. The first two medical student cohorts took their first-attempt in the licensing examinations in 2006 & 2007.

Results: Ramathibodi students (N=239) outscored medical students nationwide (N=3338) in "Quantitative methods" for both consecutive years. The mean + SD in 2006 and 2007 were 71.5 + 14.9 & 67.3 + 14.6 respectively for Ramathibodi and 53.9 + 19.4 & 55.8 + 20.2 for students nationwide.

Conclusions: The strategy of recruiting only MD's with MPH-equivalent degrees as teaching staff and small class size tutorial yielded favorable outcome in "Quantitative Methods" subject in the national licensing examinations.

Access to scientific medical information in the Czech Republic

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Background: The medical scientific information has its origin in the process of scientific work, medical care and education. Acquisition, processing, storage and access to professional medical information in the Czech Republic are provided by Czech medical libraries.

Summary of work: The poster informs about public services of important library portals MEDVIK and Med Port operated by the National Medical Library and the Institute for Postgraduate Medical Education. The portals enable access, in the regime 365/7/24, to free and licensed electronic information resources. The necessity to increase and deepen the information literacy is documented by the results of Med Port users’ research. Publishing activities as output of science and education represent the integral part of this work is not seen or read by the majority of the student body. The fundamental purpose of the RCSstudent medical journal is to encourage and share student work through publication, while teaching students about manuscript preparation, editing and the peer-review process.

The creation of a student-run medical journal to encourage research, writing and publication by undergraduate medical students


Background: Medical students engage in research and scientific writing either independently or as part of the curriculum. Yet often this work is not seen or read by the majority of the student body. The fundamental purpose of the RCSstudent medical journal is to encourage and share student work through publication, while teaching students about manuscript preparation, editing and the peer-review process.

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Research and publication by medical students has been shown to produce desirable junior doctor/residency candidates, lead to increased research productivity after graduation, the pursuit of academic careers, and increased personal satisfaction. Promotion of student authorship clearly serves a multifocal purpose. The health organization should evaluate medical personnel’s research capabilities and factors affected, then provide programs and resources to match their needs.

**Conclusions:** A student-run medical journal is an ideal way to encourage and teach students about preparing a manuscript for publication. Calls for submissions to the second edition have now been made, and we look forward to comparing the quantity and quality of papers between editions.

**8Z/P13**

Research Teaching Linkages: enhancing graduate attributes

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**Background:** Research Teaching linkages (RTL) are the Enhancement theme for 2008 from the Quality Assurance Agency for Higher Education (QAA) in Scotland. Here we describe the QAA sponsored project on RTLs for Medicine, Dentistry and Veterinary medicine. The project aims to identify opportunities for research teaching linkages within their curricula and provide examples of good practice. The wider aim was to permit an understanding of the attributes necessary to undertake research and how best to support/promote the achievement of such attributes in medical curricula.

**Summary of work:** 24 structured interviews were carried out with faculty members from all 3 disciplines. Additional data and case studies were collected from a dedicated RTL symposium.

**Summary of results:** Results show that many of the attributes required for research overlapped with those required for professional practice. Therefore it was essential that a basic level of research attributes was acquired by all graduates. Opportunities to acquire deeper level research attributes were found to be available in specific parts of the curriculum such as special study modules. The main recommendation of the project is that all students should have the opportunity to take part in a research project as part of their curriculum.

**8Z/P14**

Undertaking Systematic Reviews for Masters’ Dissertations: in the real world professional arena, when is ‘good’ not ‘good enough’

_Gail Louw*, Carmel Keller, Jim Price, Deborah Saltman (Institute of Postgraduate Medicine, Brighton and Sussex Medical School, Mayfield House, Falmer, East Sussex BN1 9PH, United Kingdom)_

**Background:** Systematic reviews are normally undertaken rigorously, over lengthy timescales and at high cost. They have high status at the top of the ‘hierarchy of evidence’.

**Summary of work:** Students undertaking masters’ education often choose to undertake a systematic review for their dissertation. There are several reasons for this: the approach may genuinely address a suitable question, the students may face a lack of available time/resources to undertake primary research, and systematic reviews do not require ethical committee acceptance and are sometimes seen as a convenient alternative to pre-empt ethics committee delays.

**Summary of results:** The session will consider whether this professional activity, and the credibility which it attracts, is suitable for students to undertake. We will identify that boundary where systematic reviews go from unacceptable to good enough and to excellent and consider how big and fuzzy the boundary is.

**Conclusions:** A large proportion of students who have undertaken systematic reviews for their dissertations have succeeded and achieved distinctions. The focus of the systematic review must be narrow, it must be rigorous and no corners can be cut.

**Take-home message:** It is feasible for high quality, important and widely relevant work to be undertaken for masters’ dissertations.

**8Z/P15**

Barriers to conduct medical research in Thailand: a case study to break the wall

_Patcharee Yimrattanabowon* (Department of Anesthesia, Buriram Hospital, Nasanee Road, Muang District, Buriram 31000, Thailand)_

**Background:** Nowadays evidence-based practice has become the gold standard for medical practice. Therefore medical personnel of Buriram Hospital, the teaching hospital in Northeastern Thailand have also been paying attention to research.

**Summary of work:** To evaluate the research capability within medical personnel, a cross-sectional survey by a self-completed questionnaire was done. The questionnaire consists of five items regarding research capability, i.e. knowledge, attitude, motivation, resource, and skill in 5-point Likert scale type. A sample consisted of 582 permanent staff members. The collected data were analyzed with one-way ANOVA and demonstrated in percentage and mean.

**Summary of results:** The mean Likert scores in attitude, motivation, resource and skill were 3.0 ± 0.9, 3.2 ± 1.0, 2.7 ± 1.0 and 2.2 ± 1.0, respectively. Interestingly, the statistical significances of mean scores in research capabilities were found between careers, education and research completion levels.

**Conclusion:** We detected a small number of staff had research knowledge. Their mean Likert scales were low in skills, resources, attitude and motivation, all of which were possible barriers against conduct of research.

**Take-home messages:** The health organization should evaluate medical personnel is research capabilities and factors affected, then provide programs and resources to match their needs.
8AA/P16
The challenges of research promotion in a newly established University in Saudi Arabia
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Background: The National Guard health Affairs initiated its health care system 25 years ago to provide medical care to its employees and their dependants. However, five years ago several colleges were established, creating the nucleus for KSAU-HS and so newly appointed faculty are expected to conduct research. This major political change in the institution needs to be followed by a cultural and technical change to meet the objectives of the university.

Aim: To identify the challenges of creating a cultural and technical change in an institution where research would be given a priority among the faculty.

Summary of work: A Mintzberg analysis was applied to the organization to analyze the structure and driving forces of the organization. Then a detailed Tichy analysis was performed to identify the current status of conducting research among the faculty and to identify the barriers that are possibly preventing research productivity.

Conclusions: The National Guard hospital has gradually transformed into a university hospital with currently poor recognition and infrastructure to conduct research, and physicians with poor skills to conduct research in an environment where research has not been the norm.

Take-home messages: 1. There are challenges in promoting research among the University faculty at KSAU-HS. 2. Faculty development programs for improving research skills are needed. 3. The institution needs to invest in improving technical support available to its faculty. 4. Leadership support is critical in promoting research.

8AA/P2
Early patient approach with feedback improves clinical skill of medical students
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Background: To improve clinical skill of medical students, early patient approach with feedback has been implemented. The outcome evaluation focusing on history taking and physical examination skill was done to compare with the control group.

Summary of work: The early clinical year medical students were divided into 2 groups. Group A (n = 56) was control group. In group B (n = 68), each pair of students was assigned to approach a patient with immediate feedback by a facilitator. The same categories and checklists scores of OSCE were collected 6 months later. All scores were calculated to be 100 percent.

Results: The mean history taking score, physical examination score and overall score of group A compared to group B are 77.60±6.06 versus 80.50 ± 5.97 (p = 0.009), 73.90±7.30 versus 76.86 ± 6.98(p = 0.023) and 75.49±5.46 versus 78.42±5.64 (p = 0.004) respectively.

Conclusion: Mean OSCE score of group B is significantly higher than group A in all types.

Take-home message: By evidence base, history taking and physical examination skills of medical students are significantly improved by early patient approach with feedback.

8AA/P3
The predictive validity of student encounter log data
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Aim: Medical educators increasingly emphasize documenting students' clinical experiences via logs. However, their usefulness to predict students' learning outcomes is unclear. Revised electronic logs were implemented in the 8-week ambulatory internal medicine (IM)-pediatrics (PED) clerkship in 10/07. We queried whether log information was related to clerkship outcomes.

Summary of work: Students (N=43) entered data on each “meaningful patient encounter” during their 4 weeks each of IM and PED. Data included patient demographics, pertinent medical diagnosis, and nature of teaching and learning interactions. Students are evaluated via a multiple choice exam (MCQ), an OSCE and descriptive clinical evaluations (EVAL). Data were analyzed with Pearson's r and t-tests.

Summary of results: The mean of diagnoses entered per student was 135 (SD 88). Correlations between diagnosis count and outcomes were: OSCE r = .29, MCQ r = .01, IM-EVAL 30, PED-EVAL .20. The mean number of diagnoses for students receiving honors/high pass in their IM-EVAL was 164 versus 94 for students receiving pass or low pass (p = .04).

Take-home message: To identify the challenges of creating a cultural and technical change in an institution where research would be given a priority among the faculty.
Conclusion/take-home messages: Students entering more diagnoses performed better on the OSCE and IM-EVAL, but not the MCQ. These findings indicate that the number of diagnoses which students enter into their logs reflects a higher clinical involvement, translating to better clinical clerkship outcomes.

8AA/P4
Development of a new curriculum for physical examination and history taking: OSCE results after participating in the “old” vs. the “new” course
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Background: Prior to our study our students completed an unstructured course in physical examination and history taking (“UklIf”) in their third medical year.
Summary of work: A new structured curriculum for the course was developed. The course consists of three parts: 1. History taking and practice with standardized patients (2.5 hrs) 2. Teaching clearly defined parts of physical examination and practice with one another (3x2.5 hrs) 3. Practice with real patients (4x2.5 hrs). 60 students were randomised into group A (new course with trained teachers; n=24) and group B (traditional course; n=36). Group A was further subdivided into group A1 without (n=10) and group A2 with an additional OSCE workshop prior to an OSCE examination (n=14). Group A performed better in the OSCE and reached a median of 65 % and group B a median of 54.05 % of possible maximum points (p<0.001). In the subgroup analysis there was no significant difference between group A1 and group A2.
Conclusions: This study confirmed that a structured course with trained teachers increases the students' performance in an OSCE. An additional OSCE workshop did not improve the results further.
Take-home messages: Our faculty has been convinced by this study to introduce this new course for all 350 students per year.

8AA/P5
Lived clinical learning experiences of medical students: a qualitative approach
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Background: Medicine is an action based principle. Clinical learning has an important role in development of medical skills. There are many studies about clinical setting and its problems, but clinical learning experiences of medical students haven't been studied as a whole. Therefore, we aimed to assess, describe and interpret medical students' perception about clinical learning.
Summary of work: Phenomenological analysis was used to conduct this study. One focus group was convened with 10 students for data gathering. Contemporaneous notes were taken and the discussion was tape-recorded and later transcribed verbatim. Transcriptions were analyzed by using the Van Manen procedures.
Conclusions: Data from the focus group developed into 11 themes: nature of clinical learning, not belonging to medical team, curriculum anxiety, communication between learner and teacher, different context and resource of clinical learning, putting potential abilities into action, discovery of self in clinical setting, conflict between work and learning, dependency and disorientation of clinical learning future. Findings showed that clinical learning move students toward professionalism in medicine.
Take-home messages: Results show that clinical learning is the basic element of medical education, and includes many parts and dimensions. By taking account and organizing these factors, medical faculties can promote quality assurance in medical education.

8AA/P6
Paediatric nurses as undergraduate medical educators: an underused resource?
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Background: Medical Undergraduates in Paediatrics have to adjust their expectations from acquiring procedural skills within the adult sphere to acquiring less tangible skills such as effective communication with children and their families. There is little in the recent literature about how experienced Paediatric nurses can help enhance such skills. The aim of our study was to examine students' perceptions of Nurse Educator teaching within Bradford Teaching Hospitals.
Summary of work: 63 of 70 students in the academic year 2006-07 completed the DREEM (Dundee Ready Educational Environment Measure) inventory, onto which 7 questions were added pertaining to the Nurse Educator teaching. Focus group discussions were also held which provided additional useful information.
Conclusions: The mean overall DREEM score for the Paediatric placement was 155.5 out of 200, giving a mean score for each question of 3.11 out of 5 and the mean score for Nurse Educator questions was 3.08 out of 5. During the focus group discussion students repeatedly cited the Nurse Educator teaching as one of the best aspects of the Paediatric placement.
Take-home messages: Experienced Paediatric nurses have a valuable role to play in educating Medical Undergraduates and their teaching is well received by students.

8AA/P7
Is a supervised on-call session a valuable and effective learning tool for final year medical students?
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Background: Final year medical students at the University of Manchester are not required to complete an on-call as part of their training. However, the first on-call as a junior doctor can be a daunting experience.
Summary of work: This study aimed to investigated whether carrying out a supervised on-call improved confidence and knowledge levels in final year medical students, and teaching confidence in Foundation Year 1 (FY1) doctors. Fifteen final year students at the University Hospital of South Manchester were recruited and paired with 15 FY1s (medical and surgical) working in the same hospital. Students then carried the on-call bleep during their allocated on-call, prioritising jobs and constructing patient management plans under the constant supervision of the FY1. Each student and doctor completed a structured questionnaire before and after carrying out the on-call.
Conclusions: Preliminary analysis of the questionnaires has shown that 75% of students felt more confident following the intervention, and no student experienced a decrease in confidence. Student participants all thought that the on-call was a good idea, and many felt that it should become a compulsory part of the final year.

**Take-home message:** A supervised on-call has the potential to be a very valuable learning experience both for final year medical students and FY1s.

### 8AA/P8

**Patient Care at a Clinical Education Ward for Integrative Medicine (CEWIM) - Results of a multiperspective evaluation**

_C Scheffer*, D Tauschel, F Edelhäuser, (Integrated Studies of Anthroposophic Medicine, University of Witten/Herdecke, Alfred-Herrhausen-Str. 50, Witten 58452, Germany)_

**Background:** Since clinical education affects not only students but also patients, the quality of patient care in hospitals with high student involvement has to be examined.

**Summary of work:** A Clinical Education Ward (CEWIM) was developed for medical students in their final year to foster active and patient centered learning. Being part of Integrated Studies of Anthroposophic Medicine (ISAM) – an optional offer for medical students at Witten/Herdecke University (Germany) – learning goals include those of conventional and of complementary medicine. During the pilot project four students were taking care of patients as ‘physicians under supervision’ for 16 weeks. Evaluation focusing on quality of patient care was done by a survey of patients treated at the CEWIM (n=66), a survey of staff members (n=28) and qualitative interviews of students (n=4).

**Conclusion:** Results indicate that patient care might be affected in a positive way due to high motivation of students and more time for communication with patients and their relatives.

**Take-home message:** It seems possible to integrate students in clinical care with advantages for patients.

### 8AA/P9

**Optimizing clinical rotations in integrated studies of anthroposophic medicine - effects of clinical rotation preparation talks**

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**Background:** With a six-years-curriculum Integrated Studies of Anthroposophic Medicine have been inserted into the curriculum at Witten/Herdecke University (Germany), offering an opportunity to learn Integrative Medicine by complementing conventional with Anthroposophic Medicine. From 2nd to 5th year integrated clinical rotations take place.

**Summary of work:** Clinical Rotation Preparation Talks (PrepTalks) were established. They highlight on: Former experiences in clinical rotations; Reflection of students’ goals concerning knowledge, skills, attitudes, practice and self-development with the results being transmitted to clinical teachers; Key tasks; Surrounding conditions.

**Summary of results:** PrepTalks require few resources. Evaluation shows that PrepTalks: allow students to identify their problems and concerns and figure ways in dealing with them; create awareness and clarity of students’ and clinical teachers’ perspectives; provide a better start-off in clinical rotations including those without PrepTalks.

**Conclusion:** PrepTalks seem to be effective and suitable in preparing students for clinical rotations. Furthermore they seem to promote student’s autonomy.

**Take-home messages:** PrepTalks: are a helpful means of introducing clinical rotations; are student-centred: give students the opportunity of active shaping and personal development; fill the gap between written curriculum and reality of clinical rotations.

### 8AA/P10

**Experiential processing of clinical experiences using Illustrated Story Cards**

_Hanna Ziedenberg, Keren Levitin* (Ben Gurion University, Faculty of Health Sciences, POB 653, Beer Sheva 84105, Israel)_

**Background:** In the process of nursing education, students are exposed to patients in various stages of the life span. At times this requires them to cope with the patients, with themselves and with very intense emotions. One of the means to assist students in coping with experiences related to their clinical work is an educational workshop using Illustrated Story Cards (ISC) based on metaphors..

**Summary of work:** In the nursing education program, we use ISC throughout the clinical rounds and to confront issues of death and dying. Through metaphors the cards enable the students to connect between their inner experience and the reality of the clinical setting.

**Results:** By using metaphors the students process their emotional experience, learn from it and are empowered by it. Through the cards the students’ apprehensions and fears regarding the clinical experience are revealed and it allows both student and teacher an opportunity to address them. When the students cope with death and dying, the cards allow emotional processing of the experience; the students express themselves, and accept both their feeling and the situation they have encountered.

**Take-home message:** Working with ISC allows emotional processing of clinical experience in a unique, different way.

### 8AA/P11

**Simple one-off education of doctors and nurses improves prescription of venous thromboembolism prophylaxis**

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**Background:** Venous thromboembolism (deep vein thrombosis and pulmonary embolism) is a crucial cause of hospital death, contributing to 10% and causing 1%. Despite this, prescription of mechanical and pharmacological prophylaxis is often inadequate.

**Summary of rates:** Rates of prescription and provision of prescribed prophylaxis were established in a total of 158 surgical patients before and after educational sessions at a UK District General Hospital. Single ten minute talks were delivered to junior doctors and nurses.

**Results:** Chi-square analysis showed that education significantly increased prescription of mechanical prophylaxis from 58.8% to 76.6% (p=0.0298). Non-significant increases were seen in provision of mechanical prophylaxis (55.0% to 67.3%; p=0.9878) and prescription of pharmacological prophylaxis (85.9% to 90.9%; p=0.3751). Provision of the latter was unchanged.
Conclusions: Many surgical patients are placed at risk by not being prescribed venous thromboembolism prophylaxis. Short and simple one-off educational sessions for doctors and nurses improve prescription rates of mechanical prophylaxis. Whilst significant increases in prescription of pharmacological prophylaxis and provision in general were not seen, this may be due to the sample size.

Take-home messages: Single, short educational sessions for doctors and nurses are a simple and effective method of improving prescription of mechanical prophylaxis for venous thromboembolism.

8AA/P12
Educational effect of scenario writing in OSCE for self-learning
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Background: Before the medical interview at the orthodontics practice, students wrote scenarios, which included communication skill, malocclusion, examination and treatment. Then we examined whether writing the scenario was useful for the students to understand the orthodontics and communication skill.

Summary of work: Prior to the medical interview at the orthodontics practice, students studied communication skill, finding and cause of the malocclusion, examination and treatment. Then students wrote a scenario for self-learning. After the scenario writing, they did role playing with each other. Then we sent out the questionnaires to examine the effects of the scenario writing.

Conclusion: The scenario writing turned out to be difficult for 76% of respondents, it, however was effective for 97%. Writing future scenarios and role playing were both good things for 94%. During the process of writing scenarios, students reconsider the knowledge, which they learned by lectures and practices, to find out the suitable explanations for the patients.

Take-home message: Scenario writing is useful for the consolidation of students’ knowledge, improvement of problem-solving and communication skills.

8AA/P13
VITA: 3D visualization system to assist teaching of mathematical concepts in medical decision-making
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Background: Diagnostic tests are characterized by quantitative performance measures such as sensitivity, specificity, prevalence, and Bayesian post-test predictive values. These interact in complex, multidimensional, non-linear ways that may not be understood easily by medical and nursing students, leading to sub-optimal medical decision making.

Summary of work: VITA, a software system developed in MATLAB provides interactive 3D/4D visualizations of relationships between these measures. VITA’s capabilities include, among others, real-time rotation, color-gradients, multiple plot types including smoothed and faceted plots, zoom-in, zoom-out, and 4-D views.

Summary of results: Sensitivity and “what-if” analyses can be performed to understand the effects of variations in test characteristics on predictive values. Experimental data including biochemical assays, sensitivities, and specificities, can be read from computer files to produce 3-D plots of Bayesian predictive values vs. cutoffs and prevalence.

Conclusions: VITA can enhance medical/nursing students’ understanding of difficult mathematical concepts fundamental to diagnosis. Students can gain insights into complex multi-dimensional non-linear relationships interactively by hands-on real-time interaction. Digital courseware can be developed based on VITA.

Take-home message: Decision-making is a complex yet crucial component of medical education. Visualizations systems like VITA have great potential to help medical/nursing students understand this important subject.

8AA/P14
“They gave me some painkillers”: what pronominal talk reveals about student-doctor-patient relationships in bedside teaching encounters
Charlotte E Rees*, Lynn V Knight (Office of Postgraduate Medical Education, Faculty of Medicine, The University of Sydney, Sydney NSW 2039, Australia)

Background: Individuals’ pronominal talk indicates how they conceptualise themselves and their relationships with others. Although studies have analysed healthcare professionals’ pronoun use with patients, none have explored participants’ pronominal talk within the ‘learning triad’ of the bedside teaching encounter (BTE). This paper answers the question: What are the functions of pronouns in the talk of physician tutors, medical students and patients during BTEs?

Summary of work: We listened to the audios of 6 BTEs (112 minutes), read the transcripts and analysed the use and function of pronouns (I, we, you and they), pronoun shifts (e.g. I-we) and collocates (e.g. think) in the talk of 5 tutors, 10 students and 6 patients.

Conclusions: BTE participants’ pronominal talk revealed their beliefs about their positions relative to others. For example, tutors’ and students’ use of I and you to patients not only signalled their superordinate status, but their use of they emphasised the social distance between the medical and lay communities of practice.

Take-home messages: Tutors and students are encouraged to reflect critically on their pronominal talk, both amongst themselves and with patients, and employ more inclusive pronouns (e.g. we, us) where appropriate, in order to operationalise partnership models of education and patient care.

8AA/P15
Teaching fundamental clinical skills and personalizing medical education through a longitudinal bedside teaching and mentoring program
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Background: As U.S. medical schools expand to accommodate workforce needs, personalizing medical school and individualizing clinical-skills teaching become increasingly difficult. The University of Washington School of Medicine “Colleges” program was designed to personalize education and teach fundamental clinical skills through longitudinal mentoring and bedside teaching. Preclinical students in small groups work with a faculty mentor at the bedside weekly during second year and maintain contact with their mentor throughout medical school.

Summary of work: Qualitative analyses using grounded theory were performed of 179 interviews with 2nd and 4th year medical students from 2003 to 2007 to assess students’ perceptions of the Colleges program.
**8AA/P16**

**Fire drills in obstetric emergencies**

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**Background:** A simulation based obstetric skills training programme was implemented in Obstetric Department Rigshospitalet, Denmark in 2003, involving 220 staff members. This was followed by implementation of obstetric “fire drills” in 2007. A skills training programme seems to be a prerequisite for successful implementation of drills.

**Aim of pilot study:** To implement, describe and evaluate the impact of drills in obstetric emergencies on the individual and the organisational level.

**Methods and materials:** Fire drills in the management of post partum bleeding, shoulder dystocia, preeclampsia and eclampsia involving 23 staff members was carried out through March to August 2007. Anonymous questionnaires were given to all participants.

**Results:** Fire drills were considered educational both on an individual as well as on the organisational level. Five participants considered the fire drills to be unpleasant despite finding them educational.

**Take-home messages:** It is an organisational challenge to plan and implement fire drills in an obstetric department. In our experience a skills training programme is an important prerequisite. The fire drills were well accepted by all staff members. All participants in the pilot study found them beneficial in order to improve skills. The need for organisational changes in the department became apparent when running the drills.

**8AA/P17**

**Procedural skill training in medical curriculum: a report from three universities in the south of Iran**

*Mohsen Moghadami*, Mitra Amini, Esmaeel Raeaeet Doost, Bahram Panahi (Shiraz Medical University, Internal Medicine Department, Nemazee Hospital, Shiraz 098, Iran)

**Background:** The ability for doing procedural skills is an important target for medical education and these skills are necessary for diagnosis and treatment of diseases. This study was designed to obtain the opinion of interns about procedural skill training in Shiraz, Jahrom and Fassa medical universities (Three universities in the south of Iran).

**Methods:** 100 medical interns (Last year medical students) were selected for this purpose. A questionnaire containing 25 procedural skills was completed by interns.

**Results:** The results showed that medical students’ abilities are far from the optimal situation. 78 percent of students believed that they did not have the necessary abilities to do practical skills. Most of them have not been trained by competent staff. 82 percent of them reported that educational quality of procedural skill training was unfavorable and they need to learn these skills again.

**Conclusion:** Current medical education curriculum for procedural training does not assure the competency of students in the important procedural skills. Medical education program must pay more attention to teaching procedural skills to medical students and assessing their competence.

**8AA/P18**

**Monitoring and improving neurological examination learning**

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**Background:** Neurological examination is an essential part of the assessment of any patient. Learning of these procedures demands practice, which most often is left to occur in an unstructured way during clinical attachments.

**Summary of work:** Performance of neurological examination is listed in the learning objectives of students in the 3rd of a 6-year medical undergraduate program. We offered 90min sessions on “Mental status/language”, “Cranial nerves”, “Ophthalmoscopy”, “Motor”, “Sensory” and “Cerebellar/extrapyramidal” systems. Attendance was voluntary. Students' perceptions were assessed and their self-reported confidence compared at entrance and exit of the session.

**Summary of results:** Initially, students reported a moderately-low confidence level (median=3.5; 1-7 scale), irrespective of year. However, only those that had previously contacted with the neurological examination in the curriculum reported an increased confidence after the session (end: median=6 vs 4.5). We are currently measuring the ability of students to perform parts of the neurological examination three months after the initial training sessions, comparing with colleagues that did not attend the extracurricular training sessions.

**Conclusions:** Learning of the neurological examination can be potentiated by complementary extracurricular training sessions.

**Take-home messages:** Training sessions outside the clinical setting can be used for monitoring and improving the outcomes of clinical training.

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**Conclusions:** Five themes and 12 categories were identified relevant to students' perceptions: 1) clinical skills (clinical skills development, acclimatation to clinical setting, relevance to clerkships); 2) contextual learning (real patients in clinical setting, integration of classroom to clinical); 3) faculty and peer guidance (role modeling, professional guidance, peers as partners/team/co-learners); 4) connection (being part of a community, receiving personal attention); 5) meaning of medicine (patient contact, vision of medicine as a career).

**Take-home message:** Bedside teaching in small-group settings, combined with longitudinal mentoring, appears to meet multiple student needs, including personalizing medical school and effective clinical skills development.
Development of a new curriculum in basic clinical skills for undergraduate medical students
Ali Labaf*, Azim Mirzazadeh, Hamid Emadi, Farhad Hatami, Setareh Davoodi, Mohamad Rasooli, Azadeh Sadatnaseri, Haleh Naserhojati, Shahriar Nafisi, Mohsen Esfandbod (Tehran University of Medical Sciences, Keshavarz blv. Imam khomeini Hospital, Emergency Department Office, Tehran 1419731351, Iran)

Background: In our university, history taking and physical examination has traditionally been taught in a one-month “Semiology” course. Teaching was mainly lecture-based with limited practical experience. It is generally believed that the course failed to provide students with enough competencies to begin their clinical rotations. We decided to develop a new curriculum to overcome this problem.

Summary of work: Our working group consisted of faculty members who were involved in the “Semiology” course. We employed the 10-step methodology proposed by Harden. Learning outcomes and the course content were determined through group discussions. Timetabling was performed so that it has been integrated into “Fundamentals of Clinical Medicine” course. We decided to actively involve learners as much as possible in acquiring skills and so designed activities and teaching methods accordingly. We also planned to provide students with early patient contact. First block of this curriculum as “introductory course” was implemented in March 2008 and anecdotal evaluation shows student satisfaction and support of this course.

Conclusions: We used the following innovations: 1. peer physical examination. 2. residents as teachers. 3. replacement of lectures by reading assignments. 4. use of video clips for teaching physical examination. 5. development of study and tutor guides.

Take-home messages: Teaching clinical skills is an important component of medical education and requires appropriate teaching and assessment methods such as those adopted in this course.

8AA/P20
Evaluation of the role of workbook to supplement teaching in specialty ophthalmology clinics
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Background: Exposure to specialty clinics for undergraduate medical students is an important aspect of their teaching. Student and consultant supervisors have identified gaps in basic science knowledge, namely anatomy and physiology. There is existing evidence to support the role of workbooks for specialty teaching.

Summary of work: A workbook was devised which covered a range of clinical skills and basic science knowledge relevant to support students attending an ophthalmology attachment. A pre and post course self-assessment evaluation was undertaken by the students, using a 5 point Likert scale. Student t-test analysis was undertaken using an SPSS package.

Summary of results: Students showed general improvements in key areas: Clinical knowledge; Application and understanding of core ophthalmology cases; History taking and documentation; Knowledge base of anatomy and physiology of the eye.

Conclusions: Feedback from senior medical students would appear to support the use of ophthalmology workbooks in the teaching of a range of skills including basic science teaching, in specialty attachments.

Take-home messages: Specialty specific workbooks may provide an additional resource to basic science teaching within the clinical setting.
Physician education characterized as continuing professional development or continuing medical education (CPD/CME) in the Czech Republic is an integral part of all specialties. Such training is supported by the law 95/2004 which has now been adopted. Legislation did not fit fully to the actual needs and particularly to necessary harmonisation of our legislation with EU in conjunction with the enlargement of the EU. The process of transformation of the system of medical education started five years ago and new legislation replaced the old system of medical education, but many problems connected with its practical application were still unsolved. Legislation did not solve the financing of postgraduate education, ensuring feasible training posts, qualified clinical teachers and supervisors, regulation of number of specialists etc. The many years of experience of the Institute for Postgraduate Medical Education that was responsible for full time study of medicine and health care programmes each year. The increasing tendency to create an efficient e-learning system resulted in establishment of Medical FAculties NETwork (MEFANET), an open project that aims to advance medical teaching and learning in Czech and Slovak Republics with the use of modern information technology.

For pregraduate medical teaching, eight faculties provide undergraduate medical education for full time study of medicine and health care programmes each year. The increasing tendency to create an efficient e-learning system resulted in establishment of Medical FAculties NETwork (MEFANET), an open project that aims to advance medical teaching and learning in Czech and Slovak Republics with the use of modern information technology.

There are seven medical faculties in the Czech Republic. Five of them are part of the Charles University in Prague (three are localized in Prague, one medical faculty is in Pilsen and the other one in Hradec Králové). Two more faculties are situated in Moravia (Masaryk University in Brno and Palacky University in Olomouc). In addition to the classical courses of General Medicine all these schools provide education in many Bachelor’s degree programmes (for example Nursing, Physiotherapy, Nurse/Midwifery, Medical Technology, Addictology, Optics and Optometrics, Human Nutrition). Dentistry is taught by five faculties and several follow-up Master degree programmes (health teaching, medical technology and informatics) are also provided. In General Medicine and Dentistry Programmes the traditional scheme of two phase curriculum is used – two or three years long theoretical part followed by three to four years clinical studies. 3rd Medical Faculty in Prague uses integrated outcome-based curriculum of Maastricht type. All the study programmes are completely compatible with the EU requirements; they are organized in the credit system. Many hundreds of Czech students have the opportunity to study abroad within Socrates/Erasmus system and hundreds of international students are enrolled for full time study of medicine and health care programmes each year. The increasing tendency to create an efficient e-learning system resulted in establishment of Medical FAculties NETwork (MEFANET), an open project that aims to advance medical teaching and learning in Czech and Slovak Republics with the use of modern information technology.

Physicians are offered a wide range of different possibilities to participate and to receive certain credit points evaluated according to duration of events. One education hour (45 min) corresponds to 1 credit point. Normally, 30 credits have to be obtained during one year and, by 150 credits fulfilled in 5 years, a diploma confirming participation of the physician in CME/CPD can be delivered. However, other activities like publications, lectures, studies of scientific journals or books as well as e-learning can be considered by the credit system. Physicians at all specialties can therefore receive similar CPD education as in other EU countries.

### Symposium 9A  Continuing Medical Education in Europe

Organised by: Global Alliance for Medical Education (GAME) and the Rome CME/CPD group

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1. CME in Germany: Joh Wilh Weidringer (Bavarian Chamber of Physicians, Munich, Germany)
2. CME in Eastern Europe: Ted Popov (Sofia, Bulgaria)
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4. Industry support and Conflicts of interest: Ian Starke (Royal Colleges, London, UK)
5. Discussion and concluding remarks: Alfonso Negri (Italian Federation of Scientific Medical Societies, Milano, The Rome CME/CPD group, Italy)

### Symposium 9B  Medical Education in the Czech Republic

**9B/1 Postgraduate medical education in the Czech Republic**

**Zdenek Hadra** (Institute for Postgraduate Medical Education, Ruská 85, 100 05 Prague 10, Czech Republic)

This presentation introduces the current development of the system of postgraduate medical education as a part of lifelong medical education in the Czech Republic. Although that system has been quite well developed over the last fifty years in our country, it did not fit fully to the actual needs and particularly to necessary harmonisation of our legislation with EU in conjunction with the enlargement of the EU. The process of transformation of the system of medical education started five years ago and new legislation replaced the old system of medical education, but many problems connected with its practical application were still unsolved. Legislation did not solve the financing of postgraduate education, ensuring feasible training posts, qualified clinical teachers and supervisors, regulation of number of specialists etc. The many years of experience of the Institute for Postgraduate Medical Education that was responsible for postgraduate medical education within the old system based on two-level medical specialization, the new system of extended specializations and their advantages and disadvantages will be discussed, together with the proposed changes following the new legislation.

**9B/2 Medical Continuing Professional Development in the Czech Republic**

**Jan Škrha** (3rd Department of Internal Medicine, 1st Faculty of Medicine, Charles University, Prague, Czech Republic)

Physician education characterized as continuing professional development or continuing medical education (CPD/CME) in the Czech Republic is an integral part of all specialties. Such training is supported by the law 95/2004 which has now been adopted by the Ministry of Health. This material specifies who fulfils the criteria and who may deliver such education. Different organizers and providers are involved in this educational process. Scientific societies, Czech medical chamber, medical faculties and Institute of Postgraduate Education prepare workshops, courses or meetings where the latest news in the respective scientific area are presented. Physicians are offered a wide range of different possibilities to participate and to receive certain credit points evaluated according to duration of events. One education hour (45 min) corresponds to 1 credit point. Normally, 30 credits have to be obtained during one year and, by 150 credits fulfilled in 5 years, a diploma confirming participation of the physician in CME/CPD can be delivered. However, other activities like publications, lectures, studies of scientific journals or books as well as e-learning can be considered by the credit system. Physicians at all specialties can therefore receive similar CPD education as in other EU countries.
Postgraduate study in biomedicine in Charles University in Prague

Postgraduate Study in Biomedicine in Charles University in Prague is organised together with the Academy of Sciences of the Czech Republic. All participants are students of Charles University. The participating faculties of Charles University are: 3 Faculties of Medicine in Prague, Faculty of Natural Sciences, Faculty of Physical Education and Sport, 6 institutes of Czech Academy of Sciences and also some independent institutes (Endocrinology, Rheumatology and Prague Psychiatric Centre), partly Faculty of Medicine in Plzeň and others. Study is organised in two forms: the presence form - duration 3-4 years, combinatory form - duration 5-8 years. The combinatory form is especially focused on medical disciplines because the medical doctors are taking both types of postgraduate studies. The most responsible person is the Tutor who is chosen by the appropriate institution and the Subject Board. The whole study is composed from 19 Subject Boards. The chairman of the Subject Board is responsible for all students in the discipline. The members of Subject Boards are top specialists in the appropriate scientific field (10-15 members). The governing board is the Coordinating Committee composed of all 19 chairmen of Subject Boards. At the top of the organization is the Coordination Board composed of 9 members representing the different participating institutions? To receive the degree of PhD all students have to publish 2 papers with impact factor higher than 1 (in neurosciences 3 papers with IF higher than 1.5). It is also necessary to present the doctor’s dissertation and to defend it in front of the Subject Board. At present we have 1,650 postgraduate students in both forms of study.

Short Communications

9C Developing virtual patients

9C/SC1
Making a case: guidelines for electronic case development

Nancy Posel*, David Fleisser (McGill University, Faculty of Medicine, The Lady Meredith House, 1110 Pine avenue west, Suite 18, Montréal H3A 1A3, Canada)

**Background:** Cases are a traditional component of medical practice and education. Advances in e-learning have resulted in growing utilization of electronic cases. In addition to the benefits associated with on-line presentations, virtual patients are an effective instructional strategy that promotes independent, self-directed critical thinking and decision-making, encourages complex medical problem solving, facilitates assessment and individualization, and simulates learning in realistic contexts.

**Summary of work:** The authors have designed a comprehensive, research-based, theory-grounded, and criterion-referenced guideline to assist electronic development. This guideline is presented as a framework that emphasizes the significance of pedagogical principles, theories of cognitive science and information technologies. Within this construct seven associated themes are highlighted and integrated. These are content, complexity, feedback and assessment, individualization, collaboration, interactivity, and navigation.

**Conclusions:** Electronic case creation can be daunting. Procedural information can help authors. This guideline encourages understanding of the medium, technical functionality and instructional design issues relevant to e-learning.

**Take-home message:** Guidelines for electronic case development are presented to medical educators to facilitate understanding of the potential of the medium as well as to encourage its utilization.

9C/SC2
The international virtual patient application developed by Imperial College London

Maria Toro-Troconis*, Michael Barrett*, David McIntosh (Imperial College London, Faculty of Medicine, South Kensington Campus, Sir Alexander Fleming Building, London SW7 2AZ, United Kingdom)

**Background:** The Faculty of Medicine, Imperial College London, has developed a shareable virtual patients application to support clinical teaching.

**Summary of work:** The application provides a user-friendly interface and the necessary tools to generate virtual patient cases and share them with partner organisations using common learning standards. It supports the delivery of traditional learning, by introducing problem-based scenarios focused on clinical or general practice. Cases can be exported as HTML or SCORM shareable content objects, making them interoperable with different learning platforms, such as WebCT and Moodle.

International partners will access the application in their own languages using simple development and deployment tools that make the virtual patients easily transferable.

**Conclusion:** The capability of a common standard conformant application across partners that is available in their own language provides an effective mechanism to author and share virtual patients that can be deployed on different virtual learning environments (VLEs). This short communication provides a demonstration of the virtual patient application and the deployment of virtual patients on the VLE Moodle.

9C/SC3
An Anglo-German virtual patient case study exploring ‘repurposing and enriching’ as an effective way to share

Jonathan Round*, Soeren Huwendiek**, Chara Balasubramaniam, *1 Terry Poulton*1 (St George’s University of London (UK) and 1The University of Heidelberg (Germany), Centre for Medical and Healthcare Education, Cranmer Terrace, Tooting, London SW17 OR, United Kingdom)

**Background:** Virtual Patients (VPs) are expensive to make. An attractive solution might be to take those from one institution and move them to another. Technology can be an obstacle in sharing VPs internationally but emerging technical standards are making this type of sharing easier. However, is it pedagogically feasible to simply translate a VP from one country to another?
**Summary of work:** The Repurposing Existing Virtual Patients (REVIP) project between St George’s and the University of Heidelberg aims to repurpose and content-enrich existing German VPs to English language, culture, and pedagogy. These VPs would then be embedded, tested, and evaluated as core components within the paediatrics module and ultimately made open-and-available to everyone for FREE.

**Conclusions:** In the first 6-months, REVIP has created repurposing workflows, best-practice guidelines, and tips for effective curricular embedding. REVIP has also shown that you cannot merely translate and transfer a VP from one country to another and expect it to have the same educational impact.

**Take-home messages:** Repurposing and enriching is an effective way to reuse VPs as opposed to creating from ‘scratch’. However, much care should be taken to make them suitable for the educational needs of the student, in their local context.

**9C/SC4**

**Is there continuity in learning for junior doctors?**

*E Wood* (Colchester General Hospital, Dept of Gastroenterology, Essex Rivers Healthcare Trust, Turner Road, Colchester CO4 5JL, United Kingdom)

**Background:** Experience of the patient journey offers a step wise approach to learning and is essential in acquiring clinical judgement. Reduction in junior doctor’s working hours, increasing shift work and shortened career pathways threaten to compromise the junior doctor’s experience of the patient journey and thus the continuity in learning that it provides.

**Summary of work/Results:** Prospective audits of medical admissions were undertaken and demonstrated (a) of 105 patients admitted during 5 on-calls, 37.1% (39/105) of patients were not presented to the consultant on the ward round; and (b) of 158 patients admitted during 9 on-calls, 12% (19/158) of patients were transferred to the clerking doctor’s home ward for ongoing care.

**Conclusions:** There does not appear to be adequate continuity in learning for junior doctors. A third of doctors do not present their patients’ cases to the consultant and only 12% of patients are transferred to the clerking doctor’s home ward.

**Take-home messages:** The learning opportunities provided by the patient journey are being lost. I have developed a Virtual Continuity in Learning Programme to recapture this lost knowledge. Utilising the Virtual Consulting Room, this brings together the actual and virtual patient journey to provide on-the-job learning: http://www.ucl.ac.uk/medicalschool/current-students/learning-resources/Virtual-consulting-room-demo/

**9C/SC5**

**Virtual patients using Computerized Tomography (CT) imaging of cadavers to enhance integration of clinical and basic science student learning in anatomy**

*Stanley Jacobson*, Joseph Polak, Scott Epstein, Susan Albright (Tufts University School of Medicine, 145 Harrison Ave., Boston, MA 02111, United States)

**Background:** Virtual patients created using Computerized Tomographic images of thirteen cadavers were posted on TUSK’s (Tufts University Sciences Knowledgebase) case simulator to enhance translational education at the Tufts University School of Medicine in the 1st year Anatomy Course. Our purpose was to support the integration of basic and clinical science emphasizing clinical correlation during early classroom and laboratory by highlighting the clinical relevance of content.

**Summary of work:** The cadavers underwent total body CT imaging. Images were converted into movies and labeled. The CT images were analyzed and, together with knowledge of the reported cause of death, we constructed plausible clinical cases which were designed to highlight abnormal anatomic findings encountered during the cadaveric dissection. The Virtual Patients were sequentially deployed corresponding to cadaveric dissection (e.g. limb, thoracic, abdominal/pelvic). Students reviewed cases, CT images (with normal images for comparison) and answered questions emphasizing clinical-anatomic-pathophysiologic correlation. The cases and annotated answers provide links to additional TUSK and externally-based learning resources. Additional digital photographic imaging of key anatomic findings at dissection allows for creation of a virtual library for future use.

**Conclusions:** Early evaluation of the project reveals promise but areas for improvement including asking students to create the cases themselves.

**9C/SC6**

**The European electronic Virtual Patient programme – the story so far**

*Terry Poulton, Uno Fors, Martin Fischer, David Davies, Bas de Leng, Soeren Huwendiek, Valentin Muntean, Irena Roterman, Chara Balasubramaniam* (St Georges University of London, e-Learning Unit, Centre for Medical and Healthcare Education, Hunter Wing, Cranmer Terrace, Tooting, London SW17 0RE, United Kingdom)

**Background:** Electronic virtual patients (VPs) are now recognised by the medical and healthcare education community as effective tools for developing clinical reasoning. However, VPs are time-consuming and expensive to produce from ‘scratch’. So, is repurposing-and-enriching an effective way to share?

**Summary of work:** The European Electronic Virtual Patient (eViP) Programme is an 8-partner collaboration working towards creating a shareable-bank of interoperable VPs in different languages and cultures, by repurposing-and-enriching the partners’ existing VPs. The Programme is being carried out by the following projects: (1) Pilot study; (2) Standards implementation; (3) Repurposing and enrichment; (4) Awareness and dissemination; (5) Assessment and evaluation; (6) Exit and sustainability. In addition, it’s the adoption of good-management practice by all partners that has ensured all project outputs so far have been delivered to the agreed time, cost, and quality.

**Conclusions:** eViP has shown much progress over the last year by working with a number of collaborators in proving that repurposing-and-enriching is an effective and efficient way of sharing VPs.

**Take-home messages:** Ultimately, eViP is kept on course by the partners’ genuine enthusiasm for a ‘network’ in which everyone works together to produce a shareable-bank of VPs, which will prevent re-invention of the wheel in each institution.
9D/SC1
Annual Review of Competence Progression (ARCP) panels
Simon Street*, Jill Edwards (NHS Education South Central - Oxford Deanery, The Triangle, Roosevelt Drive, Headington, Oxford OX3 7XP, United Kingdom)

Background: The new membership examination, the nMRCGP, was introduced on 1st August 2007. All trainees must pass this exam to obtain a certificate of completion of training. One of the three components of the exam is an assessment of the electronic portfolio that all GP trainees are required to keep throughout their specialist training. Each region or ‘deanery’ is required to appoint a panel of assessors to assess progress throughout the training programme.

Summary of work: This report will reflect the experience of one deanery in the first year of this new form of assessment. The report will address the challenges faced by the administrators, the associate directors, programme directors, trainers and specialist trainees. It will describe the selection and training and the establishment of panels for the Annual Review of Competence Progression (ARCP). It will report any problems that the trainees and educational supervisors may have encountered in presenting evidence of competence.

Conclusions: The first assessments will be made in June 2008.

Take-home message: This presentation will offer insights into the implementation of a new form of assessment in the workplace.

9D/SC2
Scoring a cardiac patient simulator station at a Canadian National Specialty Examination
Barry Kassen*, Maria Bacchus, Gary Cole, Rose Hatala, Barry Issenberg, Ross Scales (University of British Columbia, St. Paul’s Hospital - 1081 Burrard Street, Division of Internal Medicine, Room S910B, Vancouver, British Columbia V6Z 1Y6, Canada)

Background: The current study assesses approaches to scoring a cardiac patient simulator (CPS) station during a national specialty examination.

Summary of work: During one station of the 2007 Royal College of Physicians and Surgeons of Canada’s Comprehensive Examination in Internal Medicine, 251 candidates examined a CPS mannequin programmed with one of 5 cardiac diseases. Two observers independently assigned a global rating (GR) of cardiac physical examination competence by assessing candidates’ physical exam technique, final diagnosis, and accuracy of cardiac findings (CF). One observer recorded the candidate’s comments using a CF checklist which was later scored by two independent investigators.

Summary of results: Mean inter-observer reliability of the GR was 0.93 (range 0.90-0.96) and for scoring the CF checklist was 0.97. Multiple regression analysis, estimating the relative contribution of technique, CF and final diagnosis to the GR, revealed R2=0.85. Standardized beta, indicating the relative contributions of each component to one observer’s GR, yielded technique=0.22, CF=0.46 and final diagnosis=0.33.

Conclusions: Inter-observer reliability was high for the GR of bedside cardiac diagnostic skills. A CF checklist also yielded reliable assessments of candidates’ ability to identify physical findings, which appeared to weigh most in assignment of the GR, compared to traditional measures (physical exam technique). A GR incorporating identification of simulated findings may provide reliable and more valid assessments of physical examination competence.

9D/SC3
Ten years of personalized assessment and individualized remediation in postgraduate education
Martha Illige* (Rose Family Medicine Residency, 4545 E 9th Avenue #010, Denver, Colorado 80220, United States)

Background: Based on work in the United States with post-licensure assessment and enhancement, I noticed that assumptions in graduate medical education about professional competencies, based on medical degrees alone, were unwarranted. New trainees vary greatly in medical knowledge, clinical reasoning, communication skills, and professionalism. Family medicine training in the US comprises a three year program of outpatient and inpatient block rotations for newly minted graduates.

Summary of work: Faculty at a family medicine residency structured personalized assessment, starting with modified chart stimulated recall interviews and then adding components to be more inclusive of communications and professionalism; multisource feedback, videorecording analysis, observations of behavior. 87 graduates have participated in these processes since 1997.

Conclusions: By engaging in formal assessment early in residency, the faculty created individualized, focused enhancement opportunities and prevented third year pressure to remediate problems. Needs included depth of medical knowledge (understanding of basic mechanisms of disease), organization and application of knowledge, communication skills, empathy, teamwork, leadership, and constructive responses to criticism.

Take-home messages: Early intervention is a better strategy than assuming skills based on credentials.

9D/SC4
The utility of mini-CEX in specialist anaesthesia training
J Weller*, A Jones, K Smith, K Pedersen, M Misur, B Jolly (University of Auckland, Centre for Medical and Health Sciences Education, Faculty of Medical and Health Sciences, Auckland 1050, New Zealand)

Background: We evaluated the utility for mini-CEX in the context of everyday anaesthesia practice and supervision and realistic assessor training.

Summary of work: Our novel on-line assessment form included pop-up descriptors and submission to a confidential database. We offered presentations, workshops, on-line and written information. We asked assessors and trainees to consider a mini-CEX any time they were rostered together. One year after introduction, we conducted a survey, focus groups and interviews. The latter were recorded, transcribed, and entered into nVivo7. Scores were analysed using generalisability theory (GENOVA). Qualitative data were analysed to identify themes into which items were coded.

Summary of results: We collected 296 assessments from 55 trainees and 56 supervisors in one year. Survey response rate was >80% (trainees and assessors). The process was feasible, with little impact on workload and high satisfaction. Reliability was low, with 25 assessments required for a G co-efficient of 0.8. The themes from the qualitative data were; the educational impact; the workplace culture and environment; the instrument and factors affecting its reliability and how the results should be interpreted. The analysis will guide assessor training initiatives.
**Conclusions/Take-home messages**: The mini-CEX is valuable for formative assessment, but assessor variability limits its utility in summative assessment. Assessor training is required.

**9D/SC5**

**Juggling OSATS (Objective Structured Assessment of Technical Skills): increasing trainees' awareness of the tool**

*J F Bodle*, **D M Binney** (Yorkshire Deanery, Willow Terrace Road, University of Leeds, LS2 9JT, United Kingdom)

**Background**: Reduced Junior Doctor training hours, shift patterns of working and disruption of the traditional apprenticeship learning environment for surgical trainees have lead the Royal College of Obstetrics and Gynaecology to overhaul assessment of surgical skills. After a pilot study showed OSATS forms, comprising a checklist and generic transferable skills, to have good face validity, the College introduced them as the mainstay of assessing independent surgical competence.

**Summary of work**: Two workshops were undertaken at the Annual Conference for Specialist Registrars in Obstetrics and Gynaecology in York, June 2008, to increase trainees' knowledge about the place of OSATS in Postgraduate training. The aims of the workshop were to demonstrate, by doing, the practical aspects of constructing and using OSATS, thereby to promote engagement with the process and to appreciate the strengths and weaknesses of OSATS in order to use them more effectively. Questionnaires were distributed to trainees prior to and after the workshop to assess these learning outcomes. Results will be presented.

**9D/SC6**

**Developing Clinical Skills Assessment (CSA) examination training on a locality basis**

*Richard Mumford*, Roger Price (East Midlands Healthcare Workforce Deanery, Rutland House, 11 Merus Court, Meridian Business Park, Leicester LE19 1RJ, United Kingdom)

**Background**: The CSA is a new examination in UK GP Specialty Training and is one of three components of the nMRCGP assessment. It is an assessment of a doctor's ability to integrate and apply clinical, professional, communication and practical skills appropriate for general practice. It is 13 simulated consultations using role-players. This assessment started in 2007 and caused some anxiety amongst our trainees, centred around fear of the unknown.

**Summary of work**: We provided preparation courses for our GP trainees designed to provide familiarisation. These were delivered at 3 levels. First year trainees received an introduction to the CSA designed to provide context. Second year trainees received DVD based simulation evaluation and discussion. Final year trainees received a mock CSA akin to the CSA itself using live simulations and following the CSA timings etc.

**Conclusions**: We have been able to achieve our primary aim of demystifying the process and providing “practice” time to enable our trainees to familiarise themselves with the exam.

**Take-home messages**: These sessions have been well evaluated. The main reason for that has been that we have had input from local CSA assessors, benefiting from their recent and relevant experience of the exam itself.

**Short Communications**

### 9E Quality assurance and curriculum evaluation

#### 9E/SC1

**Governance: the missing link in high quality clinical education?**

*Mary Lawson*, Margaret Bearman, Beverly Bird, Joan Benjamim, Claire Byrne, Alison Jones, Neil Spike, Geoffrey Solarsh, Rory Wolfe (Australian & New Zealand College of Anaesthetists, 630 St Kilda Road, Melbourne 3004, Australia)

**Summary of work**: The Australian Medical Education Study (AMES) investigated the quality of medical education nationally, addressing questions including “What is ‘best practice’ in undergraduate clinical education?”

**Summary of results**: Survey (n=3,382) interview and focus group (n=128) respondents indicated high levels of satisfaction with clinical environments as places to learn; 80% medical students, 86% junior doctors and 61% educators and employers of junior doctors were satisfied/very satisfied with this aspect of education. Governance of clinical programmes was a significant problem. Students and educators were negative about curriculum administration highlighting internal politics and poor communication, coordination and relationships between central and clinical sites, particularly rural sites. Lack of transparency of the curriculum was repeatedly reported. Problems operated at administrative and educational levels: administrative tasks (e.g. providing teaching resources) were reported as being poorly coordinated and clinical educators/employers reported poor communication of key teaching concerns such as curricula and methods.

**Conclusions**: The impact of university governance upon the learning experience of students is highly influential. Difficulties were sometimes linked to early iterations of new curricula although the trend seemed to be a progressive worsening.

**Take-home messages**: Governance was not a key area of investigation in AMES but emerged as a major finding impacting unfavourably on the quality of highly valued clinical experiences students received. Paradoxically the moves towards increased control and centralisation of curricula for quality assurance and equity reasons may have impacted adversely on the experience of all cohorts in this study.

#### 9E/SC2

**The review of Tomorrow’s Doctors – reviewing the standards for undergraduate medical education in the UK**

*Martin Hart*, Tammie Lawrie (General Medical Council, 350 Euston Road, London NW1 3JN, United Kingdom)

**Background**: Tomorrow’s Doctors sets out the General Medical Council’s (GMC’s) standards for the knowledge, skills and behaviours that undergraduate medical students in the UK should learn. These standards provide the framework that UK medical schools use to design their own detailed curricula and schemes of assessment and against which the quality of teaching and assessments is tested.
9E/SC3

Qualitative analysis of free text in student evaluation of teaching

Martin Muellera, Ron Bailey*, Susan McPherson (King’s College London, Department of General Practice, KUMECC, 5 Lambeth Walk, London SE11 6SP, United Kingdom)

Background: Kings’ College London School of Medicine community teaching programme reviews evaluation data from 2200 undergraduates. We decided to look more formally at the free text that students submit along with Likert responses. We asked a qualitative researcher to analyze 3000 free text submissions, using MaxQDA, to help answer a key question: Can we learn more about concerns and issues of organization and content of community teaching by analyzing narrative responses?

Summary of work: We will discuss issues of organization and content discovered in students’ evaluations of placements, describe themes emerging in our analysis, discuss how themes from qualitative analysis inform teacher development, and facilitate discussion about using evaluation in constructive feedback to teachers. We will describe our data-collection for student evaluation of community teaching and themes which emerged using the MaxQDA analysis. We will facilitate discussions on: using narrative for tutor feedback, using themes from narrative to plan professional development, and other uses of students’ evaluation of teaching.

9E/SC4

Effects of external evaluation: a follow up study

Berit Elka±, Berghild Roalda, Kirsten Hofgaard Lycke (1University of Aarhus, Denmark; 2University of Oslo, Norway)

Background: Higher education study programs are currently evaluated at intervals by external boards for critical review of existing study programs and to present suggestions for improvement. The literature on possible effects of external evaluations, however, is sparse. Following an external evaluation of the medical education program at the University of X in 2006, the external evaluation board decided to conduct a follow up study on the effects of the review.

Summary of work: Data for the study were gathered in 2008 through semi structured interviews with 24 academics and administrative personnel holding leadership positions at different levels of the medical school.

Summary of results: The evaluation report with findings appeared well known at all institutional levels. Effects were noted in the broad personnel holding leadership positions at different levels of the medical school.

Conclusions/Take-home messages: We conclude that the effect of an external evaluation on the study program is: related to participation and institutional ownership; dependent on top-down as well as bottom-up processes.

9E/SC5

An assessment metric scorecard for the institutional prioritization of graduate medical education programs

Peter M Murray*, Jennifer H Valdivia, Mary R Berquist (Mayo Clinic, Department of Orthopedic Surgery, 4500 San Pablo Road, Jacksonville, FL 32224, United States)

Background: Current economic situations may demand difficult decisions regarding graduate medical education growth. We describe our scorecard, aligned with our institutional strategic priorities, for the annual assessment and prioritization of our programs.

Summary of work: Our scorecard evaluates programs on the basis of research, teaching, patient service, and a general category. Programs lose points for falling short on basic requirements and may gain points by excelling in innovative areas. A mean score for all programs was determined and programs were evaluated relative to one standard deviation from the mean.

Summary of results: The scorecard was used for 3 consecutive academic years. During this time we have seen an increase in the mean score of our programs, viewing this as evidence of best practice sharing. During academic year 2006-2007, 4 programs performed below one standard deviation and three programs performing above one standard deviation from the mean.

Conclusions: Our scorecard is useful for the yearly evaluation of graduate medical education programs in support of our institutional strategic priorities. It encourages the sharing of best practices.

Take-home message: Modifications of the relative weights of this scorecard can be made to align with the strategic priorities of other institutions.

9E/SC6

Students’ evaluation of teaching and teachers: To whom? For what?

Gordana Pavlekovic*, Želimir Bradamante, Nada Čikeš (University of Zagreb, Medical School, Zagreb 10000, Croatia)

Background: It is generally assumed that student evaluation of teaching and teachers leads to quality of teaching, although it is well known that the methodology needs to be improved.

Summary of work: In academic year 2002/3, The Medical School, University of Zagreb, with around 250 students per year, decided to use students’ anonymous questionnaires as an instrument in teaching process evaluation. The aims of this 5-year implementation were (1) validation of the questionnaire/instrument, (2) development of Protocol for implementation and (3) answers on the questions «Who?» and «For what?» based on staff and students’ expectations.
Designing feasible specialist training programs: Dutch experiences with a three steps model
Hanneke Mulder*, Fedde Scheele, Pim Teunissen, Scheltus van Luijk, Erik Heinerman, Lia Fluit, Abe Meininger, Marjo Wijnen-Mejier, Gerrit Glas, Henk Slutter, Thalia Hummel (UMC Utrecht School of Medical Sciences, HB 4.05, P.O. Box 85500, Utrecht 3508 GA, Netherlands)

Background: In the Netherlands the CanMEDS 2000 model is adopted as the underpinning for restructuring education programs of all 27 clinical specialties. Medical Specialty Societies, responsible for this modernisation process, struggle with several challenges. One challenge is to develop a curriculum that adheres to the legal requirements. Another is to make sure that the curriculum on paper can be adapted to today’s complex clinical practice.

Summary of work: The Dutch Advisory Board for Postgraduate Curriculum Development designed a three steps model in designing a curriculum with a corresponding three step training cycle for competency based education and assessment in clinical practice.

Conclusions: The presented model for curricular development aims to connect three worlds: the clinicians, the educationalists and the society. It is in line with the principles of competency based education and has been used by most Dutch Medical Specialty Societies. It proved to be a useful tool for structuring curriculum development.

Take-home messages: Any model for curriculum design should respect the culture of different specialties. Moreover, both ongoing development of the resident on different CanMEDS roles and proficiency in specific tasks should be taken into account. Finally, medical training should be in line with clinical demands. Our tools help to meet these various needs.

Postgraduate training: startingpoints for multidisciplinary courses
Jan Borleffs*, Abe Meininger, Frans Jaspers, Marijn Mens on behalf of the College of Postgraduate Training of the Netherlands Federation of University Medical Centers (University Medical Center Groningen, Postgraduate School of Medicine, Hanzeplein 1, Groningen 9713 GZ, Netherlands)

Background: In the Netherlands current modernisation of postgraduate specialty training is based on the CanMEDS 2000 model with seven competency fields (medical performance, communication, collaboration, knowledge and science, community performance, management, professionalism). Many discipline related competencies will be achieved during daily practice. However, for the achievement of other general competencies additional courses have to be designed.

Summary of work: In order to facilitate the societies of medical professionals who are responsible for the training programmes, in December 2007 the Netherlands Federation of University Medical Centers presented a brochure with startingpoints for multidisciplinary courses. Definitely, this was done in close collaboration with those for whom the brochure is meant, namely specialist programme directors and residents. Based on inventories among them about their priorities eight courses have been identified: Evidence Based Medicine, Communication Skills, Patient Safety, Profession & Community, Teaching Skills, Health Law & Ethics, Management of Improvement of Quality of Care, and Management & Health Economics. For these subjects the brochure pays attention to (i) the multidisciplinary character, (ii) general startingpoints dealing with content and learning goals, design, educational concepts, assessment and evaluation, and (iii) the implementation and optimal timing of the courses. The brochure and experiences with it will be presented during the conference.

Standardization of in-training evaluation
Gary Cole* (Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, ON K1S 5N8, Canada)

Background: The Royal College of Physicians and Surgeons of Canada sets the standards for in-training assessment for all 50 specialties in Canada. In order to be certified residents must show competence in all seven CanMEDS roles. As these programs exist in 17 centers across Canada there is a need for standardization of the assessment across programs.

Summary of work: Standardized Assessment of Clinical Examination Reports (STACERS) has been developed in four specialties. These reports are based on a standardized process of administration and scoring and have been designed to assess any of the CanMEDS roles.

Conclusions: The STACER approach generally works well in resolving the problem of achieving a standardized assessment of the CanMEDS roles. However, specialties have experienced different problems, particularly in the process of the evaluation.

Take-home messages: Achieving a standardized assessment of the multiple aspects of a competency framework such as the CanMEDS or ACGME is a serious challenge. Developing standardized assessment instruments is relatively easy compared to achieving a standardized administration.

PCCEIR (Spanish acronym for Complementary Common Programme for specialists in health sciences in Andalusia): an orientation to core skills in specialised training in the Andalusian Public Health
T Campos, A Garrido*, A Torres, (Regional Ministry of Health, Government of Andalusia, Avda. Innovacion s/n Edificio Arena 1, Sevilla 41071, Spain)

Background: Postgraduate health training consists of the period of state regulated learning whose objective is to provide, under the tutelage of expert professionals and experienced pedagogical support, the skills profile necessary to fulfill professional activity.

Conclusions: The expectations of students, teachers and Faculty Council how to use the students’ evaluation results are different and answers on questions «To whom» and «For what» are still in doubt.
Summary of work: The Complementary Common Programme for specialists in health sciences in Andalusia (PCCEIR) is a project which the APHS has been developing since 2002 to complement specialised training through 6 teaching modules (205 hours) which, inspired by the WFME Standards, strengthens this training with regard to the development of aspects of bioethics, social responsibility, communication, research, etc. in consistency with the logic of core skills and generalised training. The strategic values of the framework of the Andalusian health organisation, where the PCCEIR has been embedded, include orientation to excellence in citizen care and the continuous training of professionals.

Conclusions: The PCCEIR reinforces the attainment of a basis of common core knowledge, generates advantages to prevent incorrect derivations and fragmentation in care, increases technical versatility in professionals and chances of mobility and ensures consistency and homogeneity in clinical practice.

9G/SC2
Highlighting educational needs arising from patient safety data related to the use of medicines
H Hesselgreaves*, A Watson (NHS Education for Scotland, 2 Central Quay, 89 Hydepark Street, Glasgow G3 8BW, United Kingdom)

Background: Large sets of data relating to medication incidents have been collected by health organisations, following successful learning from critical incidents and errors in other industries. The reduction of errors has become an international priority for healthcare, and in Britain, the Department of Health has put learning from errors at the top the agenda.

Summary of results: This exploratory pilot study examined the educational needs arising from existing patient safety data related to the use of medicines in secondary care settings in Greater Glasgow, Scotland. Data were themed, and focus groups with mixed groups of medical, nursing pharmaceutical healthcare professionals identified areas which may be addressed educationally and how.

Conclusions: Curriculum and training may be informed by the analysis of incidents, which provide insight into areas where further development or support may be required.

Take-home messages: The well-rehearsed argument about introducing clinical skills with patients early in the education of health professionals is supported by this data. There is a clear requirement for more initiation around the use of records and documentation.

9G/SC1
Integration of patient safety concepts in undergraduate medical curriculum
Ara Tekian*, David Mayer, Anne Gunderson (University of Illinois at Chicago, 808 S. Wood St. Rm 986 (m/c 591), Chicago, Illinois 60612, United States)

Background: Patient safety is a major concern in the provision of quality healthcare worldwide. Discussions on the design of patient safety curricula at the undergraduate medical education level have been sparse.

Summary of work: Medical educators from the University of Illinois at Chicago organized an annual invitational roundtable where key stakeholders from the fields of nursing, pharmacy, medicine, public health, and law, as well as health care administrators attended. The participants met for four days during summers of 2005-2006 in Telluride, Colorado.

Summary of results/Conclusions: The roundtable discussions yielded three main outcomes that were addressed and integrated in the new longitudinal patient safety curriculum: 1) Seeing health care education through a different lens, 2) Specific curriculum content for patient safety (including 12 specific elements, such as error science and management; medication error and reconciliation; and interdisciplinary teamwork skills), and 3) General curricula principles (including inter-professional education). Analyses of surveys and pre-post tests over the four-year curriculum demonstrated significant improvement of students' knowledge and skills in patient safety.

Take-home message: To change the current culture, participants believe that it is important that students understand, appreciate, and demonstrate appropriate skills related to medical errors and patient safety early in the professional education.
9H The place and role of radiological imaging in the medical school curriculum: moving from tradition to innovation

Cristian Stefan (Touro University College of Medicine, New Jersey, USA) (Chair); Andreas H Weiglein (Medical University Graz, Austria), Goh Poh Sun (National University of Singapore, Singapore), Allan Carmichael (University of Tasmania, Australia)

The field of radiology continues to expand and diversify, with tremendous impact on diagnostic and therapeutic possibilities. Do the medical school curriculum and pedagogical modalities adequately evolve in order not only to keep up with the technology but also to take full advantage of the opportunities offered by radiological imaging as a major and versatile component of the overall instructional process? The symposium will briefly review more traditional instructional formats and focus on new, various and efficient ways played by radiological imaging as a key component in building a robust new curriculum or adapting/improving an existing one. The audience is invited to actively contribute to the discussions.

9G/SC3
Implementation and assessment of a longitudinal patient safety student curriculum on teamwork, leadership, communications and stress through team-based games

David Mayer*, Marcia Edison, Anne Gunderson, Ara Tekian, Kelly Smith, Viveka Boddipelli (University of Illinois at Chicago (UIC) College of Medicine, 1819 W Polk Street, Room 150 CMW, Chicago, Illinois 60612, United States)

Background: Patient safety has emerged as a major concern in healthcare. The aviation industry has successfully addressed “preventable errors” through training in leadership, interpersonal communications, teamwork, stress management, conflict resolution and decision-making. Research has shown efficiencies in these skills are valuable in reducing errors and improving error management.

Summary of work: Through US Department of Education funding, 8 three-hour training modules targeting teamwork, communication, leadership and stress management skills were implemented into the medical school curriculum. Using games and team-based problem solving tasks, students were given opportunities to practice and develop these skills. Students were assessed and given feedback by faculty during debriefing sessions immediately after training. Students were also given surveys to evaluate the sessions and satisfaction with training.

Summary of results/Conclusions: Students overwhelmingly reported the training modules incorporating team-based games met or exceeded expectations and were very relevant to patient safety and their future role as team-based healthcare providers. Students also felt curricular time for continued practice and mastery of these skills should be increased.

Take-home messages: New educational interventions using team-based problem-solving games focused on teamwork, communications, leadership and stress were received very favorably by students and increased their perceptions regarding patient safety training.

9G/SC4
Improving patient safety in the operating theatre through interprofessional teamwork

Alan Bleakley*, Adrian Hobbs* (Peninsula College of Medicine and Dentistry, Knowledge Spa, Royal Cornwall Hospital, Truro, Cornwall TR1 3HD, United Kingdom)

Background: The Theatre Team Resource Management project, initiated in 2002, is an ongoing collaborative inquiry with 300+ operating theatre practitioners at the Royal Cornwall Hospitals Trust, Truro, UK.

Summary of work: We were able to stagger the introduction of a complex educational intervention to two distinct sites with a one year lag. We introduced iterative education in human factors, team briefing and debriefing, and a local, narrative close reporting system. Our aim was to improve team working in order to set more positive patient safety climates. Safety cultures are built on values change (climate) that promotes a grassroots culture change. We employ a mixed methods data collection strategy, including observation, questionnaire, and interview. Our baseline outcome measure is a validated Safety Attitude Questionnaire (SAQ) adapted for UK operating theatres. We have administered the SAQ three times over five years, comparing scores against baseline and between cohorts.

Summary of results/Conclusions: Results show a persistent significant difference in scores between the initial experimental group and control group. Results demonstrate that attitudes towards team work in operating theatres can be significantly improved through a structured educational intervention, and that this improvement can be self sustaining. Such improvement sets a positive climate for patient safety activities.

9G/SC5
The safety competencies: enhancing patient safety across the health professions

Susan Brien*, Chantal Backman, Jason Frank (Canadian Patient Safety Institute, Royal College of Physicians and Surgeons of Canada, 774 Echo Drive, Ottawa, Ontario K1S 5N8, Canada)

Background: The Canadian Patient Safety Institute and its partners recognized that the lack of a framework describing competencies for patient safety was a barrier in implementing a patient safety curriculum into Canadian health professional schools.

Summary of work: Background surveys of professional schools revealed little integration of patient safety within the Canadian curriculum of health professional schools and confusion over even the definition of patient safety. Based on the Royal College of Physicians and Surgeons of Canada CanMEDs framework and methodology, six domains of Patient Safety with twenty four key competencies and 146 enabling competencies were created by a team of health profession educators.

Conclusion: As patient safety competencies continue to be the focus of team and communication changes in curricula, a framework such as the Safety Competencies can accelerate this transformation.

Take-home messages: Frameworks provide road maps for health professional educators to create contextual patient safety curriculum for their jurisdictions; Competencies that are inter professional need to be created by inter professional teams; Patient Safety is the thread that unites the interprofessional education agenda.
9I The role of simulators in healthcare professions education

**9I/SC1**
Simulation based training as a complement to clinical placements in undergraduate medical education: a state wide study from Australia

Robyn Hill*, Amelie Dinsdale, Debra Nestel, Brendan Flanagan (Gippsland Medical School, Monash University, Building 3W, Room 228, Northways Road, Churchill 3842, Australia)

**Background:** Medical school numbers in Victoria, Australia, are to increase dramatically in 2008, placing pressure on educators and clinical placements. The Victorian government commissioned an evaluation of the use of existing simulation resources, and the need for additional resources to support clinical skills education in an effort to develop strategies to ease this pressure.

**Summary of work:** Interviews were conducted with 23 faculty and 9 students from 16 clinical sites exploring the use of clinical simulation in undergraduate medical education; the nature of the educational activities; the staff, facilities and equipment; and the clinical skills taught and assessed.

**Conclusions/Take-home messages:** All clinical skills relevant for undergraduate medical education could to some extent be taught and assessed in simulation; Existing simulation facilities were under-utilised; Faculty had diverse experiences in simulation based education; Limited theoretical underpinning to simulation based education; Simulation appears to accelerate the learning of simple and more complex technical procedures by complementing student experiences in real clinical settings; Shared and complementary simulation infrastructure and faculty development may ease clinical placement pressures.

**9I/SC2**
A core skills simulator for teaching palpation skills to health professionals

S Baillie*, N Forrest, S May (The Royal Veterinary College, Hawkshead Lane, North Mymms, Hatfield AL9 7TA, United Kingdom)

**Background:** Palpation is fundamental to many clinical examinations in both human and veterinary medicine. However, learning the skills while examining patients presents a number of issues and therefore, simulators are often used in training. Usually, each simulator provides training for a specific procedure but most palpation-based examinations involve using a set of common ‘core’ skills. Therefore, an alternative approach, a core skills simulator was developed.

**Summary of work:** Core skills were identified by interviewing doctors and veterinarians and using a questionnaire. The simulator uses haptic (touch) technology and runs in a computer games environment. There are two levels: Level 1 consists of a game for each core skill; Level 2 has simulations of procedures, which players access after developing the required core skills. An initial version was evaluated with veterinary students.

**Summary of results:** The feedback was encouraging; students were able to use the haptic games environment and engaged in improving their skills.

**Conclusions:** The simulator aims to equip trainees with core skills, the ‘building blocks’ for many procedures, and trials will be undertaken to assess the learning effects. The simulator is also being adapted to provide training for all health professionals as the core skills are similar.

**9I/SC3**
The Management of Life Threatening Illness (MOLTI) course: an efficacy assessment on the SimMan®

Elpiniki Laiou*, Thomas H Clutton-Brock, Celia A Bown, Richard J Lilford (The University of Birmingham, Department of Public Health and Epidemiology, Edgbaston, Birmingham B15 2TT, United Kingdom)

**Background:** Medical trainees do not have unrestricted access to large numbers of patients in different clinical scenarios. To teach the skills needed to recognise and prevent critical events to medical undergraduates, a simulation course called Management of Life Threatening Illness (MOLTI) has been developed, which uses the SimMan®. The aim of this study was to assess the efficacy of the MOLTI course.

**Summary of work:** 53 fifth year medical students participated in a randomised controlled trial that compared MOLTI training on the SimMan® to no such training. All participants underwent two assessments on different MOLTI scenarios. Upon completion of the assessments, the control group also received the MOLTI training. All participants filled in a feedback questionnaire. Assessments were recorded with video to be reviewed by two independent assessors using a checklist of required tasks and global ratings of performance.

**Summary of results:** The majority of participants (98%) felt that the MOLTI training was useful. Specific elements identified included the opportunity to practice, seeing the effects of their treatment decisions and receiving feedback. The assessors’ results will also be discussed.

**Conclusions/Take-home messages:** The opportunity to practice different clinical scenarios using computer-based simulation is considered a valuable adjunct among undergraduate medical students.

**9I/SC4**
The IAVANTE foundation strategies for training Andalusian health service professionals

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**Background:** The mission of the IAVANTE Foundation is to train doctors and nurses. It belongs to the National Health System and is managed by the Andalusian Regional Government whose activity covers 80,000 health professionals.

**Summary of work:** Strategies and activities: The selected training methodology is simulation as it provides the best learning curve and improves patient safety; Simulation training uses basic and complex manikins, virtual reality equipment and actor-based simulation; he simulation covers both medical and surgical areas; The training events are designed and carried out in the Multifunctional Simulation Centre in Granada (3400m²) which reproduces any environment deemed necessary; The training activities are selected according to the priorities of the Andalusian NHS; The training activities which do not require complex simulation material are carried out directly in the hospitals and health centres in order to facilitate the professional’s training; The Foundation has a Virtual Campus which covers complementary e-learning activities; The training of tutors and resident is a priority; Our Foundation objective is to become self-financed.
Conclusions: To date IAVANTE has designed 70 training activities with more than 6,000 trainees per year; levels of satisfaction for both tutors and learners are high.

9J/SC1
Developing a national specialty training recruitment process for General Practice
Simon Gregory*, Fiona Patterson, Simon Plint, Bill Irish, Gai Evans (East Midlands Healthcare Workforce Deanery, Rutland House, 11 Merus Court, Leicester LE191JR, United Kingdom)
Background: Those responsible for UK General Practice specialty training have worked together to create a single national recruitment process that is equitable, valid and reliable.
Summary of results: In 2007 a UK wide process was introduced, 9,000 applicants made 22,000 applications for 3,766 places. Of these 8,399 attended the stage-2 and 7,100 allocated to stage-3. All vacancies were filled. The GP process delivered despite the failure of the overall UK Medical Training Application System (MTAS). CPS: 83% of candidates agreed relevant; PD: 60% felt relevant; Selection Centre: 90% felt was fair, 87% appropriate and 95% fair, respected and satisfied.
Conclusions/Take-home messages: By collaborative working and an iterative process it is possible to introduce a national selection process that has face validity and is acceptable.

9J/SC2
What model should we use for selecting specialty trainees in the UK? A trainees’ perspective
Natalie Blencowe*, Jonathan Bloor*, Jonathan Sheffield, Andrew Hollowood (Bristol Royal Infirmary, Marlborough Street, Bristol BS2 8HW, United Kingdom)
Background: Recruitment to specialty training in 2007 involved replacing the traditional interview with a 30 minute competency-based selection process. What competencies were assessed? Most trainees were appointed without formal testing of their communication, problem-solving, clinical or practical skills. Assessment centres are widely used in graduate recruitment and have been shown to be reliable and valid in selecting GP trainees.

9J/SC3
Retention of skills in procedural laparoscopic virtual reality simulator training
Mathilde Maagaard*, Jette Led Soerensen1, Torur Dalsgaard1, Bent Ottesen1, Teodor P Grantcharov1, Christian Rilbjerg Larsen1 (1Juliane Marie Center for Women Children and Reproduction, Righospitalet University Hospital, Obstetrics Department, 4221 Room 2003, Blegdamsvej 9, Copenhagen, Denmark, 2Department of Surgery, University of Toronto, St. Michael’s Hospital, Toronto, Canada)
Background: Several studies have demonstrated the construct and contrast validity of the LapSim virtual reality (VR) simulator and transferability to real operations. However the durability, or retention, of acquired skills from simulator-training is an unanswered question. The aim of this study was to assess the retention of skills in the LapSim VR simulator, 6 and 18 months after an initial training course.
Summary of results: The novices showed retention of skills following 6 months for both time and movement (p<0.01) and bleeding (p<0.04). After 18 months novices were back to their initial level.
Take-home messages: The results indicate loss of skills in the period between 6 and 18 months. The experts showed consistent performance over time. This information can be included when planning a simulation-based surgical curriculum for trainee doctors.

9J/SC4
Cognitive apprenticeship and authentic assessment: an education framework for facilitating learning and assessment within high fidelity simulated clinical environments
Karen Weeks*, Colin Torrance*, Andrew Rogers*, Peter Lewis* (University of Glamorgan, Glyntaff Campus, Treforest, Pontypridd, Rhondda Cynon Taff CF37 1DL, United Kingdom)
Background: A key driver behind the design and employment of authentic learning environments and authentic assessment is the requirement to bridge the perceived gap that exists between the processes of instruction, learning and assessment (Boud 1990, Guilikers et al 2004). Nowhere is this more critical than in the health care professions where learning and assessment schedules must support and measure the construction, synthesis and meaningful application of the knowledge, problem-solving and professional skills that underpin safe professional practice.
Summary of work: Following 16 years of research and development of computer based authentic learning and assessment environments (Weeks et al 2000, 2001, 2007), our focus has now extended to application of the underpinning education model within high fidelity simulated clinical environments. We will explore how a cognitive apprenticeship framework (Collins, Brown & Newman 1989) has been employed to: 1. Model and capture expert problem-solving processes via demonstration and use of video technology; 2. Support learning via the processes of coaching and scaffolding; 3. Facilitate articulation of learner’s knowledge and skill; 4. Support reflection upon learner performance and diagnosis of errors via comparison of student performance with expert models.
Conclusions/Take-home messages: Employment of a cognitive apprenticeship and authentic assessment model offers a robust and practical education framework for supporting learning and assessment within simulated clinical environments.
Summary of work: We conducted structured interviews with professionals from legal, accountancy, banking and management backgrounds about their selection processes.

Summary of results/Conclusions: Commercial employers utilise a variety of different selection methods in their recruitment processes. Candidates undergo psychometric testing, assessment of problem-solving and presentation skills as well as structured interviews, in an assessment centre setting.

Take-home messages: Tooke's Inquiry has recommended that the use of assessment centres is considered. Assessment centres allow candidates to demonstrate their skills: in order to provide best patient care we must train the best consultants, and therefore need to select the right candidates into specialty training. For years, commercial employers have selected trainees by this method in order to ensure the ongoing success of their businesses. We propose the development of specialty-specific assessment centres and have formulated a recruitment model to bring selection into the 21st century.

9J/SC3
MTAS and assessment of final-year medical students’ potential as doctors
Barnaby D Hole, David J Cahill* (Centre for Medical Education, University of Bristol, 41 St Michael’s Hill, Bristol BS2 8DZ, United Kingdom)

Background: In the UK, a national ranking scheme (MTAS) for pre-registration doctors has been introduced, with scoring of written application forming an integral part of the process. With the premise that those students with the greatest likelihood of becoming high-achieving doctors should have the best chance of getting their first-choice rotation, we set out to examine whether MTAS identifies candidates with qualities and skills associated with being a good doctor.

Summary of work: We designed an OSCE to assess vital F1 skills and compared the results obtained with the academic and vignette components of the MTAS score obtained by a group of final-year medical students.

Summary of results: In our results, there was no significant association between the OSCE total and MTAS vignette scores, OSCE total and MTAS total scores, or OSCE total and MTAS quartile scores.

Conclusions: Published data suggest OSCE achievement predicts future performance as a doctor. In this study, no relationship was found between OSCE and MTAS scores, suggesting MTAS is a poor predictor of future performance.

Take-home messages: MTAS may not, therefore, be a fair system by which to place or stratify graduating medical students. Our data do not support the use of the MTAS application system.

9J/SC4
Competency based selection for Specialty Training in Obstetrics & Gynaecology within South Yorkshire and Humber Deanery: An inter-rater (assessor) agreement study of an OSCE-format assessment centre
Joy Marriott*, Bolarinde Ola, Peter Stewart, Tom Farrell (Sheffield Teaching Hospital NHS Trust, Jessop Wing, Tree Root Walk, Sheffield S10 2SF, United Kingdom)

Background: Competency based selection for postgraduate training is relatively new in the UK. The challenge of selecting suitable candidates for run-through Specialty Training can be met by development of robust selection processes which focus on job related competencies. We report the inter-rater (assessor) agreements for the exercises used in our assessment centre for recruitment into Obstetrics & Gynaecology.

Summary of work: The selection process for candidates applying for Specialty Training levels 1, 2 and 3 included four OSCE-format exercises and a short structured interview. 79 candidates were assessed. The exercises were developed to map to the National Personal Specifications for each ST level outlined by the Royal College of Obstetricians and Gynaecologists (RCOG).

Summary of results: The OSCE exercises at ST1 and ST3 levels showed moderate to very good assessor agreement (Kappa 0.55-0.81). At ST2 level, the exercises demonstrated good assessor agreement except for the practical suturing exercise (Kappa 0.32). Positive agreement between assessors was found at the interview station at all ST levels.

Conclusion: Our results show good assessor agreement for the majority of exercises used at our assessment centre.

Take-home message: Our study supports the reliability evidence for assessment centres in competency based selection for run-through Specialty Training.

9J/SC5
Performance of medical students in an objective, structured clinical examination (OSCE) used in the selective process for Medical Residency Programmes
Rui C Mamede*, Carlos G Carlotti-Junior, Luiz de Souza, Ana Paula CP Carlotti*, Maria de L V Rodrigues, Luiz Ede A Troncon* (Medical School of Ribeirao Preto, Av. Bandeirantes, 3900 - Campus Universitário, Campus USP, Ribeirao Preto - SP 14048-900, Brazil)

Background: Since 2004, our University Hospital has been using an OSCE, in addition to a cognitive, multiple choice question (MCQ) test, in the admission process for Medical Residency Programmes.

Summary of work: Aiming at comparing the performance of candidates regarding the MCQ and OSCE exams, the scores of 483 students were analyzed. The students’ performances were compared regardless of the origin of the student, by the t test.

Summary of results: The average scores were higher in OSCE than in MCQ (p<0.001). The relationship between MCQ and OSCE was evaluated through Linear Regression, which yield an estimated correlation coefficient of 0.55 (p<0.001).

Conclusion: Published data suggest OSCE achievement predicts future performance as a doctor. In this study, no relationship was found between OSCE and MTAS scores, suggesting MTAS is a poor predictor of future performance.

Take-home messages: MTAS may not, therefore, be a fair system by which to place or stratify graduating medical students. Our data do not support the use of the MTAS application system.

9J/SC6
The national exam for applicants to medical residencies in Mexico: a high-stakes assessment conundrum

Background: The selection process for applicants to medical residencies in Mexico is competitive, and coordinated by an interinstitutional committee. The selection instrument (the ENARM test) is a 600 multiple-choice question test that is applied yearly, and is taken by 25,000 physicians for 6,000 slots. UNAM Faculty of Medicine has 50% of the residents in the country. This report describes an opinion survey about the ENARM test in our residents.
Summary of work: The survey had 54 questions and statements that explored demographics, perceptions of equity and fairness, security issues and test educational value. The anonymous survey was sent to 6,807 residents, with a response rate of 56.8% (3,869 residents).

Summary of results: The major findings were: the exam has limited social credibility; there is a high perception of security leaks; there is a need to increase the validity evidence and quality control of the test development and implementation processes; the applicants desire a more value-added examination.

Conclusions: The ENARM test needs to be developed following international standards of quality for objective assessment tests. The institutions that interact in the residency selection process need to develop a strategic planning initiative, to decrease the negative effects of the test.

Take-home messages: High-stakes exams in developing countries have an important impact in the healthcare and medical education system.

9K Teachers and educators

9K/RP2
Assessment of professional behavior in medical educators: development of an evaluation tool with student and faculty input
Sarah Todhunter (Southmead Hospital, Bristol, UK), Sylvia Cruess, Richard Cruess*, Yvonne Steinert (Centre for Medical Education, McGill University, 1110 Pine Ave. W, Montreal, Quebec H3A 1A3, Canada)

Research Question: How to evaluate the professionalism of medical teachers? To develop a tool to improve the teaching environment by addressing unprofessional behavior of faculty.

Context: The professionalism of physicians in contemporary society is threatened by failures of the profession and health care systems which often subvert professional values. In response, the teaching and evaluating of professionalism has become a priority in medical education and training. A barrier to the transmission of the values of professionalism is the unprofessional conduct of teachers.

Methods: To develop a tool to evaluate the professionalism of medical teachers, the attributes and behaviors of professional behavior were identified in the literature and through focus groups with faculty and students. The Social Responsibility Skill Assessment (SRSA) was developed to assess the professionalism of medical educators. The SRSA is a 54-item instrument that assesses the professionalism of medical educators.

Conclusion: The SRSA is a valid and reliable tool to evaluate the professionalism of medical teachers. It provides a framework for improving the teaching environment by addressing unprofessional behavior of faculty.

9K/RP1
How do effective medical education leaders perceive their practice?
Susan Lieff*, Mathieu Albert (University of Toronto, St. Michael’s Hospital, Centre for Faculty Development, 2 Queen Street East, Suite 908, P.O. Box 15, Toronto M5C 3G7, Canada)

Research Question: The goal of this study was to understand how effective medical education leaders conceive their work. Utilizing Bolman and Deal's typology of perceptual frames for viewing organizational work, this study examined and described the frames through which medical education leaders perceive their endeavours.

Context: Medical education programs are fundamentally changing in response to external pressures, health care reforms and interest in curricular improvement. These changes require that medical school faculty members take leading roles in educational development. How a leader perceives their organization greatly affects their beliefs about the best way to influence it. The challenge for medical education leaders is to develop a facility in viewing their work through multiple frames in order to enhance their effectiveness.

Methods: 16 medical education leaders in the Faculty of Medicine at the University of Toronto were interviewed. The sample was purposefully selected to represent different educational practice contexts and departments in order to ensure a diverse overview of experiences. Their mean age was 52 years (39-67) and 10 were male. They had been in their current leadership positions for an average of 5.6 years (0.5 -14). Each subject was interviewed twice to elaborate on their perspectives, roles, functions and abilities.

Transcripts, supplemented by the interviewer's field notes, were analyzed using the theoretical framework of Bolman and Deal. 14/16 of these leaders utilized all cognitive frames to a greater or lesser extent and often applied them beyond the formal boundaries of their educational units. The human resource perspective was favoured by all participants followed closely by the cultural (14/16), and political (14/16). Although most attended to the structural frame (13/16), only three had any significant emphasis on it. The contribution of context was not sufficiently robust to distinguish the groups' use differential use of frames. The undergraduate and postgraduate education leaders often considered the students as organizational members. In addition to validating and describing the elements of this typology for leadership in medical education, a number of new themes emerged that added additional dimensions to the typology. These included assessing interpersonal and work style in order to make decisions about how to socially situate individuals most effectively and the importance of credibility and how it is constructed.

Conclusion: The robust findings that support the use of this framework can be explained by the focus on the "usual" work of these leaders as well as the exploratory methodology. This study illuminates that effective medical education leaders are indeed reflective practitioners. The value of reflecting on interpersonal and group issues in their practice builds on this typology. The contribution of educational context to frame selection could not be determined. The alignment of their reports with their actual practice is also not clear. Further studies would benefit from observations and interviews of medical education leaders as well as a larger sample size to identify any context specific issues. Additionally, parameters for determining leadership effectiveness need to be defined. This study uniquely contributes by validating the utility of the Bolman and Deal typology in the medical education context. It supports the value of leaders reflecting on their work from a variety of perspectives to enhance their educational practice. It behoves medical education leadership development programs to incorporate curricula that develop these perceptual skills.

9K/RP3
Analysis of a national survey on the ENARM test

Summary of work: The study had 54 questions and statements that explored demographics, perceptions of equity and fairness, security issues and test educational value. The anonymous survey was sent to 6,807 residents, with a response rate of 56.8% (3,869 residents).

Summary of results: The major findings were: the exam has limited social credibility; there is a high perception of security leaks; there is a need to increase the validity evidence and quality control of the test development and implementation processes; the applicants desire a more value-added examination.

Conclusions: The ENARM test needs to be developed following international standards of quality for objective assessment tests. The institutions that interact in the residency selection process need to develop a strategic planning initiative, to decrease the negative effects of the test.

Take-home messages: High-stakes exams in developing countries have an important impact in the healthcare and medical education system.

Research in Medical Education Papers
The revised list of 35 behaviors was circulated to 40 members of McGill's Center for Medical Education who rated each behavior as “must be evaluated”, “should be evaluated”, “nice to have evaluated”, “not important”, and “not observable”. The behaviors plus an additional category of “not comfortable to assess” was given in paper format to 57 3rd year medical students. Using a Likert Scale (1 = strongly agree. 5 = strongly disagree), students were asked a series of questions listed in the table below. The data were used to determine inclusion in the form.

**Results:** Fifteen items were retained in four domains with the “community relations” being dropped because of low ratings. With strong support from the literature, a sixteenth item, “does not allow lifestyle to impair function” was included. Doctor-patient relationship, containing the two highest ranking items, was scored most highly by both medical educators and students. Students placed greater emphasis on the assessment of the doctor-student relationship than medical educators, who rated the importance of inter-professional relationships higher than did students. Student ratings indicated the following:

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>(SD)</th>
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</thead>
<tbody>
<tr>
<td>It is important to assess the professional behaviors of teachers</td>
<td>4.33</td>
<td>0.78</td>
</tr>
<tr>
<td>It is important for students to assess the professional behaviors of teachers</td>
<td>4.25</td>
<td>0.85</td>
</tr>
<tr>
<td>I would be comfortable assessing the professional behaviors of my teachers</td>
<td>3.98</td>
<td>0.96</td>
</tr>
<tr>
<td>I think this assessment would be beneficial to faculty performance and behavior</td>
<td>4.02</td>
<td>0.91</td>
</tr>
<tr>
<td>I am concerned about the impact of this assessment on myself</td>
<td>3.03</td>
<td>1.11</td>
</tr>
<tr>
<td>I would wish my evaluation to remain anonymous</td>
<td>3.43</td>
<td>0.94</td>
</tr>
</tbody>
</table>

80.7% wished clear and specific questions and 70.1% wished them to be short. Most suggested that the maximum number of questions should be no greater than 20 and 40.7% declared a preference for computerized forms versus 22.8% for paper. 80.7% stated that anonymity would encourage the completion of the form.

**Conclusion:** The ratings of the importance of professional behaviors are similar to others in the literature. The method of developing the tool provided content and face validity and the discrepancy between students and educators is undoubtedly due to differences in their professional development. The method reported to develop a rating tool using behaviors consistent with those associated with professionalism in the literature had input from both students and medical educators. The method should increase its acceptability with both groups.

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9K/R3

**Developing teaching competencies: the clinical teacher's perspective**

**Luc Côté, Marie Desmartis, Patricia-Ann Laughrea, Anne Rousseau, Gaetane Routhier, Johanne Théorêt (University of Laval, Faculty of Medicine, Centre for Educational Development, Quebec G1K 7P4, Canada)**

**Research Question:** Describe how junior and senior clinical teachers in medicine develop their teaching competencies. Specific objectives: 1) To describe personal and other factors related to the development of teaching skills in junior and senior clinical teachers; 2) To describe the difficulties (experienced and apprehended) related to the development of teaching skills; 3) To identify what changes or improvements clinical teachers would find most useful to their professional development as teachers.

**Context:** Clinical teachers (or preceptors) must simultaneously foster high-quality patient care and assess the clinical skills and reasoning of learners in order to foster their progress toward independence in the clinical setting. Often, clinical teachers are hired according to their medical expertise and their interest for teaching, even if they have not received a formal educational training. However, it seems that the development of teaching competencies of experienced clinical teachers is a complex process involving different means.1 But this process need to be better understood in junior and senior clinical teachers in order to improve student education.

**Methods:** In 2006-2007, a qualitative study was done with 33 junior and senior clinical teachers from Laval University (Quebec, Canada) involved in the clinical training of residents in family medicine, medical specialties and surgical specialties. They were recruited according to a specific selection process, based on definite criteria. An audiorecorded semi-directed individual interview was conducted with each participant. The full verbal content of each interview was transcribed. The thematic content analysis was done according to the recognized steps in grounded theory, including the triangulation of researchers.2

**Results:** In general, there were no differences between junior and senior clinical teachers but a few between preceptors in family medicine and their colleagues in specialties. Most of the physicians were able to identify how they had developed their skills as clinical teachers and identified positive and negative factors in this development. The observation of teachers as role models during the medical training, and learning by doing during practice, were highly reported by medical specialists. Clinical teachers in family medicine are different from their colleagues in the specialties because of 1) their strong participation in faculty development workshops on teaching and 2) the importance of teaching discussions with their colleagues in the daily practice. Among the most important factors supporting the teachers' development were personal factors (e.g. the strong interest in teaching) and factors from context (e.g. better organization of clinical teaching and networking, financial support and faculty development workshops). Lack of time because of clinical tasks, and of support in their teaching were the most negative factors reported. The problem with financial support was reported by many clinical teachers in the specialties but not in family medicine. Many suggestions were made for facilitating the development of physicians as teachers, particularly for junior clinical teachers; for example, their participation in faculty development workshops on clinical teaching and individual educational mentorship.

**Conclusion:** Results shows that the development of teaching competencies is a complex personal and social construction in which personal and contextual factors may play a positive or a negative influence for junior and experienced clinical teachers. Considering the importance reported by participants about learning by doing, learning from peers and learning by participating in faculty development workshops in a context where they have to deal with the lack of time, more research is needed to clarify the findings about the contribution of this type of learning in the professional development as clinical teachers.

This research has received the financial support of the Royal College of Physicians and Surgeons of Canada.

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9L/SC1

Can peer-assisted learning by medical students enhance clinical skills training in Psychiatry?

Joanne Burke*, Ricky Caplan, Max Field (University of Glasgow, The Wolfson Medical School Building, University Avenue, Glasgow G12 8QQ, United Kingdom)

Aims: To determine whether peer assisted learning (PAL) can assist with clinical examination skills training in psychiatry.

Summary of work: Eight year-5 student trainers studied PAL, small group theory and clinical history and examination skills in psychiatry. These students recruited and trained 107 year 5 volunteer trainees. Trainees were evaluated using pre/post confidence questionnaires (100mm visual analogue scale), a course experience questionnaire (5-point Likert scales) including free text comments, end of year Objective Structured Clinical Examination (OSCE) and a semi-structured nominal group technique.

Summary of results: After training a statistically significant difference was observed in all components of psychiatric assessment, <39 to >77 (p<0.0001) with all students recommending PAL. Course experience questionnaires demonstrated benefits in all parameters including communication skills and group work. Free text comments showed that PAL trained students perceived this learning experience as positive. End of year OSCE examination results showed that students NOT undergoing PAL training were 1.6 times more likely to fail compared to controls. Focus group analysis confirmed that the sessions were of high quality and well structured.

Conclusion: This study shows that PAL can improve psychiatry training and has the potential to be incorporated into the medical curriculum to enhance clinical skills.
9L/SC2
Cross-year peer tutoring on internal medicine wards: a randomised controlled trial
C Nikendei*, S Andreesen, K Hoffmann, N Koehl-Hackert, J Jünger (University of Heidelberg Medical Hospital, Department of General Internal and Psychosomatic Medicine, Im Neuenheimer Feld 410, 69120 Heidelberg, Germany)

Background: Peer-assisted learning (PAL) has become an established and well-accepted teaching method in medical education that offers a variety of advantages for both learners and peer-tutors.

Summary of work: In a controlled study we evaluated a cross-year peer tutoring program at the Medical Hospital of the University of Heidelberg for medical students in their third year of training using final year students as tutors. We compared an intervention group (n = 88) that received the 10 patient-centred tutorials and a control group (n = 80) that did not take part in the PAL program.

Summary of results: The on-ward PAL program has been shown to be very well accepted by both peer tutors and students. Group comparisons of post-intervention self-assessed clinical competencies revealed a differentiated pattern of significant and non-significant effects, which was clearly reflective of the medical curriculum on offer at the Medical Hospital. The intervention group reported significantly greater learning effects (p<.0001), feeling significantly more integrated on ward (p<.0001) and significantly less anxiety concerning on-ward work as a medical doctor (p<.0001; manuscript in preparation).

Conclusions: We conclude that PAL programs conducted on ward represent a particularly valuable tool for supporting medical students, especially in light of findings that the supervision of students performing clinical competencies in clerkships is rare.

Take-home messages: While peer tutors are no substitution for instruction or supervision by a qualified physician, the potential of PAL programmes on ward is promising and should be built upon.

9L/SC3
'To teach is to learn twice' - the positive effects of PAL
Lisa Anderson*, Barbara MacSween, Janette Moyes, Val McDowall, Stephen Lynch, Janet Skinner (University of Edinburgh, Clinical Skills Centre, Chancellor's Building, 49 Little France Crescent, Edinburgh EH16 4SB, United Kingdom)

Background: Simulation based clinical procedures training is effective and should act as an adjunct to the consolidation of clinical skills on patients. Peer assisted learning (PAL) has been proven to improve clinical skills. However little evidence exists as to whether this develops into clinical competence.

Summary of work: Previously, the competence of PAL tutors in terms of performing clinical skills has been assessed within a simulated environment prior to their PAL tutoring. A standardised marking schedule was used and the majority of students excelled. Assessment of tutors for the 2008 project occurred within the clinical environment using the same marking structure. The majority failed to perform competently. Support and structured feedback was given to each tutor.

Conclusion: Clinical assessment of the PAL tutors has confirmed that they find the transfer of skills from a simulated to a clinical environment challenging. Following the tutorials, tutors will be reassessed within the same setting to ascertain if the experience of PAL tutoring has increased their competence and confidence to seek out clinical opportunities.

Take-home message: Students require support developing and consolidating their competence in practical skills clinically. PAL tutoring may help to provide a framework to enable this.

9L/SC4
A peer assisted learning (PAL) approach to teaching medical students basic surgical skills. A novel and successful technique
M Keogh*, D Foreman*, J Findlay, P Drew (Derby Hospitals NHS Foundation Trust, Uttoxeter Road, Derby DE22 3NE, United Kingdom)

Background: The benefits of peer assisted learning (PAL) are recognised across numerous areas of medical education. No literature currently exists as to the effectiveness of PAL in teaching and developing the surgical skills of medical students. This study explored the effectiveness of F1 doctors writing and teaching a pilot surgical skills course to senior medical students.

Summary of work: The course comprised 6 sessions covering the theoretical and practical components of: Surgical scrubbing and patient positioning; Basic instrumentation and electrosurgery; Suturing & Knot tying; Laparoscopic surgery; Minor Surgery. Each student sat a case-based online assessment prior to each session. A baseline score was recorded for each student which was then compared with their results when re-sitting the same on-line assessments. A pass/fail practical OSCE session also occurred during the final session.

Summary of results: A clear improvement in online assessment scores was noted for each area of content. Scrubbing & Patient positioning: 24.9%; Basic Instrumentation: 4%; Suturing & Knot tying: 21.8%; Laparoscopy: 23.5%; Minor surgery: 58.6%. All 16 students also passed the summative practical OSCE.

Conclusions: Our course used the principles of PAL to significantly improve the overall knowledge and basic surgical skills of senior medical students. We feel that the PAL approach to Surgical skills teaching should be utilised more thoroughly in Surgical Education.

9L/SC5
Peer-led ethics teaching
Laura J Minchell*, Hannah Kither*, Faieza Qasim (Manchester Royal Infirmary, Undergraduate Education Centre, Central Manchester and Manchester Children’s University Hospitals, Oxford Road, Manchester M13 9WL, United Kingdom)

Background: Clinical practice often presents moral dilemmas, yet compulsory ethics teaching is not a substantial element of many undergraduate medical curriculums. We sought student opinions of a peer-led ethics teaching initiative.

Summary of work: The format constituted a short lecture, followed by group discussion of specific scenarios; events were conducted by final-year students and supervised by consultants, general practitioners, ethicists and lawyers. Scenarios encouraged debate of key issues such as autonomy, confidentiality and competency. Attendees of two separate events were asked to complete two questionnaires, rating opinions of teaching and understanding of basic terms between 0-poor and 5-excellent.

Summary of results: Of 34 students, 100% stated they would attend again and 88% thought that ethics teaching should be compulsory. Students felt their understanding of basic terms improved; average scores improved for all terms, the largest increase being 1.56 points.

Conclusions: Medical students recognise the importance of ethics teaching and feel this should be compulsory in undergraduate education. Students and supervisors valued the peer-led discussion-based approach.
Take-home messages: Peer-led discussion-based teaching encouraged a lively and enjoyable debate, whilst increasing knowledge and preparing students for challenges they will face as clinicians. Involvement of experts from different disciplines ensured a rich discussion.

Short Communications
9M Criteria for admission to medicine

9M/SC1
A national view regarding the selection of medical students
Claire Byrne*, Margaret Bearman, Mary Lawson (Australian & New Zealand College of Anaesthetists (ANZCA), 630 St Kilda Road, Melbourne 3004, Australia)

Background: Selection criteria for Australian medical schools have changed over the last fifteen years and selection of medical students has been reported as being contentious in the Australian press.

Summary of work: The Australian Medical Education Study surveyed medical students, junior doctors, clinical educators and employers of junior doctors across the nation, regarding their views on selection (N = 3382). Focus groups and interviews were also conducted.

Summary of results: 86% of medical students, 93% of junior doctors and 67% of educators and employers reported themselves as ‘satisfied’ or ‘very satisfied’ with selection processes in Australian medical schools. However, it was also an area of concern – analysis of educators and employers’ open-ended comments regarding ‘the biggest challenges facing medical school’ indicated that selection was a significant issue for a large minority. The focus group and interview participants identified that some graduates were ill suited to clinical practice but in general did not regard selection as the most significant contributing factor.

Conclusions: In Australia, the majority of respondents to a large-scale survey study regard the selection of medical students favourably. Take-home message: Empirical results suggest that concerns about selection of medical students are not universal.

9M/SC2
Performance of postgraduate medical students compared to undergraduates at Leicester Warwick Medical School – a large quantitative study
T Haldane*, M Shehmar*, A Price-Forbes, C McDougall, I Fraser, S Peterson, E Peile (Warwick Medical School, Warwick University, Coventry CV4 7AL, United Kingdom)

Background: Leicester-Warwick medical school (LWMS) provides a unique situation to compare graduates and undergraduates on the same course with identical curriculums but different entry criteria to each site.

Summary of work: A quantitative cohort study over a four year period was conducted to see if there was a difference in performance between undergraduates (Leicester) and graduates (Warwick) at LWMS. The cohorts graduating in 2006 were compared. Ethical approval was granted by the local ethics committee. Results of the intermediate clinical examination (ICE) and final professional examination (FPE) were collated.

Summary of results: ICE - 100 Leicester and 135 Warwick students were included in the analysis. Mean total scores were 63.45 (range 42-88, SD 8.383) and 59.50 (range 42-76, SD 8.383) and 59.50 (range 42-76, SD 6.910 respectively. This difference was significant with P=0.000. FPE - 98 Leicester and 135 Warwick students were included in the analysis. Mean total scores were 63.45 (range 116-205, SD 14.967) and 59.50 (range 42-76, SD 12.821) respectively. This difference was not statistically significant (p=0.115).

Conclusions: The results show that undergraduates (Leicester) performed significantly better in ICE. This difference diminished by the time students took FPE.

Take-home messages: An analysis of factors contributing to these results will be presented.

9M/SC3
Predictive value of admission variables for medical school performance
Matus Olga, Ibanez Pilar, Ripoll Manuel, Palacios Silvia, Quiroga Pilar*, Torres Graciela, Fasce Eduardo (Universidad de Concepcion, Facultad de Medicina, Barrio Universitario S/N, Chile)

Background: Chilean research about predictive value of variables measured at application to university for academic performance, has studied only preclinical years performance. Clinical competences performance may need different cognitive skills than those measured at entrance in Chilean Universities. We propose to assess predictive factors for good academic performance in the whole curriculum, evaluating the predictive value of variables measured at admittance to university: High school Grades (HSG), Global Admission Score (GAS) and biodemographics characteristics (BDC), starting with the 2003 cohort.

Summary of work: In 102 students (2003 cohort), HSG, GAS, and BDC were compared to academic performance. Analysis: Central measures, percentiles and r Pearson correlation.

Summary of results: For first years, GAS was a better predictor (r0.42, p: 0.0001) vs HSG (r: 0.33, p: 0.01). In second and third year both had similar predictive value, as also in the pooled analysis of the three years. No correlation between biodemographics variables and academic performance was found.

Conclusion: Both HSG and GAS are good predictors of academic performance in this cohort, concordantly with results founded in other studies.

Take-home message: The ongoing analysis of 2003 and 2004 cohorts’ data regarding their clinical academic performance will clarify their predictive value for clinical competences.

9M/SC4
Developing a faculty profile of key competencies required for success at medical school, Dresden
A Graupner*, M Hänsel (Medizinische Fakultät Dresden, Fetscherstr. 74, Dresden 01307, Germany)

Background: Since the legal situation changed in 2004, each university now has the possibility to self-select 60 percent of their students. The student selection process was put under the supervision of a psychologist to soundly establish its principles.
Summary of work: The primary research tools were a series of interviews with experts and student questionnaires using CITs (Critical Incident Technique), as developed by Flanagan. From a set of 284 reported experiences with CITs (107 students), 11 key areas of competence were identified by the SRC (Student Representative Council) as essential for success in medical studies. Following this, a group of 27 professors from within the university were interviewed. This group identified 23 such areas of competence. Our group merged these two sets of data and compiled a single set of criteria for selection, in effect a profile for success. The merged set contained 25 criteria and these were in turn ranked according to their importance. The resultant profile is now being used to develop the university’s selection instruments and also to guide the development of teaching methodologies in the future, to best implement the curriculum.

9M/SC5
Correlation between admission criteria and the subsequent academic performance in a medical school
S I Mahmood*, I Bin-Jaliah, Ashish Kumar, G Ponnamperuma, M Davis (College of Medicine, King Khalid University, P.O.Box 641, Abha 61421, Saudi Arabia)
Background: Medical schools need selection procedures that are evidence based and legally defensible. The present study was structured to assess the strength of relationship between the admission criteria and academic performance of students which have been addressed previously by other authors considering alternative variables.
Summary of work: This was a retrospective longitudinal study using results of five MBBS batches at Baqai Medical School. The aggregate scores of Secondary school certificate (SSC), Higher school certificate (HSC) and aptitude test (pre-admission variables) were correlated with aggregate scores in first, second, third and final professional exams (post-admission variables). The predictive validity of the SSC, HSC and aptitude test scores were also explored. Statistical analysis was carried out using SPSS version 10 software.
Summary of results/Conclusions: The null to low correlations between pre-admission variables and post-admission variables found in this study suggest that the current selection methods employed were affecting the screening process and would subsequently be poor predictors of students' academic performance during the five year medical course.
Take-home messages: Admission predominantly on the basis of previous academic performance can be biased and presumptuous generating a preferable need to develop and apply congruently agglomerated and validated multiple selection tools.

9N/SC2
The role of multi-professional teachers in undergraduate medical student musculoskeletal skills teaching
L McCartney*, T Hough, C Dainty (St Helens and Knowsley Acute Trust, Warrington Road, Prescot, Liverpool L35 5DR, United Kingdom)
Background: Musculoskeletal teaching is an essential aspect of undergraduate medical education, traditionally delivered by orthopaedic teachers. This work explores a model of interactive multi-professional delivery of musculoskeletal skills, including physiotherapy practitioners and general practitioner involvement.
Summary of work: A 6 week modular course was developed to cover essential large joint anatomy, physiology, examination and common conditions affecting those joints. A range of activities were included and groups of medical students facilitated by experienced teachers to explore various aspects of required skills.
Summary of results: Pre and post-course self assessment and a knowledge based assessment were undertaken by the students. Results were analyzed using an SPSS package. A further assessment of the teaching was also undertaken. Themes included: Knowledge of anatomy; Examination of joints; Documentation and nomenclature of joint movement; Ability to self-recognize strengths and weaknesses in musculoskeletal skills.
Conclusions: Students appear to improve a range of skills during teaching. The inclusion of physiotherapy practitioners and general practitioners can support and participate in delivering musculoskeletal teaching packages.

9N/SC1
To group or to team? Finding the right teaching format for postgraduate medical and multiprofessional education
Carmel Keller, Gail Louw, Jim Price, Deborah C Saltman* (Institute of Postgraduate Medicine, Brighton and Sussex Medical School, Mayfield House, Falmer, Brighton BN1 9PH, United Kingdom)
Background: Team learning is an effective vehicle for health training and it remains the arrangement of choice. Little has been done to establish why a team, and which version, is the most appropriate. We argue that team structures, which are useful in undergraduate education may be less useful than group structures in postgraduate and continuing education which allow for more task focused support and collegiality.
Summary of work: We will present the analysis of style of teaching (group, team, other) and match it with student outcomes over the last seven years of postgraduate education programmes at the Institute of Postgraduate Medicine, Brighton and Sussex Medical School.
Conclusions: Achievements, completion rates, subsequent vocational pathways and overall satisfaction will be presented and inferences about the effect of teaching format will be drawn.
Take-home message: University-based first degree programmes for health professionals are taught to students who are “homogenised” by achievements in universal entry criteria. In postgraduate medical and multiprofessional education students may not be homogeneous. Performance goals are met through individuals doing their own work. Group approaches may be more appropriate, less risky and disruptive for postgraduates.
9N/SC3

Interprofessional education in a district general hospital: design, implementation and evaluation, a one year experience

J Horwood*, J Jetson, A Bhamwic (North Wales Clinical School, Bangor University, Glan Clwyd Hospital, Bodelwyddan, Rhyl LL18 8SJ, United Kingdom)

Background: The DOH, GMC and CHMS have published support for developing interprofessional education (IPE) programmes. However, robust and reproducible templates for IPE have not been adopted widely. We present our experience in the development of a novel model for IPE combining clinical problem solving scenarios with small group methods, in a multiprofessional workshop environment.

Summary of work: Workshop delegates included medical, nursing, pharmacy, physiotherapy and dietetic students. Following scenario presentation, small multidisciplinary group discussions took place addressing the problems presented, forming the basis of a large group interactive session.

Summary of results: 84 students have attended workshops, completing validated evaluation questionnaires. 95% of students strongly agreed that the sessions were relevant to their practice and contributed to their professional development. 100% of students found the learning objectives met.

Conclusions: Professional boundaries become blurred as healthcare workers take on specialised roles. Undergraduate IPE encourages combined learning to promote collaborative practice in the future. By combining IPE with small group problem solving, we encourage self-motivation, promote deep learning and develop transferrable skills, which improves interdisciplinary communication and ultimately, patient care. Our novel model for undergraduate IPE is robust, cost effective and successful.

Take-home messages: IPE programmes, combining small group teaching with problem based learning, can successfully be integrated into core medical curricula.

9N/SC4

Inter-professional learning in obstetrics

D Siassakos*, L Marshall, M Epee, C Timmons, M Bailey, P Savage, T Draycott (Southmead Hospital and Bristol North Academy, Westbury on Trym, Bristol BS10 5NB, United Kingdom)

Background: Health care in the labour ward involves multi-professional collaboration. A report by the Royal Colleges of Obstetricians and Gynaecologists (RCOG) and Midwives (RCM) encourages the use of inter-professional learning strategies at an early stage in the medical and midwifery undergraduate students’ experience to enhance such collaboration.

Summary of work: We have introduced a labour seminar given by midwives and senior midwifery students. We have been randomising medical students into two groups and only one receives this. We have also been assessing the use in obstetrics of a validated (Pollard, 2005) inter-professional questionnaire.

Summary of results/Conclusions: Before the O&G attachment, students demonstrated positive self-assessment of teamwork skills and attitude towards inter-professional learning and relationships. These were even more positive after the attachment. However, their perception of inter-professional interactions was neutral and remained so, despite some improvement for both groups.

Take-home messages: UK medical students demonstrate favourable attitudes towards inter-professional learning, which further improve after exposure to labour ward situations that involve multi-professional collaboration. What remains to be seen is whether formal inter-professional learning can improve knowledge, skills, and attitudes for both midwifery and medical students, which is the aim of our next project.

9N/SC5

A mixed methods study of interprofessional learning of resuscitation skills

Paul Bradley*, Simon Cooper, Fiona Duncan (Peninsula Medical School, John Bull Building, Research Way, Derriford, Plymouth PL6 8BU, United Kingdom)

Background: The literature on interprofessional learning lacks rigour. We have used a mixed methods approach in a study of interprofessional learning of resuscitation skills.

Summary of work: Medical and nursing students were taught Immediate Life Support resuscitation skills in uniprofessional or interprofessional settings. Quantitative analysis of attitudes (RIPLS) and performance and qualitative analysis of focus group interviews were undertaken.

Summary of results/Conclusion: Performance was unaffected by professional grouping. However medical students had higher leadership ratings and led more dynamic and efficient teams. Nurses had higher RIPLS scores for roles and responsibilities; interprofessional groups scored higher for team work/collaboration and professional identity immediately post intervention but not at late follow-up. Focus groups supported IPE with perceived benefits for teamwork, communication and understanding of roles and perspectives. However there were concerns regarding inappropriate role adoptions, hierarchy issues, professional identity and the timing of IPE episodes.

Take-home messages: The study illustrates that an intervention based on common shared learning outcomes can work in terms of skills gained. Attitudes may be positively affected, though this gain may be short lived. Further work is required to examine other domains of learning and the timing and frequency of interventions.

9N/SC6

Active participation in an inter-disciplinary clinical research project designed by undergraduate students – a novel multiprofessional learning strategy for students with and without direct patient contact

E Ehrenborg*, A Brauner*, B Nordgren, C Ahlin, A C von Vogelsang, R Fisher (Karolinska Institutet, Karolinska University Hospital, Stockholm 171 76, Sweden)

Background: Development of future drugs and diagnostics demands collaboration between clinical and experimental oriented professionals. Thus, students with and without direct patient contact need to know each other and to know about one another through meaningful multiprofessional assignments that requires both theoretical and practical skills.
Summary of work: The students’ assignment is to perform an intervention study that consists of five parts; (i) designing the experimental protocol, (ii) performing the study, (iii) analysis of results, (iv) presenting the results, and (v) general discussion of results and reports. Three different student groups are involved, biomedical (experimental), physiotherapy (clinical) and nursing (clinical) students. The students design an intervention study after considering statistical aspects. The study subjects are the biomedical students (n=30). One intervention consists of a personalised training session led by physiotherapy students (n=30). The nursing students (n=20) collect blood samples before and up to 3 hours after consumption of a standardised meal. Data from two days are compared (+/-interventions). The assignment is evaluated by discussions/interviews, observations and questionnaires.

Conclusions: An inter-disciplinary clinical research project provides students with “real life” experience regarding teamwork, collaboration, roles, responsibilities and professional identity.

Take-home message: “Real life” shared learning activities facilitate understanding of each others areas of expertise.

Workshop 90  Developing high-quality multiple-choice questions to assess application of knowledge using patient vignettes

Kathy Holtzman*, Dave Swanson* (National Board of Medical Examiners, 3750 Market Street, Philadelphia, PA 19081, United States)

Background: Writing high-quality multiple choice questions (MCQs) is a challenging task. Questions often contain flaws in phrasing that provide an advantage to “test-wise” examinees; in addition, they may focus on relatively unimportant content. Reflecting worldwide shifts toward integrative curricula, this workshop will focus on writing single-best-answer MCQs 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 just 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; this item-writing manual can also be downloaded in PDF format (in English, Spanish and Russian) from http://www.nbme.org/publications/item-writing-manual.html

Structure: Interactive, seminar format that includes item-writing practice and group review of test material.

Who should attend: Medical school faculty involved in writing exams, including course and clerkship directors, members of medical education departments, and others interested in achievement testing.

Workshop 9P  Is there an international call for leadership in academic medicine?

Elza Mylona*, Larry Gruppen* (Stony Brook School of Medicine, Nichols Road, HSC Level 4 Rm 184, Stony Brook, NY 11794-8430, United States)

Background: Health care in many parts of the world is being rapidly and substantially transformed. The transformations are significantly affecting the expectations, relationships, incentives and principles in medical culture. While patient care, research and education remain the predominant areas of focus in academic medicine, the changes imposed on medical culture demand a new set of leadership competencies. Faculty development programs aimed primarily at assisting faculty in their educational role are expanding their focus. Leadership development tracks have been added to provide faculty with additional essential skills. Focusing on skills development reveals that one flavor of leadership training doesn’t fit all. Leadership must be sensitive to local and national cultures. This workshop will focus on defining how leadership in academic medicine looks in the United States today, comparing that model and assumptions to those of other countries, and understanding why similarities and differences may exist.

Intended outcomes: At the conclusion of the workshop, participants will be able to: (1) Gain a deeper awareness of the essential leadership skills required in the new culture of academic medicine; (2) Discuss strategies to address the social and cultural dimension in leadership development; (3) Share characteristics of effective development programs; (4) Discuss how and why leadership development programs might look different.

Who should attend: The session is designed for all faculty responsible for research, clinical care, education or administration.

Workshop 9Q  Portfolio of the portfolio

Mostafa Selim* (Cairo University, Kasr El Aini Medical School, Egypt), Marina Mrouga*, Iryna Bulakh* (National Medical University, Ukraine, Testing Board of Professional Competence Assessment, Ukraine)

Background: Portfolio is a proven mean for facilitating and documenting professional and personal development. Reflection is the part of the portfolio that ensures learning from experiences.

Intended outcomes: By the end of the workshop the participants will be able to: (1) Recognize the definition and components of portfolio; (2) Identify the advantages and possible limitations of portfolio; (3) Appreciate the role of portfolio in assessment.

Structure: The workshop will involve an interactive presentation about the definition and components of portfolio. Then we will imagine if the portfolio itself is submitting a portfolio for being a good assessment method, what items should be evaluated, what evidence should be provided, and in what format? The answers to those questions will be provided through group discussion and presentation of evidence from literature. Then participants will be asked to play the role of the portfolio and reflect on the provided evidence and on the role of portfolio in assessment. The workshop will be very interactive, will stimulate thinking and will confirm concepts.

Who should attend: All those who are interested in assessment.

Level: Beginners
### Workshop

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<th>9R</th>
<th>Training in research methodologies as part of medical education – an evidence-based approach to drawing up recommendations</th>
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<td>R Marz* (Medical University of Vienna, Austria), C Van Schravendijk* (Vrije Universiteit Brussel - GF, Diabetes Research Center, Unit of Protein Biochemistry, Laarbeeklaan 103, B1090 Brussels, Belgium), J J Garcia Seoane* (Universidad Complutense de Madrid, Spain)</td>
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<td><strong>Background:</strong> Heterogeneity in European medical education poses a challenge for analysis of surveys. Data analysis should not compromise the separation of facts and opinions, nor hide interesting correlates behind averages or other simplifications. The task force on Links between Medical Education and Research of MEDINE (The Thematic Network on Medical Education in Europe), organised a survey among 91 European Medical Schools. Institutional co-ordinators were asked to give facts rather than opinions and aspirations. Using Excel, a mapping methodology was developed which provides a global and individual view on the results, allows for answer pattern recognition, and gives a basis on which to formulate recommendations. Participants will receive the full Taskforce report, discuss the validity of the approach as well as the findings and assist in drawing up a refined position paper.</td>
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<td><strong>Intended outcomes:</strong> Participants will: (1) have an overview of techniques and tools that can be used to analyse and visualise findings of multi-item surveys; (2) learn how these tools were applied to a survey on the link between research and medical education; (3) gain an understanding of how survey data analysis can lead to evidence-based recommendations.</td>
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<td><strong>Level of workshop:</strong> Intermediate</td>
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### Workshop

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<th>9S</th>
<th>Working with “Entrustable Professional Activities” to help build your postgraduate curriculum</th>
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<td>Olle ten Cate*, Hanneke Mulder*, Lia Fluit* (UMC Utrecht and UMC St Radboud, PO Box 85500, Utrecht 3508 GA, Netherlands)</td>
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<td><strong>Background:</strong> Competency-based frameworks, such as CanMEDS and the ACGME framework require the incorporation of roles or key competencies into education and assessment procedures. In addition, the clinical environment presents its own conditions and restrictions. How can we make things practical? The concept of “Entrustable Professional Activities” is presented as a tool to bridge the gap between educational design and clinical practice.</td>
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<td><strong>Intended outcomes:</strong> Within an hour-and-a-half we would like to provide you with a practical and workable tool to design a competency-based clinical-workplace curriculum.</td>
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<td><strong>Structure:</strong> After an introduction, participants will subsequently (a) analyse their own clinical work environment, (b) identify one or more EPAs, (c) link these with competencies, (d) design an observation form and (d) discuss levels of supervision and conditions to be met before full entrustment can be given.</td>
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<td><strong>Who should attend:</strong> The workshop will be most helpful for those actively involved in postgraduate curriculum development, but any clinical preceptor may attend and even those involved in other workplace based training settings may benefit from this training.</td>
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<td><strong>Level of workshop:</strong> Intermediate and advanced.</td>
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### Workshop

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<th>9T</th>
<th>Small group teaching and learning: bring out the best in students and tutors</th>
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<td>Deesha Chadha*, Patricia Kokotailo* (Kings Institute of Learning and Teaching, Kings College London, 5.19 FWB, Waterloo Bridge Wing, Waterloo Campus, Stamford Street, London SE1 9NH, United Kingdom)</td>
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<td><strong>Background:</strong> Small group instruction offers opportunities for more students to be actively involved and attain meaningful lasting learning. The teacher facilitates peer learning in a group and helps students gain self direction and independence in their studies. Many tutors, however, have difficulties teaching in this setting, and fall back to didactic teaching and being the prime talker and authority in a small group.</td>
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<td><strong>Intended outcomes:</strong> a) Describe advantages and disadvantages of small group instruction; b) Participate in small group teaching techniques; c) Describe solutions to real problems encountered in small groups.</td>
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<td><strong>Structure:</strong> In a highly interactive format, theory of small group work, preparation and organization of groups, and challenges to small group teaching will be discussed. Facilitation techniques will be demonstrated, including use of room set-up strategies, dyads, group rounds, “fishbowl” demonstration, and cross-over groups. Participants will have the opportunity to share their own challenges and successful practices with the group. Using real life scenarios and critical incidents, participants will practice facilitation techniques in challenging situations.</td>
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<td><strong>Who should attend:</strong> Those interested in learning better small group facilitation techniques and in improving their current skills.</td>
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<td><strong>Level of workshop:</strong> Intermediate.</td>
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### Workshop

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<th>9U</th>
<th>Effective communication in the health professions</th>
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<td>Hannah S Kedar*, Raphael Melmed (The Hebrew University, 26 Betar St., Jerusalem 93386, Israel)</td>
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<td><strong>Background:</strong> A major change in the health professions in recent years has involved a shift in the relationship between patients and health professionals from a paternalistic orientation toward a patient-centered approach, and requires health professionals to acquire, or improve, their communication skills as an essential component of their professional competence.</td>
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**Intended outcomes:** At the end of the workshop participants will (1) become acquainted with principles of effective communication; (2) be able to apply these principles to their actual interactions with patients, patients' families, and/or team members (through role-playing that will be exercised in the workshop).

**Structure:** A model of effective communication for practicing as well as for teaching communication skills will be presented. Participants will then exercise the application of this model through role-playing of pre-prepared scenarios as well as scenarios drawn from their own experience.

**Who should attend:** Health care professionals who serve either as practitioners or as educators may benefit from this workshop (e.g. physicians, nurses, dentists, veterinary practitioners, etc.)

**Level of workshop:** All levels.

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**Workshop**

**9V Reflection and reflective practice: What does it mean for teaching and learning?**

Karen Mann*, Joan Sargeant* (Dalhousie University, Division of Medical Education, C-124 Clinical Research Centre, 5849 University Avenue, Halifax, NS B3H 4H7, Canada)

**Background:** Reflection and reflective practice are embedded, both implicitly and explicitly, in health professional education curricula. Many curricula have incorporated reflective teaching and learning activities; however, knowledge of the effectiveness of these activities, and their impact on learners, practice, and patient outcomes is still early in development. Despite this, there are consistencies and insights from the literature that can inform educational practice. A recent systematic review of the literature on reflective practice in health professional education can serve to inform strategies to translate the available evidence to educational activities.

**Intended outcomes:** Participants will (a) understand the existing research evidence regarding reflection and reflective practice; (b) identify teaching and learning strategies that reflect the evidence; (c) identify how and commit to try specific strategies in their own setting.

**Structure:** This interactive workshop will include: (1) a brief presentation of evidence regarding use and impact of reflection; (2) small and large group discussions to consider the existing evidence regarding reflection, identify and share current practices and identify potential teaching and learning strategies that are congruent with the evidence; (3) individual and group selection of strategies for participants' own settings.

**Intended audience:** Educators at all levels of education.

**Level of workshop:** All.

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**Posters**

**9W Methods of teaching and learning**

**9W/P1 Cinemeducation workshop: an innovative tool for interprofessional education: a preliminary result of application of educational theories to curriculum redesign**

Wajana Leelapattana*, Darin Jaturapatporn, Helen P Batty (Department of Family Medicine, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Rama VI Road, Rajthepi, Bangkok 14000, Thailand)

**Background:** Cinemeducation is the use of movie or video clips for educating health care professionals. In the department of Family Medicine at Ramathibodi Hospital, Bangkok, cinemeducation is used rarely and is treated as a lecture. This study reported the preliminary result of the application of the new format of a theory-based cinemeducation workshop.

**Summary of work:** On 21 March 2007 we showed a clip from the movie ‘The Break Up’ as a pilot modified cinemeducation session. The 17-minute clip was chosen to help the participants learn about domestic violence, couple conflict and communication skills in couples. Following the clip, the facilitator generated a small group discussion. After the discussion, participants received a mini-lecture on how to work with conflicts in couples and on domestic violence. The lecture introduced the concepts of couple violence and of communication skills in couples

**Conclusion:** This tool could be applied to a range of areas of practice to promote collaborative learning and continuing medical education.

**Take-home message:** Cinemeducation is an interesting way of illustrating psychosocial problems in health care. In addition, a variety of health care professionals should be included in a session to make it more interprofessional.

**9W/P2 Teaching and evaluation methods in clinical year medical students**

Thumnop Tunmitisupawong*, Kosa Sudhorn, Sa-ang Dansawang (Naresuan-Buddhachinaraj Medical School, 90 Srithamtripidok Road, Muang District, Phitsanulok 65000, Thailand)

**Background:** Many methods of teaching and evaluating have been used for different reasons. Identifying their characteristics is a potential way to improve learning outcomes for medical students.

**Summary of work:** 105 of 4th and 5th year medical students (83.3%) were enrolled after Pediatric Department rotation. Questionnaires about their attitude in 4 teaching methods including lecture-based learning (LBL), team-based learning (TBL), problem-based learning (PBL) and student as a teacher were studied in term of learning content, time consuming, stress, preference and understanding. Four evaluating methods including MCQ, CRQ, OSCE and portfolio assessment were studied about stress, examination ability, confidence and the assumption of result. The statistical analysis used student t-test with significant level at p<0.05.

**Summary of results:** With regard to teaching method: LBL score was significantly high in preference (p=0.02) and learning content (p=0.02), TBL score was significantly high in preference (P<0.01) and understanding (p=0.01) but PBL score was significantly low in preference (p=0.01) and time consuming (p=0.01).
With regard to the evaluation method: OSCE score was significantly high in stress (p=0.03) while portfolio assessment score was low (p=0.01) and no significant difference in examination ability, confidence and assumption of result.

Conclusions: LBL and TBL were preferable because of content and being more understandable but due to it being very time consuming, PBL was less preferable. In evaluation method, the students were more stressed in OSCE than others.

Take-home messages: There are different advantages in each kind of learning and evaluation method that can make the students achieve the goals of the learning outcome.

9W/P3
Favorable learning activities and human resources for medical students

Apichart Chunthra*, Kosa Sudhorm, Sa-ang Dansawang (Naersuan-Buddhachinaraj Medical School, Budhashinaraj Hospital, Sriammatrpidok Road, Phitsanulok 65000, Thailand)

Background: There are many learning activities and human resources of knowledge for medical students. Their attitude about the knowledge they gained from each kind of learning activity and human resource may be helpful to improve the teaching program.

Summary of work: Sixty-five 4th year medical students (98.5%) and thirty-eight 5th year medical students (58.5%) were enrolled. The questionnaires ranked scores from 0-5 about their attitude for 7 learning activities (lecture, ward round, morning report, teaching round, OPD, on duty, and patient reports) and 6 human resources of knowledge (Pediatric staffs, resident, 6th year medical students, 5th year medical students, nurses, and patients) were listed. The statistical analysis use student t-test.

Summary of results: In both groups, lecture and teaching round were statistically significantly more favorable than other activities (p=0.01, p=0.01), pediatric staff and patients were statistically significant only in 4th year students group (p=0.01, p=0.04).

Conclusions: Lecture and teaching round were more favorable learning activities for medical students in our study. Pediatric staff and patients were more interesting human resources.

Take-home message: Each kind of learning activities and human resources were useful if we use them properly.

9W/P4
Darkness Visible — fiction in the service of medical education

Irma Virjo*, Hanna-Mari Alanez*, Amos Pasternack* (University of Tampere, Medical School, FIN-33014 University of Tampere, Finland; ‘Hatapää Park Hospital, Psycho-Geriatric Department, Tampere FIN-33014, Finland)

Background: We built a learning entity with the aim to increase the students’ understanding of the experiences of a depressive patient, which is otherwise difficult.

Summary of work: Students read “Darkness Visible” by William Styron during the summer. At the start of autumn term students answered in writing questions regarding the book. The answers were collected in a meeting in which 25 students and three teachers took part and discussed thoughts aroused by the book. Finally the students completed an evaluation form.

Summary of results: Of the students (n=99) 80% evaluated the learning entity as rather good or very good. Some free evaluations: “One could get acquainted with the depressive world with help of a patient who was a competent writer and skilfully described his feelings”. “I felt that I received hints for future work as a practicing doctor”. The students’ answers to questions regarding the book were later analysed using a qualitative method. The reading had enhanced understanding of depression. Many described feelings of anxiety, irritation and fear. Some had not noticed any feelings.

Conclusions/Take-home messages: The feedback from the students and the teachers’ own experiences encourage continuing this kind of teaching.

9W/P5
Introduction of analytical essay writing activity in the medical curriculum

Mahinda Kommalage*, Sampath Gunawardena (Department of Physiology, Faculty of Medicine, University of Ruhuna, P.O Box 70, Galle 8000, Sri Lanka)

Background: An activity of writing analytical essays was introduced to the medical curriculum in the Faculty of Medicine, University of Ruhuna Sri Lanka. Students are instructed to study on a given topic in detail from textbooks and research papers. They have to write a descriptive and critical analysis. This activity is expected to increase the awareness of new developments in the field and understanding of the complexity and rapidity of changes that occur in the subject.

Summary of work: After the activity, students’ opinion about the activity was assessed using a questionnaire. 152 students participated in the assignment and 144 responded to the questionnaire. Students’ responded to the given statement in a 1 to 5 scale from strongly disagree to strongly agree.

Summary of results: ’Learnt to use medical databases’ and ‘trained on scientific writing’ were well agreed statements (3.96/5 and 3.76/5, respectively). Students also agreed they acquired new knowledge on the given topic and it is an interesting activity (4.06/5 and 3.01/5, respectively).

Conclusions: Writing an analytical essay is a successful active learning exercise which increases the searching ability of new knowledge and expressing it scientifically.

Take-home messages: Writing analytical essays improved students’ information searching ability.

9W/P6
An intra-professional education programme for teachers educating medical students in communication, professional behaviour and reflection

S van Dooren, A Beerthuizen, A van ‘t Spijker, B. Bonke* (Erasmus MC, dept. of Medical Psychology and Psychotherapy, P.O. Box 2040, Rotterdam 3000 CA, Netherlands)

Background: Throughout the six years of the medical curriculum, students are trained in communication skills, professional behaviour and reflection, in small groups. Beside individual feedback on communication skills and other behavioural aspects, group dynamics play an important role in teaching.

Summary of work: To facilitate intra-professional learning, we developed a teacher programme that consists of three main components. The first component consists of regular teacher meetings open for all teachers in our department in which various relevant topics, such as difficult teaching situations, problem students, or development of new teaching courses are discussed.
The second entails teacher-to-teacher feedback: in pairs, our teachers observe each other during a teaching session and provide relevant feedback. The third focuses on student evaluations of their teacher (not the content of the teaching course). Halfway through the year, students anonymously filled out six 5-point Likert scales on specific didactic qualities, and one on general impression of the teacher.

**Summary of results:** The mean (sd) scores in 2006-2007 and 2007-2008 on general impression were 4.33 (0.33) and 4.28 (0.38), respectively.

**Conclusion/Take-home message:** The development of an intra-professional education programme can be seen as a crucial step in professionalizing educators in teaching courses with small groups of students.

### 9W/P7

**The impact of teaching the extracellular matrix with a student centred model**

**J C Sousa, M J Costa, J A Palha* (Life and Health Sciences Research Institute (ICVS), School of Health Sciences, University of Minho, Campus de Gualtar, Braga 4710-057, Portugal)**

**Background:** Students often show difficulties with the extracellular matrix (ECM), when it is introduced early in medical curricula. However, knowledge on its general organization and cellular physiology is essential in later studies to understand pathological disease mechanisms that involve ECM damages.

**Summary of results:** A learning model is presented to teach ECM early in the medical curricula in which teams of 1st year undergraduates: i. explore a specific matrix component; ii. identify one disease associated to its damage; iii. prepare a presentation on the associated physiologic and pathological mechanisms. The model uses 3 hours of class time. Student feedback was gathered at the end of the activity with a "1 minute paper".

**Summary of work:** Student feedback (n=120) and faculty observations on the impact of two applications of the model are very positive. They highlight the model’s interactivity and the possibility of gaining deeper insight on the ECM brought by the need to learn from peers. Learning how to use internet databases – such as the OMIM – was a positive effect of the model.

**Conclusions/Take-home message:** The model achieves higher student engagement and learning. The model can easily be adapted by other medical schools.

### 9W/P8

**The Medical Literature Curriculum**

**Karen C Kelly*, Paul F Shanley* (SUNY Upstate Medical University, 750 East Adams Street, Syracuse NY 13210, United States)**

**Background:** It was proposed during our school’s curriculum renewal that reading the medical literature should be systematically incorporated as an organized component running in parallel with the standard curriculum to make the relevance of what is learned in other courses self-evident and to provide a focus that can help students integrate the basic and clinical sciences throughout medical school.

**Summary of work:** The Medical Literature Curriculum consists of required yearlong courses in the first, second and fourth year. In the pre-clinical years, the courses feature independent study of case reports and perspective pieces followed by class discussion with faculty experts. After clerkships, study of clinical and translational research reports returns the students’ focus to the scientific basis of medicine.

**Conclusions:** Due largely to student advocacy, the Medical Literature Curriculum has progressively expanded into a multidisciplinary enterprise over the past six years. Surveys show that published cases provide an accessible entry into the literature for beginning students and that reading them achieves the same motivational benefits as other case methods.

**Take-home messages:** Formal reading of the medical literature under the guidance of faculty can be a foundational educational experience, initiating students into the authentic conversation of medicine.

### 9W/P9

**Learning through different media: a novel educational session**

**Sarah Smithson* (University of Manchester, Rusholme Health Centre, Walmer Street, Rusholme, Manchester M14 8NP, United Kingdom)**

**Background:** A broad range of media exist to support medical education.

**Summary of work:** An educational session was designed for first year medical students, using different media to increase understanding of heart disease from a patient’s perspective. They were introduced to real patient stories, via the award winning internet site dipex.org; interviewed a specialist community nurse; considered written patient information, and discussed an extract from Peter Carey’s novel, Bliss, describing a patient’s view of his resuscitation following cardiac arrest. In small groups they prepared presentations of what they had learned and received feedback from a tutor and their peers.

**Summary of results:** In an evaluative questionnaire, completed by 89% (322/360) of students, they perceived the most beneficial learning were the patient stories and nurse interview. They were positive, but less so, about the written information and found discussion of the novel extract unhelpful. Presentations included plays, songs, poems and posters.

**Conclusions:** Combining different media in a single educational session was successful although the students need more guidance to engage meaningfully with the literary piece.

**Take-home messages:** Using different media together with reflection, presentation and feedback provides a useful model for future educational sessions.

### 9W/P10

**“ECG Who Am I?”: an enjoyable and interactive learning activity**

**Graeme Horton*, Parker Magin (University of Newcastle, Australia, Faculty of Health, School of Medicine and Public Health, University Drive, Callaghan, NSW 2308, Australia)**

**Background:** An educational tool has been developed to enhance electrocardiograph (ECG) education. It has been used and evaluated with groups of medical students, junior doctors, and general practice registrars.

**Summary of work:** “ECG Who Am I?” involves each participant receiving a brief clinical history and an ECG. The ECG is invisible to the participant, being worn on a party hat. Participants must rely on their peers’ description of the ECG's features to form a diagnosis. In a group setting, each participant offers a diagnosis of their own ECG and then views their ECG and is given the true diagnosis.
Participants are invited to discuss aspects of ECG interpretation learnt during the exercise. Feedback has been obtained at four “ECG Who Am I” activities from a total of 71 participants (response rate 98%).

**Conclusions:** More than 90% of participants indicated that the activity was informative, enjoyable and encouraged further learning. 79% of participants reported increased confidence in reading ECGs. Qualitative responses suggested that the non-confrontational, congenial format was conducive to learning.

**Take-home message:** “ECG Who Am I” is an innovative peer-to-peer learning activity. Our survey results suggest that the activity has high acceptability and increases participant confidence in reading ECGs.

**9W/P11**

**How doctors learn: learning methods and influences in a teaching hospital**

*David Gallagher*, Caroline White, James O’Hare (Limerick Regional Hospital, Dooradoyle, Limerick, Ireland)

**Background:** To identify the range of learning methods in hospital doctors and to rank their importance.

**Summary of work:** Questionnaire submitted to 5 grades from student to consultant. A wide range of learning methods were inquired of, and participants were asked to rate the different learning resources from 1 (lowest rating) to 5 (highest rating).

**Summary of results:** Ninety-eight participants were enrolled with a mean age of 28.4 years. The most influential modes of learning included working with consultants (mean ranking=4.55), working with peers (4.39) and preparing for examinations (4.33). The least influential resources were pharmaceutical representatives (1.79), pharmaceutical promotion material (1.85) and non-professional material (2.36). The most common internet sites for reference include “pubmed” (46/98), “uptodate” (40/98) and “emedicine” (26/98).

Senior doctors ranked medical journals higher (Spearman’s rank correlation r=0.321, p=0.001), while junior doctors ranked textbooks higher (Spearman’s rank correlation r=-0.469, p<0.0005). Junior doctors ranked fear of litigation as a greater learning influence than senior doctors but the correlation is not significant (p=0.077).

**Conclusion:** Doctors of all grades report learning most by working with peers and senior colleagues, while not being influenced greatly by pharmaceutical representatives and promotional material.

**Take-home messages:** Our results emphasise the importance of clinical, on-the-job teaching.

**9W/P12**

**“Outcomes analysis of case-based education in a multidisciplinary, multiple format setting”**

*Marc Crawford, Leslie Cohan, Gretchen Keefee* (Educational Measures, LLC, 1625 Downing Street, Denver 80218, United States)

**Background:** To identify the range of learning methods in hospital doctors and to rank their importance.

**Summary of work:** Questionnaire submitted to 5 grades from student to consultant. A wide range of learning methods were inquired of, and participants were asked to rate the different learning resources from 1 (lowest rating) to 5 (highest rating).

**Summary of results:** There was a statistically significant improvement in learning and retention over the 12 week evaluation period compared with pre-program, although there was evidence of a reduction over time.

**Conclusions:** Statistically significant changes in learning were noted for this case-based program immediately post-program and at the 6 and 12 week follow-up evaluations. In addition, a statistically significant proportion of participants stated a commitment to change at 8 of the 13 programs.

**Take-home messages:** Case-based education can give sustained improvements in practical learning over time for a variety of specialties; Case-based education results in a significant commitment to change; Consideration of demographic group via rigorous needs assessment is important in planning cases and questions, since there are clear differences in overall attitude and response to questions according to demographic group; Despite good case construction which results in significant improvements in learning and retention of that learning, ambiguous wording of specific questions can confuse the participants and impair this process.

**9W/P13**

**Teaching health by local culture**

P Bumrungkarn, S Wongtranrang*, N Punjaisee, V Buayen, U Chaitong (Chiang Mai Medical School, Division of Registrar, Department of Educational Service, Faculty of Medicine, Chiang Mai University, Department of Parasitology, Chiang Mai 50200, Thailand)

**Background:** For the Chiang Mai medical curriculum, Medical Professional Development is designed in an integrated series of the general concept of health, health promotion, bioethics, and individual, family and community health from year one to year three. According to the definition of health by the WHO, we introduced first year students to Northern culture in order to learn the lifestyles of local people.

**Summary of work:** One hundred and eighty nine students were divided into ten groups to study about varied Northern culture such as herbal food ingredients, Northern style of marriage, funerals for different hierarchy, etc. and present their work at the end of the course. Five knowledgeable referees were invited individually to assess the presentation and group reports. The five-item rating scale and an open ended questionnaire were used anonymously for course evaluation.

**Summary of results:** Among 118 of the 189 (62.43%) responders, 88.1% learned a lot, however only 72.0% could apply their knowledge. Small group activity encouraged their learning process (77.9%) and most of the responders participated (83.8%). The referees provided positive feedback and suggestions (81.2%). Nearly all of them (97.5%) suggested continuation of this activity. Their impressions were the enjoyment of group activity, learning Northern culture and amazing presentations.

**Conclusions:** To cultivate the medical profession among students, they need to learn how people live. Adult learners are self-motivated and they practice by doing, so their learning activity allows them to study and present realistically. As a result, experts are needed to participate in assessments.

**Take-home message:** Teaching health through culture and life style.

**9W/P14**

**Role play for assisted teaching of clinical genetics for fourth-year medical students in Japan**

*Akane Kondo*, Noa Uchida, Yuko Morita, Shunichiro Izumi (Tokai University School of Medicine, 143 Shimokasuya, Isehara 259-1193, Japan)

**Background:** Role play is a method which is used to make students understand the concept of genetic counselling especially for counsellor training. As for the medical students, communication skills had not been a major part of learning before. In Japan, Genetics as science has been developed very well, so now medical students need more education for communication skills to take care of complicated situations.
**Summary of work**: 120 fourth-year medical students at Tokai University were recruited. A 60 minute lecture of clinical genetics was given. They were then divided into 15 groups and were assigned to perform a role play for 15 minutes in one out of five topics. At the end, they discussed each case altogether. Self-administered questionnaires were undertaken after the class.

**Summary of results**: Most students understood the concept of genetic counselling (80%), recognized the difficulties of ethical issues (85%) and appreciated role play (90%). Some of them pointed out the limitation of counselling service.

**Conclusion**: Role play assisted teaching can be used as a method to improve understanding of the concept of clinical genetics. Role play is a good method.

**Take-home message**: It could be better to make smaller classes for teaching genetic counseling. Role play is a good method.

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**9W/P15**  
**Training transfer: the vital link between training and improved performance**  
*K Farrell*, J L Clarke, N D S Bax, F Patterson, M J Bannon, H A Davies (Academic Unit of Medical Education, 85 Wilkinson St, Sheffield S10 3GJ, United Kingdom)

**Background**: External courses, wet labs, and simulation are key elements in the clinical training of doctors. Thus, assessing how such learning transfers to changes in clinical practice (training transfer) is critical.

**Summary of work**: This study reports on the piloting of tools to evaluate training transfer. Trainees (n=62) attending two Royal College of Surgeons of England courses provided (a) pre (b) immediate post, and (c) 1 month post-course self-assessment of knowledge, skills, and abilities relating to each of the course objectives (using a 1-6 rating scale), and qualitative data of subsequent changes in clinical practice.

**Summary of results/Conclusions**: The tools demonstrated (paired t tests) that learning had occurred across all course objectives (t = min 4.4 – max 11.2, p < 0.0001). All 1 month post course respondents (n=17) indicated that attendance at the course had changed their clinical practice. However, several barriers to training transfer were identified such as lack of opportunity to use new skills in present post.

**Take-home messages**: This evaluation tool is generalisable across training courses. The findings demonstrate that evaluation of training transfer by self-report is feasible and informative, as the tool was successful in identifying barriers to training transfer.

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**9W/P16**  
**Problems of teaching in medicine**  
*Jiri Beran* (Institute for Postgraduate Medical Education, Prague, Czech Republic)

There are several problems of education in medicine from the point of view of the university teacher: (1) the selection of information for student memorisation (due to the information explosion); (2) the teaching of skills and attitudes (in a manifest way and also through the "hidden curriculum"); (3) the support of humanity e.g. psychology in medicine (in connection with the rapid development of biological sciences); (4) perfection of the triple-role: an excellent medical doctor, a charismatic teacher and a brilliant researcher.

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**9X/P1**  
**System of doctors' training management oriented to learning outcomes**  
*V N Kazakov, A N Talalaenko, M S Kamenetsky, M B Pervak* (Donetsk National Medical University, Ilyicha, 16, Donetsk 83003, Ukraine)

**Background**: An original system of doctors' training management has been designed and put into practice at the Donetsk National Medical University. The distinguishing feature of the system is the orientation of education at all its levels to learning outcomes – doctor's competences.

**Summary of work**: The methodology and methods of the determination of the learning outcomes were designed. The experts formulated occupational competences which must be acquired by medical students. According to these learning outcomes the objectives and content of all subjects were determined. The efficacy of education is assessed by testing. The distinctive feature of the tests used is the fact that they evaluate the degree of mastering the professional competences but not the level of knowledge.

**Conclusions**: The system of doctors' training management at the Donetsk National Medical University is the basis of the Ukraine state standards of medical education and state system of attestation of quality of doctors' training. Since starting license examinations in 1996 the graduates of the Donetsk National Medical University have shown the best results in Ukraine. This fact proves the efficiency of our system of doctors' training management.

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**9X/P2**  
**Evaluation of the competencies incorporation in our outcomes oriented curriculum**  
*Valentin Muntean* (University of Medicine and Pharmacy "Iuliu Hatieganu", Str. Emil Isac 13, Str. Republicii 18, Cluj-Napoca 400023, Romania)

**Background**: In 2005 we initiated a process of undergraduate curriculum reform, outcomes oriented, based on CanMEDS 2005 competency framework. We evaluated the competencies incorporation in our educational programs, after three years of implementation.

**Summary of work**: A questionnaire was distributed to 80 teachers. A 1-to-5 response scale (1=No competency framework incorporation; 2=Small; 3=Some; 4=Large; 5=Complete) was used. The teachers were asked to rate the use of the seven CanMEDS Roles (Medical Expert, Communicator, Collaborator, Health Advocate, Manager, Scholar and Professional) for setting learning objectives, developing instructional materials, choosing seminars/rounds topics and guiding evaluation. 68 questionnaires (85%) were retrieved and analyzed.

**Summary of results**: The overall incorporation of competency framework in our curricula was large: 4/1.5 (Median/Interquartile Range) for setting learning objectives; 4/1.75 for developing instructional materials; 4/1 for choosing seminars/rounds topics and 3/1.25 for guiding evaluation. The competencies incorporation was slightly better for basic sciences when compared with clinical disciplines. In term of the Roles, Medical Expert and Professional were more successful than the Health Advocate and Manager. Teachers varied considerably with respect to their adoption of the competency framework.

**Conclusions**: The competencies incorporation in our undergraduate curricula after three years of implementation is important.
Take-home messages: For further implementing of the competency framework faculty educational leaders should provide more support for some disciplines and teachers, in terms of teaching, learning and especially assessment.

9X/P3
A study of students’ satisfaction of training social skills in Fasa University of Medical Sciences
Bakhtiyar Banakar* (Fasa University of Medical Sciences, Ave Cina Sq, Fars, Fasa 7461686688, Iran)

Summary of work: This is a descriptive research study. The data were collected through a two-part questionnaire, of which the first part included background information and the second part consisted of forty items on students’ satisfaction of training social skills related to courage, effective relations, happy life, assertiveness, self-knowledge, and problem solving. The researchers and their colleagues tested those forty students who attended the workshops continuously and intermittently. Having collected the data, the researchers analyzed the questionnaires using SPSS.

Summary of results: The findings show that students came from Medicine (25%), Nursing (17.5%), Laboratory Sciences (2.5%), students of Operating Theater (10%), Anesthetics (2.5%), and Health (42.5%). Those students who continuously attended the workshops expressed their satisfaction from the workshops as: 55.1% courage workshop; 51.5% effective relations workshop; 47.8% happy life workshop; 47.5% assertiveness workshop; 53% self-knowledge workshop and 40% problem solving workshop.

Conclusion: The students who attended the workshops continuously were more satisfied with the workshop than those who attended intermittently. In addition, courage, effective relation, happy life, assertiveness and self-knowledge workshops were of more interest to all students. However, none of the students showed much interest in problem solving workshops.

9X/P4
Assessing outcomes after they’re gone: measuring preparedness for residency practice
Glenna J Ewing*, Diane Hills* (Des Moines University, 3200 Grand Avenue, Des Moines, IA 50312, United States)

Background: The ultimate outcome for a medical school is the graduates’ ability to secure a residency program and to perform in a competitive manner during their residency. This study surveyed Residency Directors of Des Moines University (DMU) College of Osteopathic Medicine (COM) graduates to obtain feedback on the performance and professional attributes of the first year resident.

Summary of work: The Residency Directors Survey has gathered information on DMU-COM graduates after completing the first year of graduate medical education for the Classes of 2004, 2005, and 2006. In an IRB approved study, the DMU-COM graduates gave permission to survey their Resident Director.

Summary of results: The results indicate there were significant improvements over the three year period on five attributes that reflect a focus in DMU-COMs curriculum: Ability to apply basic science knowledge; Ability to utilize clinical science knowledge; Ability to perform, order, and interpret diagnostic tests using knowledge of evidence-based medicine; Ability to establish continuous learning goals and pursue them; and Ability to manage the stresses of being a physician by balancing personal and professional commitments.

Conclusions: This study is an example of measuring educational outcomes that assess student learning by obtaining residency director feedback.

9X/P5
Internship 101 - equipping tomorrow’s physician: an individualized approach to becoming the best intern you can be
J G Wong*, B A Bozarth, E L Brownfield, J G Ondo (Medical University of South Carolina, 96 Jonathan Lucas Street, Suite 601 CSB, Charleston, SC 29425, United States)

Background: Medical students use the 4th-year of medical school to fine-tune skills necessary for success in internship/residency. While senior elective rotations comprise the usual 4th-year course catalogue, most school's curricula have content gaps –procedural skills, learning how-to-teach, finance management, etc. - that are commonly recognized. In response to this, many schools have developed “Capstone” courses in the fourth year that provide didactic presentations covering these orphaned topics.

Summary of work: Using a novel approach for creating medical school curricula, we crafted a 4th-year course that was designed to be highly self-directed and based on the CME professional-conference model. An RFP was issued to the faculty and housestaff at MUSC asking them to submit didactic presentations, workshops, seminar-series and symposia on those subjects missing in the traditional curriculum yet relevant to 4th-year medical students as future interns. These submissions underwent peer-review and the highest scoring offerings were selected for our course. The course was presented during two 2-week sessions.

Conclusions: Like a professional-conference, enrolled students themselves chose which educational offerings to attend. The course was well-attended and student evaluations were extremely positive.

Take-home messages: Formulating curriculum based on a professional-conference model was well received and successfully promoted self-directed learning in our students.

9X/P6
Family Physician: which competences are needed and what are predictors for career choice?
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Background: Family physicians (FP) not only provide comprehensive health care. In their role as gatekeepers they fulfill a key demand in most international health care systems. Therefore we assessed required competencies and predictors for FP.

Summary of work: Using the 'University Witten/Herdecke Alumni Database' with 264 graduates and up to 16 years work experience (48%, 1980-2005) we employed univariate-analysis to show the influence of demographic, structural, attitudinal and educational variables on the career choice “FP” and its needed competences.

Summary of results: Thus far, 13% (35) of the alumni become FP, 74% (195) started another specialization and 13% (34) started no specialization. In comparison, FP are significantly more often female (69% vs. 43%, p=0.005) whereas duration of study, age, family status or study time abroad did not differ in between subgroups. In daily professional life FPs required less research competence (4.1±1.9 vs. 3.5±1.8; p=0.02) and more psychosocial competences (1.7±1.2 vs. 2.3±1.7; p=0.01) and more self-directed learning (1.6±1.2 vs. 2.1±1.6; p=0.03).

Conclusions: From the perspective of daily professional life FPs are requiring less research, but more psychosocial competencies and self-directed learning. The only demographic predictor for a career choice as FP is female gender. Further research is needed to identify educational requirements for future FPs.
9X/P7
Undergraduate dermatology education: educational methods and confidence
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Background: A national multidisciplinary panel identified 53 learning outcomes in dermatology that should be achieved by UK medical graduates. This survey aimed to measure confidence levels in the learning outcomes and identify associations between educational methods and confidence in dermatology.

Summary of work: A questionnaire based on the 53 learning outcomes was sent to 28 UK medical schools. 449 final year students from 14 medical schools completed the survey. Confidence was rated using a 5-point Likert scale. Statistical significance was assessed using the independent samples t-test and one-way ANOVA test.

Summary of results: Overall, 65.1% of students were at least adequately confident in assessing and 52% in managing skin conditions. Confidence in learning outcomes for acute dermatological emergencies was consistently lower compared with chronic skin conditions. Both clinical exposure and teaching was associated with higher confidence (p≤0.05) than teaching alone, in all but five learning outcomes. Students who experienced student-selected components (SSCs), clinical exposure and small-group sessions in dermatology had higher levels of confidence (p≤0.001) compared with students who did not.

Conclusions/Take-home messages: SSCs, direct observation and small-group learning are associated with higher confidence in dermatology. Emphasis should be placed in improving medical students’ confidence in acute dermatological emergencies.

9X/P8
Development of an outcome based Intern Orientation Program
R Laurent*, R Robbins* (Royal North Shore Hospital, St Leonards, Sydney 2065, Australia)

Background: The content of the Intern Orientation Program is determined by a variety of factors, and often contains topics that are of little practical value. To improve our program we made it outcome based. The aim was to teach topics that were relevant for Interns commencing practice in the first term.

Summary of work: An outcome based Orientation program was developed after consultation with junior medical staff, registrars and consultants. Nineteen important outcomes were included in the program. These included advanced life support skills, blood collection, prescribing medications, prescribing fluids, and managing acute chest pain.

Summary of results: The 2007 program was changed so that clinically relevant topics increased from 18% to 59% of the program. Teaching of general administrative topics was reduced from 58% to 11% of teaching time. Other changes were the introduction of practical skills teaching, assessments and a 26% increase in total teaching time.

Conclusions: There are numerous pressures to include a variety of general administrative topics in the Intern Orientation Program. Changing to an outcome based Orientation Program has allowed us to focus on topics that produce improved Intern clinical skills.

Take-home message: An outcome based Orientation Program ensures Interns learn the appropriate competencies to commence practice.

9X/P9
Adapting curriculum to population needs and accreditation requirements: thirty years experience at Université de Montréal Faculty of Medicine
Raymond Lalande*, Marcel Julien, Christian Bourdy, Martine Jolivet-Tremblay, Michel Girard, (Université de Montréal, CP 6128 Succursale Centre-ville, Montréal H3C 3J7, Canada)

Background: During the last three decades, Université de Montréal Faculty of Medicine proceeded to major reforms. The undergraduate curriculum was adapted to population needs and to the requirements of Canadian and American accreditation bodies.

Summary of work: In 1972, our program was five years long, system-based approach, consisting mostly of lectures during the preclinical years. In 1993, we moved to a four years, integrated curriculum largely based on PBL and early clinical exposure. In 2002, our clerkships were required to include an equal exposition to hospital and ambulatory care. In 2004, facing a 70% increase in student enrolment over a seven years period, we opened a regional campus 150 miles from Montreal. We are now exploring the adaptation of our undergraduate and postgraduate programs to CanMeds 2005 competencies.

Conclusion: It is possible to regularly adapt curriculum to population needs and accreditation requirements.

Take-home messages: The key to success is to use validated frameworks to guide the planning, implementation and evaluation of these changes.

9X/P10
Human environment necessary for becoming a great doctor
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Background: How can one become a great doctor while achieving excellence and following professional ethics? In this study, I aim to highlight the characteristics of the human environment for becoming a great doctor.

Summary of work: First, I researched the factors and structure of the human environment. Thus, I conceived a model for analyzing the human environment using two models: Howard Gardner’s system model and Bronfenbrenner’s ecological systems model. Second, I studied the life histories of Oliver R. Avison, MD and Ki Ryu Jang, MD. Dr Oliver R. Avison was a pioneer in the field of medicine in Korea and the founder of the Severance Hospital and Medical College. Dr Ki Ryu Jang, who was called the ‘Schweitzer of Korea’, was devoted to the poor and weak patients of Korea. After studying the life and works of these two great doctors, I found out several similarities. Both these special individuals were engaged in religious acts and were social thinkers.

Conclusions: In order to be a great doctor and excel and innovate in the medical field, medical students should have the opportunity to interact with individuals who are active in the religious, ethical and social spheres. Further, they should participate in discussions on topics across various social fields, and develop their ideas in order to realize higher goals through medical service.

Take-home messages: How can we develop a human environment for helping medical students to become great doctors?
9X/P11
Developing a Global Positioning System for the medical curriculum
Richard Arnett**, Denise O’Mara, Geraldine MacCarrick, Claire Doody, Claire Condron (Royal College of Surgeons in Ireland, 123 St. Stephens Green, Dublin 2, Ireland)

Background: An accurate map of the curriculum is essential for any teaching programme. A dynamic curriculum map can be used to ensure ‘constructive alignment’ (Biggs, 2003) between teaching methods, learning objectives and assessments. The ability to use such a tool to query relevant areas of a curriculum allows more accurate data-driven decisions to be made regarding curriculum development.

Summary of work: This poster summarises the processes, people and pitfalls involved in developing a curriculum map/mapping tool for the medical programmes offered by the Royal College of Surgeons in Ireland. Developing a curriculum map and an associated tool for collecting and querying the data is a difficult and time-consuming process. This difficulty was compounded when trying to achieve these aims with a ‘moving target’ of an existing, running curriculum. Key stages in the process were the identification of knowledge sources about the curriculum (paper/electronic documents, content management systems, personal experience etc.), development and refinement of the data/metadata headings, identifying the relevant linkages between data components and choosing a platform to collect and query the data.

John Biggs (2003): Aligning Teaching and Assessment to Curriculum Objectives, (Imaginative Curriculum Project, LTSN Generic Centre)

9X/P12
Introductory courses on general competencies early in the curriculum: how invaluable can they be?
M J Costa*, A Salgueira, CP Brito, P Oliveira (Life and Health Sciences Research Institute (ICVS), School of Health Sciences, University of Minho, Campus de Gualtar, Braga 4710-057 Braga, Portugal)

Background: Failings and drop out rates at the end of the first year of undergraduate medical programmes are of concern internationally. Inadequate levels of general competencies may contribute to this phenomenon and thus should be addressed early in medical curricula.

Summary of work: This is an analysis of the impact of an integrated 4 week course focused on introduction to statistics, laboratory, informatics, oral presentations and teamwork, based on three years of longitudinal data.

Summary of results: The failing rates at the end of first year are marginal (highest value: 5%) and there are no student drop outs. Analysis of student achievements on the introductory course related to their performance in the subsequent courses revealed that performances in this course are good predictors of future student performance. The top 25% as well as the bottom 25% of student marks are significantly different across the final marks on the subsequent two first year courses with the biggest workload (and the highest ECTS); the top 25% students present, consistently along the three years of this study, an average higher grade on these courses.

Conclusions/Take-home messages: Performances in introductory courses can aid in the student adaptation to college and in the identification of students with particular needs of support.

9X/P13
Reflective writing as a tool to measure humanized characteristics in medical students
Satang Supapon* (Khon Kaen Medical Education Center (KKMEC), Khon Kaen Regional Hospital, Sri chan Road, Nai Mueng, Mueng, Khon Kaen 40000, Thailand)

Background: Teaching concept of Humanized Health Care (HHC) has been arranged to encourage students to provide service empathetically using holistic and patient-centered approach with humanity skills. The study aims to evaluate reflective writing as a tool for identifying humanity of the students as well as the association of humanized characteristics and EQ.

Summary of work: Thirty medical students were assigned to write their experiences according to their most impressive patients during the clerkship. Their essays were scored by three independent staff. The humanity scores were derived from the discussion themes from the focus group regarding humanized doctor. They were also asked to complete standard EQ test. Correlation between the scores and EQ scores was analyzed.

Summary of results: The humanity score given by the staff and EQ score had high reliability with inter-raters correlation coefficients = 0.90 (p = 0.00) and Cronbach’s alpha of 0.91 (p=0.00) respectively. The high consistency assured the confidence of using the tools. However, no association was found between EQ in either dimension (morality, intellectual and happiness) and humanity score which reflected different focus of interest of the tools.

Conclusion: Reflective writing as a tool to evaluate the students’ humanized characteristics and EQ test should be used adjunctively as the tools evaluate different aspects of the students.

9X/P14
Can a workshop about mental health influence a participant’s Emotional Intelligence in the short and long term?
Keiko Abe,* Phillip Evans, Elizabeth Austin, Yasuyuki Suzuki, Kazuhiko Fujisaki, Masayuki Niwa (Gifu University School of Medicine, Medical Education Development Center, 1-1 Yanagido, Gifu 501-1194, Japan)

Background: Emotional Intelligence (EI) is important for physicians in dealing with patients, and in coping with the high-stress of work. The purpose of the study is to find out if any change in the Emotional Intelligence scores could be determined as a result of the workshop.

Summary of work: Approximately 200 international undergraduate medical students participated in the 5th Asia Pacific regional meeting about mental health and well-being in physicians on March 2007. A workshop to demonstrate that expressing, listening and sharing emotions are important skills for protecting a physician’s mental health and emotional stability was delivered. Students completed a 30-item questionnaire about Emotional Intelligence, before and after the workshop and March 2008 as a follow up.

Summary of results: The results (n=167) both at pre and post-workshop were compared by ANOVA. The reliability (Alpha) was high (0.8778) and showed a significant change between pre- and post- test (P=0.022). Males were more positively associated (male: P=0.058, female: P=0.164). Age and Years-in-medicine showed no significant changes.

Conclusions: The intervention made some impact on EI. The analysis will be presented at the conference.

Take-home messages: Emotional Intelligence can be influenced by intervention.
9X/P15
Emotional Quotient and humanized health care activities
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Background: Studies have shown that emotional quotient (EQ) plays an important part in forming successful patient-doctor relationship. Humanized health care (HHC) is also a principle which encourages students to approach patients holistically with empathy. This study thus aims to measure changes of EQ over the time of the period of HHC teaching and identify the association between EQ and clerkship performance of the final medical students.

Summary of work: The Thai EQ questionnaires were completed by 31 students 3 times over the period of HHC teaching. The questionnaires comprise 3 parts reflecting their morality, intellectual state and happiness. The correlation between EQ and clerkship performance was calculated using Pearson correlation. Focus group discussion was conducted to explore relationship between HHC teaching and changes in EQ.

Summary of results: The mean EQ of medical students was within the acceptable range. Their EQ tended to increase over time with no statistical significance. No correlation between EQ and clerkship performance was found (P= 0.62). The focus group revealed that HHC activities can encourage the students to give care empathically.

Conclusion: All medical students had fair EQ. HHC did not significantly affect their EQ, but can persuade most students to understand patients holistically.

9X/P16
Can Emotional Quotient tell who is a good doctor?
Rungruedee Jeerasap* (Medical Education Center, Khon Kaen Hospital, Ministry of Public Health, Srijan Road, Tambol Naimuang, Amphur Muang, Khon Kaen 40000, Thailand)

Background: Emotional Quotient has been used to exemplify the way that a person understands and takes care of him/herself and others as well as to illustrate one’s maturity which is required to accomplish, aside from cognitive ability in medical practice. Moreover, Emotional Quotient, ethical awareness and clinical competency might be correlated. This study aims to evaluate the association between Emotional Quotient, OSCE of clinical and ethical skills.

Summary of work: Thirty one final year medical students in Khon Kaen Hospital were asked to complete the Thai Emotional Quotient Questionnaire. The Emotional Quotient scores were then analysed to see the association with the scores from OSCE of clinical and ethical skills.

Summary of results: The students’ Emotional Quotient states were in acceptable range. The correlation coefficients were 0.30 (p>0.5), 0.00 (p>0.5) and 0.56 (p>0.5) for correlation between OSCE and clinical OSCE, ethical OSCE, and total score of clinical-ethical OSCE respectively.

Conclusion: Emotional Quotient has found no association with clinical and ethical OSCE. Thus, high Emotional Quotient state might not guarantee learning success or good ethical skill.

9X/P17
Culture and art as tools for medical education
V Kalfakakou*1, N Vadaloukas2, I Dimoliatis3, A Evangelou1 (1Physiology Lab, Medical School, University of Ioannina, Greece, 2Department of Plastic Arts and Art Sciences, University of Ioannina, Greece, 3Hygiene Lab, Medical School, University of Ioannina, Greece)

Background: An innovative action for undergraduate medical education has been included in the EPEAEK project: “Reformation of the Undergraduate Studies Program of the Medical School of the University of Ioannina (Greece)”.

Summary of work: Movies, Plays, Books, Music and other Art products evaluated as closely related and scientifically consistent to Medical or Biomedical issues, such as molecular biology, environmental medicine, medical cases on psychiatry, cardiology, surgery, cancer, obstetrics etc. were chosen to comprise the educational material. Members of the medical staff were introducing the medical issue and after the performance they were discussing and analyzing the case with the audience. Medical School, but also other department’s students, academic staff and the public, were invited to attend the presentations in order to approach and integrate, through entertainment, biomedical issues. Questionnaires were completed by the participants and were evaluated while parts of the above activities were being filmed.

Conclusions: This educational procedure: 1. provided the opportunity to exalt the social and cultural impact of medicine and to propose artistic creativity as an educational tool; 2. underlined the responsibility of professionals of medicine towards patients and society as a whole and their need for a wider and humanistic education.

Posters
9Y
The postgraduate trainee / Education for general practice

9Y/P1
Peer perception of essential qualities in a junior doctor
Joanna Davis (A Abdulla to present) (Bromley Hospitals NHS Trust, Famborough Common, Orpington, London BR6 8ND, United Kingdom)

Background: What makes a good junior doctor? Previous research shows nurses, doctors and patients vary in their perception of important attributes. Nurses and patients tend to value humanistic qualities while doctors value clinical competence and recognition of limits. Little is known as to what junior doctors themselves consider most important. A nominal group technique (NGT) showed that junior doctors rated patient safety, communication skills and clinical competence most highly. The aim of the study was to validate the NGT and determine the qualities most important as rated by junior doctors.

Summary of work: The 15 most important attributes were determined in a previous NGT. These were ranked by 63 junior doctors.

Conclusions: The results supported the NGT. ‘Ability to recognise limits’ was rated most highly.

Take-home messages: The results validate NGT. Further research could focus on whether different attributes are more important at different levels of training.
9Y/P2
Characteristics of passion for clinical practice in Residents
N Deguelle, I Heyligers, J Busari, A Scherpber (Atrium Medical Centre, Post Bus 4446, Heerlen 6401CX, Netherlands)

Background: In Occupational Psychology passion has been defined as: “a positive affective-cognitive state of utmost satisfaction, recognized by vitality, dedication and absorption.” A self-evaluation questionnaire (the UBES) is available to measure these characteristics in different kinds of employees, including doctors. The objective of this study is to define factors of passion in residents, observable by others. The ultimate goal of our research is to be able to recognize and influence passion for clinical practice in residents.

Summary of work: In the Atrium Medical Centre in Heerlen, the largest non-academic Teaching Hospital in the south of the Netherlands, 8 experienced staff educators each gave 5 characteristics they considered to be evidence of residents having “Passion for the Job”. These characteristics were analyzed and categorized.

Summary of results: 7 different categories of characteristics appeared. The passionate resident, as perceived by his educator, is hard working, scientifically interested, energetic, shows pride for his work, strives for perfection, is strong in communication and is strongly independent.

Conclusions: External observation provides additional information on the quality of the already known characteristics of passion for clinical practice in residents.

9Y/P3
Passion for the Job: a comparison between self-evaluation and external observation
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Background: The objective of this research was to study the phenomenon of “Passion for the Job” in residents. Previous research has focused on self-evaluation. In this study a comparison was made between residents’ self-evaluation and externally observed determinants of passion for clinical practice.

Summary of work: Deviant groups of residents were selected. Residents scoring relatively high and residents scoring relatively low on passion, as perceived by experienced staff educators, were selected. The two groups of residents filled out the UBES, a 9-item questionnaire, containing 3 scales: vitality, dedication and absorption.

Summary of results: Independent Sample t-test comparing the two groups of residents, showed no significant differences between the groups, with t=0.150, df 10, p= 0.886, group 1 (n=7) having a mean of 4.44 and a SD of 0.55 and group 2 (n=5) reporting a mean of 4.38 and a SD of 0.98. Results looking at the 3 different scales, vitality, dedication and absorption, show no significant differences either.

Conclusion: No significant differences were found between the two groups of residents based on their self-evaluation in this research. This suggests that self-evaluation on passion differs from externally perceived passion in clinical practice. Further research is needed to substantiate these findings.

9Y/P4
Learning styles and career choices in junior doctors
L Flutter*, H Parry*, M Clapham (University Hospital Foundation Trust, Edgbaston, Birmingham B17 2TH, United Kingdom)

Background: Studies demonstrate behavioural similarities amongst medical professionals working within the same specialty.

Aim: Investigate learning styles and desired specialty training programme amongst UK medical graduates and correlation with foundation programme experience at University Hospital, Birmingham.

Summary of work: Using the Kolb learning style tool trainees can be divided into assimilators, divergers, accommodators and convergers. 35 Foundation year 2 trainees at University Hospital used the postgraduate hospital educational environment (PHEEM) score to analyse the quality of their educational environment. We analysed both scores to identify any correlation between environmental satisfaction, personal learning style and intended specialty for future training.

Summary of results: 83% (35/42) trainees completed both surveys. Perceptions of autonomy, teaching and social support were positive (reliability 0.950). Trainees distributed evenly amongst the 4 Kolb learning styles. 5/7 (71%) of primary care graduates were divergers, whilst 5/6 (83%) surgical/radiology candidates were convergent.

Conclusions: These data show that medical graduates demonstrate all four of the learning styles. Graduates applying for primary care were ‘reflectors’ which contrasts with previous published data which suggests they are assimilators. Trainees applying for surgery demonstrate a predilection for ‘active’ learning styles.

Take-home messages: Use of Kolb learning style may help graduates decide upon career choices.

9Y/P5
Stress factors among Lebanese medical residents: comparison between anaesthesia and other specialties
F Haddad, E Nembr, C E Hage, G Slelaty, P Yazbeck (R Moussa to present) (Hotel Dieu de France Hospital, Saint Joseph University Medical School, Adib Ishac Street, Beirut 166830, Lebanon)

Background: Medical residents’ stress factors vary according to specialties. The aim of this study is to compare stressors in Lebanese anaesthesia residents with other specialties.

Summary of work: 127 residents in all specialties completed a questionnaire including 50 potential stressors: academic, psychosocial, political, economic, personal life events, and others.

Summary of results: Residents were grouped in: surgery (S) 46.1%, medicine and radiology (M) 40.2%, anaesthesia (A) 13.7%. Insufficient income, political instability, economic crisis and exams were major stressors and were identical among all residents’ specialties. Stressors significantly different between anaesthesia and other specialties: Lack tutoring in medical practice - A<S,M; Number of on-calls/month - M>A,S; Uncertain future prospects for additional training abroad - A<M,S; Lack of responsibilities during training - A<S,M; Lack of study time - A>S,M; Lack of adequate settings in the faculty and hospital - A>M,S; Number of work hours - S>A,M; Verbal, physical abuse by the medical, nursing staff - M>A,S; Lack of senior back-up during on-calls - A<S,M. Anaesthesia residents were more satisfied with the choice of their career than other residents.

Take-home messages: Unstable economical and political situation related to our country was a major stress factor identical among medical residents. Some stressors concerning training were significantly different between anaesthesia residents and residents in other specialties.
9Y/P6
What does it mean to be a burned out resident?
E Durante*, S Carrió, V Discacciatti, N Giraudo, A Eymann (Hospital Italiano de Buenos Aires, Juan D. Perón 4272, Buenos Aires 1199, Argentina)

Background: We used the Maslach Burnout Inventory to measure the prevalence of burnout in our residents. In 2004, BO was 20% and in 2006, 32%. We found significant associations between BO and institutional characteristics and clinical supervision but no differences in gender, age or surgical vs. non-surgical residencies. Residents’ perceptions are important factors related to BO comprehension.

Objective: To evaluate residents’ perceptions of BO in a university hospital.

Summary of work: Residents from different post-graduate years, specialties and gender were recruited. The survey asked about the meaning, factors and strategies to prevent BO. Data were analysed using grounded theory and codes were triangulated. Participants were 237 respondents.

Conclusions: BO is perceived as a condition with high job demands, insufficient rewards, and lack of autonomy expressed as “a predetermined journey”.

Take-home messages: Training of teachers on methods to foster SDL, an intensive mentoring process, and support to residents and teachers through attending workshops is essential.

9Y/P7
Promoting SDL in Family Medicine Residency Program in Saudi Arabia
Mohammed H Doghether*, Helen Batty (Postgraduate Training Center in Family Medicine, Ministry of Health, Riyadh 11623, Saudi Arabia)

Background: Learning how to learn is an important skill for the future physician. Lifelong learning is the goal of SDL.

Summary of work: By using the learning from experience model and Personal Responsibility Orientation (PRO) model. Learner self direction-supportive learning environment is essential and residents need skills that facilitate SDL. Self-directed learning-working in groups are helpful in SDL, while differences of opinion about how to achieve the goal is a challenge.

Take-home messages: Training of teachers on methods to foster SDL, an intensive mentoring process, and support to residents and teachers through attending workshops is essential.

9Y/P8
Extensions to training for general practice: a novel approach
Clare Wedderburn*, Camilla Leach, Samantha Scallan* (NHS Education South Central, Highcroft, Romsey Road, Winchester S022 5DH, United Kingdom)

Background: The debate surrounding the length of training general practitioners should receive is a long-established one. The Wessex Extension Programme was developed to allow newly qualified GPs approximately 3 months of protected, extended experience in general practice.

Objective: To consider how the extension programme can be helpful in meeting the educational needs of newly qualified GPs.

Summary of results: Analysis revealed 4 categories: permanent physical and emotional exhaustion and stress caused by excessive workload that pervades every aspect of their lives, mismatch between the “huge” assumed responsibility and economical or personal rewards, interference with personal projects and home life and lack of autonomy expressed as “a predetermined journey”.

Conclusions: Resident BO is perceived as a condition with high job demands, insufficient reward and interference with personal and home life that affects every aspect of residents’ lives. These categories fit in the demand-support-control model.

9Y/P9
Locum research: implications for professional development and post grad training
D Myhre*, W Woloschuk, R Crutcher, C Hansen, O Szafran (Faculty of Medicine, University of Calgary, 3330 Hospital Drive NW, Calgary T2N 4N1, Canada)

Background: A cross-sectional survey of 377 graduates of two academic Departments of Family Medicine in the province of Alberta during 2001-2005 was conducted. The survey asked about reasons for entering and leaving the locum, locum duration, and eventual practice location. SPSS 15 was used for descriptive analysis (frequency, crosstabs), including Chi-Square and Fisher’s Exact tests. GIS software is being used to track location and time in this style of practice.

Objective: To determine locum research implications for professional development and post grad training.

Findings are based on a response rate of 242 (64.2%) respondents. Of these, approximately 65% either practiced or were currently practicing in a locum. 50.0% indicated that the main reason for doing a locum was to increase experience or competence. The primary reason for leaving a locum (43.4%) was to settle into permanent practice and 44.8% joined a practice where they did a locum. Most (74.3%) respondents arranged locums independently.

Take-home messages: Our findings inform postgraduate programs on their outcomes, workforce realities upon graduation and aid health workforce planning.

9Y/P10
Using poetry and prose to teach - on or off the GP curriculum?
Marion Lynch* (Oxford PGMDE, The Triangle, Roosevelt Drive, Oxford OX3 7XP, United Kingdom)

Background: Educators are charged with building an environment in which learners can reach their full potential. Within this there needs to be support, challenge, assessment and identifiable learning outcomes linked to curriculum statements. So how does one facilitate learning about patients’ lives? How does one help a trainee come to an understanding about how patients make sense of illness in their life story? How does one expose trainees to emotional connection, multiple truths, complexity? Perhaps it is through the use of poetry and prose.
Summary of work: GP Trainers in Oxford PGMDE were interviewed to explore how and why they used poetry and prose to teach. Eight one hour long semi-structured interviews explored how this tool was used to facilitate learning, and how this learning linked with educational objectives.

Conclusions: Trainers use literature to reach the parts other tools cannot; caritas, understanding the context of patients’ stories, narrative competence.

Take-home messages: The type of language used by interviewees, their use of metaphor, the reluctance to tag learning with objectives and the lack of tutorial plans or other triangulation evidence suggest a non-scientific mental model of medicine and inductive mental model for education. This is at odds with new competency GP curriculum model.

9Y/P11
Supporting trainers with a tool to enhance teaching and assessment of ST 1 and 2 learners in GP attachments

Caroline Nixon*, Sarah Goulding, David Chidwick (Banbury Vocational Training Scheme, Terence Mortimer Postgraduate Education Centre, Horton Hospital, Oxford Road, Banbury OX16 9AL, United Kingdom)

Background: In August 2007, all learners on our 3 year GP vocational training scheme were allocated for the first time to a six month post in GP during their first or second (ST1/2) year. Feedback from the trainers’ group showed that trainers and learners lacked clarity regarding learning needs, educational objectives and expected levels of competency for these posts.

Summary of work: Trainers and the wider primary health care team were new to teaching and assessing learners at this stage of their career and sought consistency in educational experience and assessment for ST1/2 learners. The trainers derived an assessment tool specific to this post, to complement current assessments. Descriptors of behaviour were generated to match levels of competency expected of an ST1/2 doctor at the end of 6 months. Each learning need was then mapped against the curriculum, to aid integration with the e-portfolio.

Conclusions: Trainers felt more confident about their expectations of the learner and their assessment. The document has proved useful as a tool for generating a PDP and provides evidence for the final clinical supervisor’s report. Trainers have adopted the tool and feel a sense of ownership.

Take-home messages: Clarifying expectations has increased confidence in both ST1/2 learners and educators. The trainers’ group can produce useful tools for learning and assessment.

9Y/P12
Validation of a short clinical assessment and feedback tool in GP-training (GP-SCAF)

Henk Mokkink*, Loes van den Elsen, Anneke Krame, Ben Bottema (UMC St Radboud, 166 VOHA, PO Box 9101, 6500 HB Nijmegen, Netherlands)

Background: GP-trainers have been observing their GP-trainees in practice for years. Assessment of clinical competence is essential in competence based postgraduate medical education. In GP-training however, there is no systematic procedure for observation. The aim was to develop a short, easy to use observation list.

Objectives: To inventory opinions of experts in the field of assessment instruments and users on the desirable form and content of the observation list.

Summary of work: After a systematic review of the literature for assessment instruments a qualitative questionnaire was developed. In six questions two (or more) alternative forms or contents were presented, and the responders were asked to indicate which alternative was their favourite one and for what reasons. Ten experts, ten GP-trainers, ten GP-trainees and ten GP-teachers were asked to fill in the questionnaire. Of them eight, three, five and nine responded.

Summary of results: There was no unanimity, but very useful arguments were brought up. In dialogue with the users a short list (plus manual) was constructed. The list will be tried out on a weekly basis in 36 trainer-trainee dyads.

Conclusion/Take-home message: If the try out is successful, the GP-SCAF, used as an educational instrument, will be further validated.

9Y/P13
Paediatric training for General Practice – are we meeting the requirements?

V Walker*, D Wall, H M Goodyear (West Midlands Workforce Deanery, St. Chad’s Court, 213 Hagley Road, Edgbaston, Birmingham B16 9RG, United Kingdom)

Background: Paediatric competencies to be gained during a hospital post on the General Practice (GP) vocational training scheme (VTS) are stated by the Royal Colleges. Many GPVTS posts have changed from 6 to 4 months duration raising concerns that standards are being met.

Summary of work: A 60 item questionnaire was sent to GP trainees in our Deanery about their Paediatric placement including experience and management of acute and chronic disorders.

Summary of results: Reliability of the questionnaire was high (Cronbach’s alpha 0.897). There was no difference in response by post duration. Experience of acute/inpatient disorders was good with gaps in chronic conditions and community Paediatrics. Children’s teaching hospitals were felt to provide less experience of normal newborn babies (p=0.02), convulsions (p=0.03) and failure to thrive (p=0.006). Overseas qualified doctors were more confident about treatment of stridor and the acute abdomen (p=0.009). EU doctors were least confident about growth (p=0.03) and UK qualified doctors in knowledge of cot death (p=0.03).

Conclusions: Not all the essential competencies are covered by Paediatric hospital posts but there are opportunities to rectify this during GP registrar placement.

Take-home message: An integrated curriculum is needed to ensure that GP trainees gain all necessary Paediatric competencies.

9Y/P14
Does academic foundation training meet its objectives?

Oliver J Corrado*, Kate Reuben, Heike Grabsch, David Wilkinson, Naomi Powell (West Yorkshire Foundation School and University of Leeds, Leeds General Infirmary, Great George Street, Leeds LS1 3EX, United Kingdom)

Background: In order to ensure doctors were able to pursue an academic career within medicine, the Academic Careers Sub-Committee of Modernising Medical Careers made several recommendations on how this might be achieved within planned restructured postgraduate training in the UK. One of these recommendations was to create Academic Foundation Programmes, which were introduced in August 2005. The West Yorkshire Foundation School initially had 9 Academic Foundation programmes and now has 12 (3 in psychiatry, 3 in pathology, 3 in medical oncology, 3 in vascular surgery/medicine).
Summary of work: We report on the career pathway chosen by the 21 doctors to go through these training programmes to date.

Summary of results: So far 3 Academic Foundation doctors subsequently obtained Academic Clinical Fellow posts (1 in vascular surgery, 1 in dermatology, 1 in psychiatry), 7 have pursued training in hospital specialties (1 doing a PhD as well), 2 have gone into general practice and 9 are currently in the application/interview process.

Conclusions: Although these are early days it is extremely encouraging that some of the Academic Foundation trainees are continuing to pursue an Academic career pathway within medicine, which suggests one of objectives of the Academic Sub-Committee is being met.

9Y/P15
Role play series on the difficult patient approach in Family Medicine Residency Program at Ramathibodi Hospital, Thailand
Panitee Poonpetcharat* (Faculty of Medicine, Ramathibodi Hospital, Family Medicine Department 270 Rama6 Rd. Rajthevi, Bangkok 10400, Thailand)

Background: Effective communication has been shown to enhance patient satisfaction, compliance with treatment, and medical decisions and outcomes. Certain encounters are likely to be problems for doctors, the so-called 'difficult patient'. There are several procedures and techniques that help resolve difficult interaction. The purpose of this project was to design a structured Family Medicine residency training activity to emphasize key points about patient-physician communication and anticipate difficult encounters.

Summary of work: Twenty sessions have been designed to learn the approach for difficult patients in front of the class. Each session, the trainee did not know the topic and simulated patient. After the fifteen minute interview, the observers discussed the difficult encounter and feedback. Family medicine faculties summarized principles and pitfalls to approach such a difficult case. Finally, the trainees answered a self-administered questionnaire on these activities.

Conclusion: Trainees reported more understanding on how to approach and more confidence to deal with difficult patients. They were satisfied with the activities although it made them more anxious than talking to a real patient.

Take-home message: Role play series on the difficult patient approach was another teaching model to help family medicine residents practice their skills on the most challenging encounters.

9Y/P16
A Delphi survey exploring Annual Review of Competency Progression (ARCP) scenarios and issues in GP Specialty Training
Phil Matthews* (Cardiff University, School of Postgraduate Medical and Dental Education, 8th Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

Background: In autumn 2007, Annual Review of Competency Progression (ARCP) panels were convened on a limited scale for the first time in General Practice Specialty Training in several UK Deaneries. This experience suggested that the potential ARCP panel outcomes specified in The Guide to Postgraduate Specialty Training (Gold Guide 2007) are ambiguous and would promote widely inconsistent high stakes judgements. This suggestion was explored and confirmed in a workshop involving Celtic GP Educators. In light of this information, the Conference of General Practice Education Directors (COG PED) agreed to investigate where consistency might be promoted prior to larger scale ARCP panels scheduled for summer 2008.

Summary of work: Five volunteer GP Directors took part in an email Delphi Survey exploring ARCP trainee scenarios and organisational issues. In round one, participants offered provisional opinions and justifications. In round two, they had an opportunity to revise these, in light of their colleagues' anonymised responses.

Conclusion: First round responses demonstrated the predicted high degree of opinion diversity. Round two promoted consensus in a few areas; and important diversity continued in others.

Take-home messages: ARCP panel outcome descriptors in the Gold guide should be clarified if important decisions affecting training progression are to be consistent.

9Y/P17
Oncology training for general practice
Katalin Barabas*, Andrea Radnai, Ferenc Hajnal, Istvan Ilyes, Laszlo Kalabay, Lajos Nagy (Division of Behavioural Sciences, Psychiatry Clinic, Szentharmasug utca 5, Szeged 6722, Hungary)

Background: The cancer mortality data of the Hungarian population is one of the worst in Europe and has not changed significantly in recent years.

Aims: Our main aim is to improve the epidemiological situation by development of medical education. Our complex interventional program contains training for GPs and GP residents in cancer prevention and disease management. In Hungary there are four medical faculties offering training for GPs. Our aim is to harmonize the curricula of medical faculties and develop a training program that is directed towards methods of screening and prevention, breaking bad news, end-of-life care.

Summary of work: Educational needs assessment: curriculum analysis, focus groups, questionnaire survey; Knowledge transfer: computer aided learning; Skill improvement: video assisted skill training; Assessment: portfolio, case study.

Summary of results: The results of the pilot program will be presented.

Conclusion: The primary care physician can make a difference in the health of the community. Therefore epidemiologic challenges could be answered by dynamic, effective training programs.

9Y/P18
Emergency Medicine Postgraduate Residency Competency Assessment - a national survey
A Bishnoi, B Borgundvaag, S Lee* (Mount Sinai Hospital, Faculty of Medicine, University of Toronto, Rm 206 - 600 University Avenue, Schwartz/Reisman Emergency Centre, Toronto, Ontario M5G 1X5, Canada)

Background: The Canadian College of Family Physicians offers a 1 year fellowship in Emergency Medicine (EM). Presently, no method exists to confirm that CCFP(EM) residents graduate with the clinical skills and confidence required for the challenges of EM practice. This study aimed to assess the effectiveness of CCFP(EM) programs by assessing resident confidence and self-perceived competence.
Summary of work: In 2007, 160 surveys were distributed to CCFP(EM) programs. The 20-question survey employed 5-point Likert scales to assess self-perception of knowledge and confidence in clinical and non-clinical (NC) managerial skills. Questions were based on national residency Core Competency Guidelines (CCG). The responses were calculated and compared using student's t-test and Mann-Whitney tests.

Summary of results: A representative sample was obtained in both outgoing and incoming residents (>70%). Statistically significant (p<0.05) improvements were noted in virtually all clinical and NC domains.

Conclusions: This is the first study to demonstrate that CCFP(EM) programs successfully teach the CCG clinical domains. Confidence was lower in paediatric dermatology, ethics, and higher-level NC managerial skills.

Take-home messages: The CCFP(EM) program is successful in training residents with the clinical skills and confidence needed to practice EM. This survey helps focus the development of future education tools to train EM residents.

9Z/P19
Appraisal: outcomes add value
Katie Laugharne, Malcolm Lewis* (Cardiff University, School of Postgraduate Medical & Dental Education, 8th Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

Background: Annual appraisal is a contractual requirement for all doctors in the UK. In Wales the Deanery (Cardiff University) manages a single web-based system of appraisal for all 2700 GPs. GP appraisal is educational and developmental but closely linked with systems of clinical governance.

Summary of work: This study seeks to explore the impact of appraisal on individual doctors, and the extent to which any outcomes derived from appraisal add value. Outcomes of the work will inform development of the system and sharing of good practice.

Summary of results: Based on a literature review, focus group and analysis of appraisal transcripts a matrix model has been developed.

Conclusions/Take home messages: For many GPs appraisal appears to add value across the above dimensions. Where appraisal does not appear to add value, reasons for this will be explored.

9Z/P1
How do students' evaluations of a basic examination course correspond to instructors' evaluations?
Silke Biller*, Marianne Giesler (University Hospital Freiburg, Department of Education, Elsässer Straße 2 m, Freiburg 79110, Germany)

Background: As an exercise in the Faculty evaluation system: using the Personnel Evaluation Standards to assess qualifications and performance

Soleiman Ahmady*, Italo Masiello, Mats Brommels, Tahereh Changiz (Department of Learning, Informatics, Management and Ethics, Karolinska Institutet, Berzelious väg 3a, Stockholm 171 77, Sweden)

Background: Developing and implementing an appropriate approach to evaluate effectively faculty members' performance is a challenging issue. To do that, it is essential first to assess faculty evaluation programs. The purpose of this study was to develop a faculty evaluation instrument by applying the Personnel Evaluation Standards. The instrument was then validated and used to evaluate the performance of medical school faculty in many activity areas.

Summary of work: The study was carried out using qualitative methodologies in order to measure the development of the instrument against the Personnel Evaluation Standards. A quantitative part was then used to test the instrument and conduct a survey.

Summary of results: We considered the mean scores of the four basic principles of sound evaluation (utility, propriety, feasibility and accuracy) in five domains of faculty members' efforts. The results showed that the corresponding standards are occasionally or frequently met. Analysis of variance showed that teaching and research efforts had the highest mean scores respectively, while clinical services, administrative roles, and self-development activities had the least mean scores.

Conclusions: The finding of this study is consistent with the widely held view expressed in the literature that a combination of information sources should be used to form a comprehensive evaluation of all areas of performance. Universities may use the standards to develop an instrument of basic requirements, both to assure that their faculty evaluation systems are sound and to make needed or desirable improvements.

Take-home messages: The Personnel Evaluation Standards are valid to develop an instrument to be used for meta-evaluation of faculty evaluation system.

9Z The teacher / Medical education

Posters

9Y/P19
Appraisal: outcomes add value
Katie Laugharne, Malcolm Lewis* (Cardiff University, School of Postgraduate Medical & Dental Education, 8th Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS, United Kingdom)

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Summary of work: This study seeks to explore the impact of appraisal on individual doctors, and the extent to which any outcomes derived from appraisal add value. Outcomes of the work will inform development of the system and sharing of good practice.

Summary of results: Based on a literature review, focus group and analysis of appraisal transcripts a matrix model has been developed. This model suggests that appraisal might have impact across a number of dimensions, including attitudinal change; intention to change; change to behaviour, service delivery and/or patient care. The model is being tested with reference to analysis of a survey sent to all GPs and case reports submitted by appraisers.

Conclusions/Take home messages: For many GPs appraisal appears to add value across the above dimensions. Where appraisal does not appear to add value, reasons for this will be explored.

9Z/P2
Faculty evaluation system: using the Personnel Evaluation Standards to assess qualifications and performance
Soleiman Ahmady*, Italo Masiello, Mats Brommels, Tahereh Changiz (Department of Learning, Informatics, Management and Ethics, Karolinska Institutet, Berzelious väg 3a, Stockholm 171 77, Sweden)

Background: Developing and implementing an appropriate approach to evaluate effectively faculty members' performance is a challenging issue. To do that, it is essential first to assess faculty evaluation programs. The purpose of this study was to develop a faculty evaluation instrument by applying the Personnel Evaluation Standards. The instrument was then validated and used to evaluate the performance of medical school faculty in many activity areas.

Summary of work: The study was carried out using qualitative methodologies in order to measure the development of the instrument against the Personnel Evaluation Standards. A quantitative part was then used to test the instrument and conduct a survey.

Summary of results: We considered the mean scores of the four basic principles of sound evaluation (utility, propriety, feasibility and accuracy) in five domains of faculty members' efforts. The results showed that the corresponding standards are occasionally or frequently met. Analysis of variance showed that teaching and research efforts had the highest mean scores respectively, while clinical services, administrative roles, and self-development activities had the least mean scores.

Conclusions: The finding of this study is consistent with the widely held view expressed in the literature that a combination of information sources should be used to form a comprehensive evaluation of all areas of performance. Universities may use the standards to develop an instrument of basic requirements, both to assure that their faculty evaluation systems are sound and to make needed or desirable improvements.

Take-home messages: The Personnel Evaluation Standards are valid to develop an instrument to be used for meta-evaluation of faculty evaluation system.
9Z/P3

A survey of the teaching standards of the consultant staff in the Medical Directorate at a District General Hospital

A Blundell*, A Gordon, G Cox (Medical Education Department, King’s Mill Hospital, Sherwood Forest Hospitals NHS Trust, Mansfield Road, Sutton-in-Ashfield NG17 4JL, United Kingdom)

Summary of background: The training of junior medical staff is carried out by senior clinicians who often have no formal teaching qualifications. This study investigates the teaching quality of the consultant physicians (n=29) working in a district general hospital, recorded by global evaluations completed by the junior doctors.

Summary of results: An ‘evaluation of teaching’ questionnaire was sent to 74 junior doctors. 32 replied (43% response). Teaching quality and educational supervision for each consultant was assessed in eight and three disciplines respectively using a 6 point Likert scale.

Conclusion: The overall mean score on each teaching discipline was > 4 and for educational supervision > 5. Only three (10%) consultants were found to score consistently low in each of the teaching categories.

Take-home messages: Trainee evaluation of consultant teaching is an important part of feedback. Evidence of such evaluation should be used as part of a consultant’s appraisal.

9Z/P4

Trainee attitudes about their assessment of consultants’ teaching ability

Lauren Williams*, Sarah O’Neill, Jane Bird (Department of Anaesthetics, Royal Berkshire Hospital, London Road, Reading RG1 5AN, United Kingdom)

Summary of background: Trainees in Reading have assessed the teaching ability and attitudes of consultants for three years. The trainees’ opinions about the process were surveyed to test for reliability and improvements.

Summary of results: A 73% of trainees (19 out of 26) replied, of whom 95% found the assessment forms easy to complete. 47% felt encouraged to raise issues they may not have otherwise and 89% were honest when praising good behaviour. Only 58% were as honest when they felt that attitudes and ability were below average or poor and 3 trainees admitted to “toning down the comments”.

Conclusion: We are reassured that the majority of trainees feel able to express their opinions (both good and bad) in an honest manner and that they see the assessments as worthwhile. Perhaps this process should be extended to other hospitals in the future?

9Z/P5

Appraising excellent teachers: A new framework for documenting and assessing pedagogical competence

Ann-Kristin Sandberg*, Maria Weurlander, Linda Barman* (Karolinska Institutet, Department of Learning, Informatics, Management and Ethics, Stockholm SE-171 77, Sweden)

Summary of background: In Sweden, university teachers are required to show evidence of pedagogical skills for promotion. Teaching portfolios consisting mainly of summaries of teaching experience are commonly used for documentation of pedagogical qualifications. However, there is a need for assessing teachers’ pedagogical competence.

Summary of work: We developed a new framework for documenting and assessing teachers’ pedagogical competence. For continuous documentation of teaching activities the portfolio method is used. Through documentation of concrete teaching examples and reflections on teaching experience and own development the framework was developed to capture teachers’ competence. The framework, based on research on teaching and learning in higher education, consists of a guide on how to document pedagogical activities and explicit criteria for assessing pedagogical competence. To test and adjust the framework a pilot study was performed, involving teachers from various educational contexts at Karolinska Institutet, members of a staff development unit and a reference group with program directors. At the conference the new framework will be presented.

Take-home message: To appraise excellent teachers a framework highlighting reflection and development was created to capture and assess pedagogical competence.

9Z/P6

Perceptions of mentors engaged on a supportive, group-based mentoring program for junior medical students

M F A Colares, M Castro, C M Peres*, A D C Passos, J F C Figueiredo, M L V Rodrigues, L Troncon* (Ribeirão Preto Faculty of Medicine, University of São Paulo, Department of Clinical Medicine, Hospital das Clinicas, Campus da USP, Ribeirão Preto 14048-900, Brazil)

Summary of background: An elective mentoring program aimed at supporting junior (first year) medical students and fostering their personal development has been recently implemented in our institution, with slowly increasing student adherence. In a previous study, we found that students have positive views about the program and regarded it as useful and effective in facilitating adaptation to a new environment. This work aimed at assessing mentor perception of the program and of their roles.

Summary of results: Qualitative response analysis indicated a high degree of satisfaction among mentors regarding participation in the program. Although some negative aspects were mentioned, mentors acknowledged that the program has been useful not only to assist students, but also to foster the mentor’s own personal and professional development.

Conclusion: Students’ positive views on our institution mentoring program is also shared by mentors, which is likely to have a positive effect on the consolidation of the program.

Take-home message: A successful mentoring program for junior medical students may also benefit faculty members engaged as mentors.
9Z/P7

**Being a mentor for medical students – a rewarding experience**

*Terese Stenfors-Hayes*, Susanne Kalén, Uffe Hylin, Hans Hindbeck, Sari Ponzer* (Dept. of Learning, Informatics, Management and Ethics and Dept. of Clinical Science and Education, Södersjukhuset, Karolinska Institutet, Berzelius väg 3, Stockholm 171 77, Sweden)

**Background:** Mentorship is often introduced to support the professional development of the mentoree. The mentor, however, may benefit from the mentorship as well.

**Summary of work:** Medical students (n=132) at Karolinska Institutet (KI), during their clinical courses (terms 5-8), were offered a personal mentor. The mentors were MDs at Södersjukhuset, a KI teaching hospital. The mentors were offered two days of training and a follow-up meeting was arranged each semester. Mentors and mentorees were randomly matched and recommended to meet twice each semester. For evaluation, a questionnaire was distributed to all mentors (n=92, response rate 73%) and ten were also interviewed.

**Summary of results:** A majority of the respondents reported that being a mentor increased their interest in teaching, their understanding of the students' situation and improved their relation to students. Furthermore, the mentorship led to personal development for a majority of the respondents, and increased their reflections regarding their values and their professional practice. However, some mentors found it stressful to fit the meetings into their busy schedules. When the mentors described their experience of being a mentor they used words such as fun, inspiring, rewarding and stimulating.

**Conclusions/Take-home messages:** Family doctors experience training first year medical students to be rewarding and refreshing. This result should be emphasised when reforming curricula to be more primary health care centred.

9Z/P8

**Training first year medical students rewards family doctors**

*Helena Kääpä*, Paula Vainiomäki, Jaana Franck (University of Turku, Lemminkäisenkatu 1, Turku 20520, Finland)

**Background:** An early patient contact programme was implemented into the medical curriculum of the University of Turku, Finland, in 1991. In this core programme first year medical students from their first weeks of training visit the office of family doctors for an afternoon every month to observe and participate in the doctor’s practical work. The aim of this study was to investigate expectations of participating family doctors and thereby to improve the programme.

**Summary of work:** A questionnaire was sent to 68 family doctors, and 52 of these responded. A list of aims of the programme to assess, and open questions for own expectations and experiences were given. Result were analysed quantitatively and qualitatively.

**Summary of results:** Participating doctors expressed they were able to initiate successfully students’ understanding of the patient-doctor relationship and of diverse areas of family doctors’ practice. They also felt that meeting students was refreshing, although the ordinary work became busy. Further, family doctors indicated their participation as trainers in the early patient contact programme to be rewarding and contributed to updating their own knowledge and skills.

**Conclusions/Take-home messages:** Family doctors experience training first year medical students to be rewarding and refreshing. This result should be emphasised when reforming curricula to be more primary health care centred.

9Z/P9

**Iranian medical sciences faculties’ attitude toward their academic career and academic promotion: a national survey**

*Hassan Emami Razavi*, Ali Jafarian, Azim Mirzazadeh, Amir H Emami, Narges Saleh (Tehran University of Medical Sciences, Po Box 14185-481, Tehran 1444735497, Iran)

**Background:** Faculty attitude is an essential part of the educational environment. We performed a nationwide survey to find medical sciences faculties’ feeling about their job and academic environment.

**Summary of work:** 3,000 Questionnaires were sent to all 48 medical sciences institutes of Iran with around 11,000 faculty members. 13 questions about faculty members’ attitude toward their job and promotion were included in the form.

**Summary of results:** 1,615 responses were gathered from 39 universities with response rate of 53.84%. 92.3% of respondents agreed that any development in the university is related to faculty members’ activity. Education and research was the main interest of 82.7% while 14.7% were interested in education exclusively. 67.3% stated their interest for doing education-research activities has increased compared to what it was when they began their career. About lack of enough time to spend for each part of academic and service work, 64.9% of respondent agreed. 50% of respondents believed that support for research was more than for educational activities.

The same number stated that university support of faculty members' promotion is not enough. In spite of some problems, 88% of faculties would choose to be a faculty member if they had to begin again.

**Conclusion:** Faculty members of medical sciences universities in Iran have a positive attitude toward their career but complain of insufficient time to do all the aspects of their job that they want.

9Z/P10

**Academic medicine: caught between two worlds**

*Eric L Dey*, Casey B White* (University of Michigan, 1135 E. Catherine St., Ann Arbor, MI 48109-5726, United States)

**Background:** Within the academic sphere, medical educators serve as faculty members who are, as a group, often recognized as leaders in professional education and assessment. 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 experiences of academic physicians working within professional education in the U.S.?

**Summary of work:** Using a national survey of college faculty conducted in 2004 by the U.S. Department of Education, we examined the experiences of academic physicians working within professional education in the U.S.

**Summary of results:** The survey database contains responses from 963 faculty members teaching directly in medical fields, with additional faculty teaching in medical school and supporting areas.

**Conclusions:** Information gleaned from the survey about faculty experiences, teaching practices, and consideration of other employment settings (both within and outside of academic) paints a data-based portrait of the experiences and the challenges facing today’s academic physicians.

**Take-home message:** Physician educators working within academic medicine settings make their contributions at the intersection of two very different worlds.
9Z/P11
Motivation and work load of teachers during undergraduate medical education
Outi Jääskeläinen, Erika Österholm*, Anna-Lisa Koivistoo, Marita Neitolaa, Helena Haapanen, Pekka Kääpä (Medical Education Research and Development Centre, University of Turku, Käihäntie 13, Turku FIN-20520, Finland)

**Background:** Teaching and learning in undergraduate medical education are continuously developing and need frequent evaluations and modifications. This development means increasing requirements for the work of the medical teachers. We decided to investigate teachers’ opinions and experiences in their teaching work.

**Summary of work:** In spring 2007 a questionnaire was sent to 156 medical teachers of our faculty. 117 teachers (75%) responded. Among reflective aspects of teaching function and good teaching, teachers’ experiences of their motivation and work load were specifically surveyed.

**Summary of results:** A majority of the respondents (80%) were giving lectures and 50% also small group teaching. Two-thirds of the teachers had participated in pedagogical courses. Our preliminary results indicate that 52% of the teachers were well motivated. Still, 47% of them did not clearly define their level of motivation. Similarly, 27% of the teachers felt that their work load was not too high, whereas 69% were not totally satisfied with their work load.

**Conclusions:** Half of the teachers of undergraduate medical education are well motivated. Still, a significant part of them feel themselves unsettled in their motivation and are not clearly content with the work load. These observations form the future target of our investigations.

9Z/P12
Section for the young - Italian Society of Medical Pedagogy (S.I.Pe.M – Società Italiana di Pedagogia Medica)
P Anzilotti, M Proietti*, F Milazzo, C Pensieri, A Augelli, F Bertoloni, A Bevilacqua, C Cibin, F Cicone, V Ferro Allodola, N Giordano, E Marfari, F Marocchini, E Mogavero, R Nonni, (Via IV Novembre 149, Roma 00187, Italy)

**Background:** The purpose is to give opportunities to Italian students and young professionals to reflect on, create and experience activities about medical education, as protagonists.

**Objectives:** To promote and encourage development and values about the knowledge, research, and studies in medical education, involving young students and professionals <35 yrs old, with an active involvement of young people from all over Italy.

**Summary of work:** Activities and research lines are guided by the young people participating. Training points: to improve communication skills in the relationship with patients; to discover our emotions as health care providers through the theatre experience; to investigate possible changes in nutrition during the period of exams. Research lines: Movies in medical education; The practice of portfolio to increase medical students’ reflective skills; The use of novel technology techniques in learning and education.

**Conclusions:** The group includes 30 people from different but linked backgrounds - pedagogists, medical doctors, nurses, midwives, psychologists, and npl trainees from different Italian universities. The group has a Skype meeting each Thursday evening. Next steps are to increase members in every city and to promote training and research activities in each location.

9Z/P13
A systematic review of published articles in medical education in Iran
Hamid R Baradarana, Nasibeh Vatankhah, Reza Rezazadeh-Kermani, Shilan Ajdeh, Elham Talebian, Ferdos Rohipour, Parvin Sasani, Jalil Koohpayehzhoed, Mohammad E Kahmseh, Ali-Akbar Haghdooost (Iran University of Medical Sciences, Hemmat Highway, Tehran 14496, Iran)

**Background:** Research in medical education has contributed substantially to understanding the learning, teaching and assessment process. Although there has been progress in this field in Iran, insufficient systematic evaluation of published research has been performed particularly in the undergraduate medical area.

**Summary of work:** A systematic literature search was performed using all Iranian databases and also all presentations in international conferences between 1994-2007. Hand searching was also performed by reviewing the references of the retrieved articles. Of a total of 187, 133 articles were categorized into learning process, 28 papers were focused on teaching methods and 26 articles were about evaluation-assessment.

**Conclusions:** The methods of the majority of published research were cross-sectional. We did not find any published experimental studies in our systematic review. It is concluded that medical education research in Iran should be improved.

**Take-home messages:** Future studies in undergraduate medical education should be improved by using more rigorous methodology.

9Z/P14
A look at senior promotion criteria for staff claiming excellence in teaching in England
M Quentin-Baxter, S Hardy* (Higher Education Academy Subject Centre for MEDEV, School of Medical Education Development, Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne NE2 4HH, United Kingdom)

**Background:** In 2005 the English and Ni funding councils awarded ~£315M to support the establishment of ‘Centres for Excellence in Teaching and Learning’ (CETLs) with the stipulation that they would impact on promotion equality between teaching and research. As part of a range of measures to understand effectiveness, the Academy funded a mini-project to consider promotion criteria in institutions where CETLs had been awarded in health-related disciplines. A qualitative ‘work-in-progress’ aimed at generating discussion and sharing good practice is described here.

**Summary of work:** A review of the literature and CETL publications relating to HR was undertaken, followed by email/telephone survey to gather example application forms; promotion criteria and volunteers to participate in focus group meetings to analyze and compare the anonymized sample materials.

**Conclusions:** Staff from institutions have agreed to participate and focus groups will take place in the summer of 2008. Early review of sample promotion criteria shows widely differing approaches taken to promotion based on claims of teaching excellence; that institutions have or are reviewing their processes; and application forms may have not been updated to reflect updated criteria.

**Take-home messages:** The full results of this study will be available from http://www.medev.ac.uk/
Regional meetings: a powerful way to support educational innovations

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**Background:** In the Netherlands, eight University Medical Centers (UMCs) and their affiliated regional hospitals are responsible for the modernising of medical specialist curricula. In order to support the innovation process and create synergy between hospitals around one UMC, we organise regional meetings.

**Summary of work:** The regional meetings are organised every six months. Each meeting contains: evaluation of the past six months; goal setting for the next six months; sharing successes and pitfalls; workshops to practise new educational instruments (e.g. portfolio, mini CEX).

**Conclusions:** Progress in the use of educational instruments is visible in every hospital. As a positive spin-off regional meetings create enthusiasm, active involvement and a corporate feeling about education. This success is a consequence of: workshops with a variety of creative and active exercises; enthusiastic role models (medical specialists and residents); continuity by organizing meetings every six months; shared responsibility; each hospital will function as a host one time.

**Take-home message:** Regional meetings are effective to support the implementation of the new competency based curricula by creating the opportunity to share experiences and practice educational instruments.

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9AA/P1

Medical students’ attitudes toward end-of-life care in a death-denial Korean Medical Culture

Seung Min Oh* (Yonsei University College of Medicine, Department of Medical Education, 134 ShinchonDong SeodaemunGu, Seoul 120-749, Republic of South Korea)

**Background:** End-of-life care decision-making is an issue that medical students must face in the future. There is ambiguity and uncertainty between end-of-life care and euthanasia. Death of patients in hospitals is denied and regarded as failure in Korean medical culture.

**Summary of work:** A study was conducted among medical students at one university in the Republic of Korea. A written questionnaire was sent to 1st-, 2nd-, and 3rd-year medical students. There were 4 statements on End-of-life care decision-making: Physician assisted suicide, Withholding life-sustaining management, Withdrawing life-sustaining management, and Terminal sedation. Students were asked whether they agreed or disagreed with them. The response rate was 74.4% (n=267).

**Conclusions:** Korean medical students showed more conservative attitudes than those of previous studies conducted in US and French medical schools, but agreement on terminal sedation was higher among 3rd-year students during their hospice-palliative care clerkship (OR = 4.03; CI 95%, 1.61-10.11).

**Take-home messages:** Korean medical students’ learning experience during clerkship had a significant influence on their attitudes. Proper teaching of end-of-life care during clerkship needs further consideration in a death-denial Korean medical culture.

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9AA/P2

Pain assessment and management: an innovative medical student instructional experience

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**Background:** Pain assessment and alleviation remain healthcare priorities. After early theoretical consideration, students receive sparse focused pain management experience in clinical rotations. A closely mentored 3rd year student program was piloted, during which pain and its meaning are explored in an authentic context, integrating physiologic, pharmacologic, psychologic, social, and humanistic aspects.

**Summary of work:** Detailed curriculum/readings facilitate preparation. Small groups of students have protected time to study pain experiences of surgery patients. Patient assignments ensure broad exposure to postsurgical pain severities, analgesic modalities, opioid-naïveté/-tolerance. After students complete pre-op interviews/pain inventories, the instructor facilitates discussion of concepts. Students then record observations throughout recovery period, the instructor actively facilitating small group learning. Students follow-up with patients, then reconvene for final group debriefing. Anonymous on-line survey (9 Likert/Multiple Choice, 6 free text) was conducted.

**Summary of results:** Over two academic quarters, 39 surveys (64%) were completed. Students valued the program highly. Major themes reported: relevance to patient care; filling education gaps; new, practical knowledge/skills; humanistic aspects; hands-on assessment; opioid pharmacology; physiologic effects. Students described examples of improved ability to provide care.

**Conclusions:** This course avails itself of pain experiences and management challenges in elective surgery patients, an authentic, effective clinical experience.

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9AA/P3

Resident physicians’ learning from dying patients about meaning at the end of life - an educational intervention

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**Background:** Education in end-of-life care (EOLC) has been inadequately addressed internationally. Resident physicians report educational deficits in psychosocial and existential aspects of EOLC, areas of crucial importance to patients. Chochinov and colleagues have developed a “dignity interview”, based empirically on patients’ conceptualizations of dignity; it helps patients make meaning of their life and create a legacy document. We are using the “dignity interview” as an educational intervention to teach first year family medicine and psychiatry residents about meaning at the end-of-life.
Summary of work: Resident physicians administer a "dignity interview" to a dying patient. There are pre- and post- intervention quantitative measures and a qualitative interview to examine the residents' experience of administering the interview.

Conclusions: The project is nearing completion. Quantitative and qualitative data will be presented.

Take-home messages: As EOLC education is increasingly being defined as a core competency, curriculum development must address attitudinal development in trainees if physicians are to provide care that aligns with the experience of dying patients. This includes education in psychosocial and existential aspects, about which patients have much to teach us.

9AA/P4
Quality management in teaching General Practice
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Background: Mandatory clerkship and facultative internship in General Practice make networks of academic teaching practices necessary. Continual, multi-factor comparison ("benchmarking") of teaching quality is central for quality assurance and incentivizing in decentralized curricular models. GP preceptors' cooperation on developing evaluation criteria for benchmarking ("bottom up") is critical for relevance to practice and credibility.

Summary of work: Questionnaire categories were generated by guideline-based focus groups and telephone interviews (n=23). Main points are evaluation criteria discussed by instructing physicians: teacher motivation, practice equipment, student evaluation, quizzing, continuing education, career satisfaction. Forty-five items in eight categories were recorded using five-point Likert scales and open questions. These were mailed March 2008 to 165 teaching physicians at two universities. Telephone recalls should allow a minimum response rate of 80%.

Summary of results: Analyses of "early bird" answers (n=53) show instructors desire student feedback – special importance is placed on successful imparting of knowledge and skills, meeting student expectations, and career enjoyment. The instructing physician's personal commitment in the 1:1 teacher to student ratio appeared of great importance to respondents.

Conclusion: GP preceptors demonstrate great intrinsic motivation for teaching and desire student evaluation on teaching quality regarding educational objectives attained. Evaluation criteria allow credible benchmarking in decentralized medical educator networks.

9AA/P5
Patient sensitive teaching - a model of the operating room
Michael Clapham*, Alison Bullock (University Hospital Birmingham, Metchly Park Road, Birmingham B15 2PR, United Kingdom)

Background: Teaching in the operating room (OR) poses many challenges for teacher, learner and most importantly the patient.

Summary of work: The data are drawn from transcriptions of four interviews and an action learning group conducted with four anaesthetic trainees previously presented in part 1-3. The anaesthetic trainees taught mainly in the OR and interacted with three types of learner, defined by their relation to the anaesthetic community of practice. 1. Patient safety: The primary responsibility for patient safety presented the most important challenge to OR teaching. A single patient is the centre of attention, not the learner. 2. Each learning episode is a one-to-one experience. 3. The doctor has a dual role as she/he is responsible for both the patient and the learner. 4. The workplace location is a complex place in which to learn or teach. The clinician-teacher has to balance the needs of the patient and the learner. The role of the clinician-teacher is complex. They have to take into account the needs of the patient and the learner in relation to the context of the location and the real situation.

Take-home message: The patient can be placed at the centre of teaching in the OR using this model.

9AA/P6
A student selected component in surgery - providing practical experience and increasing student confidence
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Background: Reviews of the medical school curriculum in the U.K. and Ireland have recommended the introduction of Student Selected Components (SSCs). The Department of Surgery in the Royal College of Surgeons in Ireland has introduced a 6 week surgical SSC. This programme develops practical clinical skills, provides mentorship and prepares students for working life. Results of a survey of participating students are presented.

Summary of work: Emphasis in SSC design was given to mentorship of students, exposure to multiple surgical specialties and teaching practical skills. Students completed an online survey pre- and post SSC. This assessed attitudes towards the course and confidence in performing ward based and basic surgical skills. Response rates were based on a 5-point Likert scale.

Summary of results: The mean Likert scale score, assessing confidence performing ward-based and basic surgical skills, increased for all the skills assessed. All students felt the SSC programme better prepared them for their first day of work. Similarly, all students agreed that their experience had strengthened their desire to do surgery.

Conclusion: Introduction of this integrated programme has been successful in increasing student confidence in performing practical skills required on commencing work as a doctor. Provision of dedicated SSCs is likely to influence students' career choice.

9AA/P7
Case report: What do students learn from real patients?
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Background: Case report and discussion from a real patient is one of the major learning activities for medical students of 4th clinical year during study in the department of internal medicine in Prapokklao Hospital. This activity has never been evaluated for its outcome in the aspect of determining the tasks that student should learn.
Evaluation of ICM through two different student curriculum tracks

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Background: After the academic system change from the 6 year medical college to 4 year graduate medical school, we have two different tracks of medical students having trained in different curriculum. This study is focused on the role of ICM (Introduction to Clinical Medicine) as a preliminary course for the year of clinical clerkship by analyzing the focused group discussion and questionnaire between two groups, i.e. the one who proceeded into clinical clerkship after ICM course (3Y) and the other who learned clinical skills during the clerkship without ICM course (4Y).

Summary of work: Twenty students of each group discussed about the pro- and contra side of the ICM course. The questionnaires was also analyzed from the answers of teaching staff who are responsible for the clinical clerkship.

Conclusions: In the focussed discussion the 4Y group expressed the importance and necessity of ICM as much as 3Y group. And they wanted to have more chances to exercise the clinical skills they acquired during the clerkship. The teaching staff also acknowledged the necessity of ICM as a preliminary course for the clinical clerkship, but the skills proficiency of both groups was not different.

Take-home message: ICM is necessary for the good transition to clinical clerkship, but it has less effect on the proficiency of clinical skills. For the completeness of clinical technique there needs to be continuous feedback and exercise.

Supporting peripheries of excellence through visits to district general hospitals aligned to a large medical school

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Background: Undergraduate clinical teaching in the UK has expanded from its traditional base, within established university teaching hospitals, to outside placements in district general hospitals [DGHs]. At King's College London School of Medicine, a key feature of the curriculum is placements in DGHs. At any one time, approximately 400 students are on placement at one of 16 DGHs.

Summary of work: During 2006/2007, a team from King's with clinical, educational and financial expertise undertook visits to these hospitals, to outside placements in district general hospitals [DGHs]. The aims were to thank staff for their work in delivering our curriculum, identify problems and discuss options for enhancing the placements. We met key staff involved with managing the placements, teachers, students and support staff.

Conclusions: Our visits have assisted in resolving local problems and given us access to the views of a relatively wide set of DGH staff. We learnt more about the hospital environments where our students work, and we have also received guidance as to where our current students have insufficient knowledge.

Take-home messages: Regular visits to DGHs support delivery of the clinical curriculum, raise the profile of teaching, build collaboration, and ensure that views from the peripheries are heard at the centre. The poster highlights the process and outcomes of our visits.
Summary of results: Of the students, 95% reported that they learned a lot, 85% that their role as a physician was strengthened and 78% appreciated the feedback. Students especially valued to check themselves in clinical practice and to train in pediatric clinical examination skills; interaction with both children and parents. Among the parents, 100% appreciated the safety of the model and no negative side-effects were reported.

Conclusion: Although time-consuming, a structured model for students' learning from ambulatory pediatric consultations was evaluated as very helpful by both students and parents.

9AA/P12
Response from community hospital in Songkhla for health promotion topic for medical students in Hatyai Medical Education Center
Harnchai Pinaikul (Hatayai Hospital, Songkhla 90110, Thailand)

Background: Hatyai medical education center has set up a health promotion and maintenance program for medical students since 2002 run by health promotion staff in Hatyai medical education center. But we do not known from the community hospital whether it is suitable for communities.

Summary of work: This study was to test the response from community hospitals for health promotion topics in Hatyai medical education center and to improve the health promotion program. 15 community hospitals in Songkhla hospital were surveyed by interview and self-administered questionnaire for health promotion topics in January 2008. There were 15 topics on the health promotion questionnaires.

Summary of results: Topics that were good to very good almost is diabetes mellitus (93%) and the second is accident (80%); the others are nutrition (73%) and old age (73%), obesity (67%) and mental health (67%), exercise (60%), health screening (53%), counseling (53%), HIV/STD (53%), woman's health (53%), oral health (53%) and sex problems in teenagers (53%), drug addicts (47%) and alternative medicine (40%).

Conclusion: Instruction in diabetes is required most in community hospitals in Songkhla and the least is alternative medicine. Receiving data from community hospitals can help to improve the health promotion program in Hatyai medical education center.

9AA/P13
Learning continuity of care in district clinics: Longitudinal Clinic Attachment Programme for medical students
Jannie Hugo*, Tessa Marcus, Liz Wolvaardt (Department of Family Medicine, PO Box 667, Pretoria 0001, South Africa)

Background: Community engagement highlights the need for academic service learning that encompasses continuity of care and community oriented primary care.

Summary of work: A Longitudinal Clinic Attachment Programme (L-CAP) will see medical students attached to a particular primary care clinic for a period of four years. Each group of four medical students, one from each academic year group, will visit the clinic for one full day every two weeks. Forty primary care clinics in and around Pretoria will be used with clinic staff and mentors supervising and training.

Summary of results: Reflections from pilot projects as well as the structure and process of the program and challenges will be presented.

Conclusions: As a community based experiential learning program that addresses continuity of care, primary care education and service provision, this initiative is expected to meet needs of medical students, educators, service providers and patients. The program will also provide a platform for research collaboration beyond the faculty. The initiative has been embraced by all role players and its success rests on meeting all role players' needs.

Take-home message: The L-CAP provides an opportunity for meaningful community engagement throughout the undergraduate curriculum.
10A/1
Using Complementary Medicine to advance both science and professionalism in the medical curriculum
Dr Aviad Haramati (Georgetown University School of Medicine, Washington DC, USA)
As the public’s use of complementary and alternative medical (CAM) therapies has increased, and as research into the safety and efficacy of these modalities has intensified, medical schools are faced with the challenge of determining how best to integrate this information into the curriculum. Some institutions have determined that CAM-relevant material can help achieve a number of desired educational objectives. In this plenary presentation, Dr. Haramati will describe a variety of ways in which material from the thematic thread of Complementary and Integrative Medicine, that is the blending of conventional and nonconventional therapies, can advance scientific curricular objectives and also help students attain proficiency in competencies related to professionalism, such as self-awareness, self-care and personal growth.

10A/2
Medical Education Research – the rhetoric, the reality and future routes
Professor Trudie E Roberts (University of Leeds, UK)
Medical education research is often spoken of as embryonic and as an emerging speciality but is this really true? The quantity of presentations and publications is burgeoning but what of the quality? What is frequently badged as research is, in reality, often (rather poor) evaluation. Why is so much of the published literature under-theorised? Recent papers on the state of medical education research have suggested that we are at a crossroads if we are to throw off the mantle of the perpetual embryo. Recognising that scholarship in medical education is broader than pure research alone we are, nevertheless, at a point in time when we need to debate where medical education research is going, and how we can ensure it is taken seriously and properly funded. The number of professionals with higher degrees in medical education is rising, a specific research strand is introduced at this AMEE meeting and a new academic organisation of medical education is being proposed in the UK. It is time to re-examine where we are going with research in medical education and how we will get there.