SESSION 9

9A   Plenary: Trends in Medical Education – why is there a need for a regulator?
Jim McKillop (Chair of Undergraduate Board, General Medical Council, UK)

This presentation will explore the role of a national regulator in medical education, which is of considerable relevance at this time of rapid and substantial changes in medical education. Following a discussion of the diversity of medical education and its regulation in Europe, the UK situation will be used to illustrate a number of generic issues.

The General Medical Council (GMC) now has a statutory responsibility for all stages (Undergraduate, Postgraduate and CPD) of medical education and training in the UK. The lecture will examine the importance of the regulator in encouraging innovation and in supporting appropriate changes through its key functions of developing standards and assessing delivery of them by those providing education. After outlining the requirements the GMC sets for the various stages of education and training, the approach will be illustrated in more detail by considering the standards set for undergraduate medical education in Tomorrow's Doctors. Following a discussion of some key principles of Quality Assurance by a regulator, the importance of professionalism and ensuring individual fitness to practise will be emphasised.

The presentation will finish with an analysis of some challenges facing regulators of medical education.

9B   Plenary: Perspectives on Professionalism
Fred Hafferty (Professor of Medical Education, Program in Professionalism & Bioethics, Mayo Clinic, USA)

Professionalism is on today's agenda in medical education. There remains some confusion, however, about what is meant by the term, with a range of interpretations promoted from different perspectives. This presentation highlights the different professionalism movements including an international perspective with comparative studies from different countries. The significance of professionalism for the training of the doctor of the future has important implications for curriculum development, for the learning opportunities provided and for the assessment methods adopted.

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SESSION 10

10A   Symposium: The Curriculum and Training the Future Healthcare Professional
Panel: Trudie Roberts (University of Leeds Medical School, UK) (Chair); Jim McKillop (Regulator, Undergraduate Board for GMC, UK); Elaine Brock (Patient); Klarke Boor (Netherlands); (Fedde Scheele (Netherlands); Cees van der Vleuten (Discussion leader) (Netherlands); Mereke Gorsira (Scribe) (Netherlands)

This symposium will look at how well present curricula are preparing the doctor for the future and who has a legitimate stake in dictating what goes into those curricula.

Following an introduction to symposium, there will be presentations from:
Professor Jim McKillop (Regulator; Undergraduate Board for the GMC in the UK) – What should medical school's curricula provide?
Elaine Brock (Patient) – What do you expect from a newly qualified doctor?
To be confirmed (Employer) – What do I expect from a newly qualified doctor?
Dr Klarke Boor (Resident) – Learning climate

Professor Fedde Scheele (Clinician) – Making clinical errors
After the presentations the audience will be invited to discuss with the panel the messages for the future curriculum. During the wrap-up the panel will be asked to prioritize one message. The session will be recorded by a scribe.

10B Symposium: Postgraduate Education and Continuing Professional Development

Panel: Stuart Macpherson (Former Chair of PMETB, UK) (Chair); John Collins (Visiting Professor, Nuffield Dept of Surgery, UK); John Jenkins (Queens University Belfast, UK); Bernard Maillet (Secretary General, European Union of Medical Specialists, Belgium); Al Aparicio (CPD Director, American Medical Association, USA)

Postgraduate medical education and continuing professional development have become issues of global significance, appeal and dimensions. This session will explore current trends internationally, and how postgraduate education and CPD can best contribute to the training of the doctor of the future. Issues discussed will include the expected learning outcomes and competencies, the application of new learning technologies, the use of performance-based and on-the-job assessment, the role of the trainer or tutor and the problem of the under-performing doctor.

10C Short Communications: Staff/Faculty Development 1

10C1
Making good doctors good teachers
K Foster[1] and R Laurent[2] ([1]University of Sydney, Sydney Medical School Northern; [2]Royal North Shore Hospital, Sydney, Australia)*

Background: Doctors are expected to teach but many are reluctant through lack of teacher training. In response to requests from clinicians who were keen but lacked confidence in their teaching skills we developed an education program tailored specifically to their needs. The emphasis was on developing expertise in teaching effectively in busy clinical environments.
Summary of work: The program had five ninety-minute modules. These were; Bedside Teaching, Feedback and Supervision, Teaching Physical Examination and Small Group Teaching, Facilitating Development of Clinical Reasoning Skills and Giving Effective Lectures. An experienced medical educator and a senior hospital clinician facilitated fedde course. It was practical, highly interactive and given in a supportive and collaborative learning environment.
Summary of results: Eighty-one clinicians have participated in the course. The main outcomes were increased confidence in bedside teaching, teaching more effectively on ward rounds and reduction in need for support with teaching. Participants reported a better understanding of basic educational theory and its relevance to clinical teaching.
Conclusions: All clinical teachers require guidance and encouragement in developing their teaching skills. A teaching course must be practical and provide skills relevant and applicable to their teaching environment.
Take-home messages: A short focused teaching course can improve clinicians' teaching skills and motivation to teach at all levels.

10C2
Creating master teachers with a nod to deliberate practice
L J Cooke[1], K McLaughlin[1], A Peets[2], T Donnon[1] and B Wright[1] ([1]University of Calgary, Alberta; [2]University of British Columbia, Vancouver, British Columbia, Canada)*

Background: Deliberate practice (DP) has been shown to enhance learning and performance in athletics, music, and procedural skills. This presentation describes how principles of deliberate practice were used to design a training program for medical teachers.
Summary of work: The University of Calgary, Faculty of Medicine initiated the Master Teacher program in 2007 to address the need for more preceptors to teach an expanding medical school class. All Master Teachers are expected to complete the Teaching Scholars in Medicine Certificate Program (TSIMP), a one-

hundred-hour program of faculty development blending educational theory with skills-based teaching experience, feedback, and reflection. The TSIMP curriculum design was centered on principles of DP. Evaluation occurred across all four of Kirkpatrick's levels (reaction, learning, behaviour, and results), using qualitative and quantitative measures, including semi-structured interviews, retrospective pre-post self-efficacy ratings, teacher ratings, and student performance.

Summary of results: The curriculum was favourably evaluated by all participants, with enhanced self-efficacy in teaching performance, the development of a spontaneous community of learning amongst the Master Teachers, and excellent teacher ratings by students.

Conclusions: The Teaching Scholars in Medicine Certificate Program enhances self-efficacy of medical teachers in their teacher role.

Take-home messages: Employing principles of DP in designing Faculty Development initiatives may enhance efficacy of the initiatives.

10C3
What is a teaching style, and does it matter?
A Stokes (University of Oxford, Department for Continuing Education, Oxford, UK)*

Background: Several inventories have been developed for use by health professionals to promote reflection on teaching. These tools involve a scoring mechanism and indicate a profile described variously in terms of 'teaching perspectives', 'teaching approaches' or 'teaching styles'.

Summary of work: A critical review of the literature has been undertaken to explore the theoretical positions, conceptual frameworks and empirical evidence associated with these inventories, and their use in faculty development.

Summary of results: There is considerable variation in the extent and quality of the evidence-base and in the explicitness and coherence of the associated theoretical frameworks. The evidence-base relates to two levels: the validity of the constructs employed in the inventory and the evidence of the value of using the inventory in developing teaching expertise.

Conclusions: The findings raise ethical and pedagogical issues relating to the use in faculty development of tools which lack an evidence-base but which have been found to have heuristic value in teaching development.

Take-home messages: Just because a faculty development tool lacks an evidence base does not mean we shouldn't use it, but the ways in which it is used and the point at which critical questioning of the evidence base comes to the fore need careful consideration.

10C4
To teach is to learn: The impact of bedside teaching on the clinical skills of clinician-teachers
M D Wenrich, M B Jackson and K Ajam (University of Washington School of Medicine, Seattle, WA, USA)*

Background: The relevance of bedside teaching for advancing clinician-teachers' own clinical skills has received little attention. If bedside teaching advances physicians' skills, then it has unique, extrinsic value. This study examined the impact of bedside clinical-skills teaching on faculty's skills and patient care.

Summary of work: Semi-structured interviews with 31 faculty at one medical school; maximum three interviews per faculty over five years. We elicited insights about a curriculum focused on year-long bedside teaching for pre-clerkship students. One question was: "To what extent has teaching influenced your own clinical skills?" Grounded theory guided analyses.

Summary of results: Nearly all faculties believed bedside teaching improved their own clinical skills. Three process themes emerged: 1) constructing knowledge/skills (relearning, refreshing, new learning); 2) deconstructing clinical experiences (slowing down, deepening/expanding practice, increased process awareness, practicing at more basic level); 3) reconstructing the mindful practice (held to a high standard, seeing patients through students' eyes). Two outcomes themes emerged: 1) skills improvement (physical examination, interviewing, critical thinking); and 2) implementing a mindful practice (increased self-confidence, enjoyment, patient-centeredness).

Conclusions: Faculty who performed sustained bedside teaching perceived substantial benefits for their own skills and practices.

Take-home messages: Sustained bedside teaching is an effective faculty-development tool and source of clinician-teacher skill enhancement in addition to teaching students.

10C5

Clinical teaching improvement: The transportability of the Stanford Faculty Development Program

J Johansson[1], *K Skeff*[2] *and G Stratos*[2] *([1]Department of Surgical Sciences - Anaesthesiology & Intensive Care, Uppsala University Hospital, Sweden; [2]School of Medicine, Stanford University, USA)*

Background: The Stanford Faculty Development Center (SFDC) developed a teaching improvement course for medical teachers that has been widely disseminated, using a train-the-trainer model. We were curious to see if cultural factors might influence the applicability and impact of the course when delivered to non-American participants by a facilitator from their culture.

Summary of work: A Swedish anaesthesiologist was trained in October 2004 at Stanford University School of Medicine. During 2005-2007 he delivered five faculty development seminar series at Uppsala University Hospital to 40 physicians. Participants rated the usefulness of the seminar series and retrospective pre- and post-seminar ratings were used to assess effects on participants' teaching skills and behaviours.

Summary of results: Participants rated the seminars as highly useful (M=4.8, SD=0.4). Participants' ratings of their teaching ability indicated significant increases across a variety of clinical and non-clinical teaching settings (p<0.001), and positive changes in self-ratings of teaching behaviours were found for all seven educational categories assessed (p<0.001).

Conclusions: This faculty development model is highly transportable to medical teachers in Sweden, and capable of producing positive results, consistent with those found in the United States.

Take-home messages: Cultural factors did not influence the impact of an American faculty development program when transported by a Swedish facilitator to Sweden.

10C6

Institutional Impact of Individual Faculty Development Projects

D Diserens[1], *S Friedman*[1], *E Amaral*[2], *H Campos*[3], *T Chacko*[4], *T Singh*[5], *A Supe*[6], *P Morahan*[1], *W Burdick*[1] *([1]FAIMER, Philadelphia, USA; [2]Universidade Estadual de Campinas, Sao Paulo, Brazil; [3]Universidade Federal do Ceará, Fortaleza, Brazil; [4]PSG Institute of Medical Sciences and Research, Coimbatore, India; [5]Christian Medical College, Ludhiana, India; [6]GS Medical College, Mumbai, India)*

Background: A central element of the FAIMER fellowships is the education innovation project. Projects address change in curriculum, assessment, teaching methods, community activities and other areas. In implementing projects in their home institutions, Fellows apply change management and leadership skills gained through the fellowship. Projects, in addition to being vehicles for adult learning, also provide the opportunity to create and evaluate sustained institutional change.

Summary of work: Sixty-four percent of the 2007 classes from FAIMER's four regional programs in India and Brazil completed an online survey 6-9 months after fellowship completion, answering questions about institutional impact of their projects.

Summary of results: Data show that approximately one-third of projects were incorporated permanently in institutional curricula, policies or procedures. A majority indicated their project was replicated somewhere else; its scope had widened to other subjects, years, departments and/or institutions; and that it had involved faculty from other departments. The primary project facilitators were a core group of faculty and availability of pilot data. Project barriers included workload and faculty opposition.

Conclusions: Individual faculty development projects can have institutional impact, including permanent change in curricula and development of faculty groups focused on educational improvement.

Take home message: Across geographic regions, individual innovation projects have institutional as well as individual results.

10D Short Communications: Clinical Teaching 4

10D1

Patient-centered learning at an education ward-first year nursing students perceptions

K Manninen[1], *C Silén*[1], *E Welin Henriksson*[2] *and M Scheja*[3] *(Karolinska Institutet [1]Department for Learning, Informatics, Management and Ethics, Stockholm; [2]Department of Neurobiology, Care Sciences and Society, Huddinge; [3]Department of Education in Humanities and Social Science Stockholm University, Sweden)*

Background: Studies have shown that students appreciated patient-centered learning and education wards where they can practice their profession under authentic but controlled conditions. At an education ward at Karolinska University Hospital nursing students are on rotation during six weeks. Four nurses, one nursing assistant and one doctor participate in supervision. It is the first clinical placement for the students. The goal is to train students in their profession and to practice teamwork with other students and healthcare professionals.

Summary of work: In this study first year nursing students' perceptions of what they learn from their encounters with patients, supervisors, the clinical environment, other students and people with other professions during clinical practice at an education ward was analyzed. Semistructured individual and group interviews with 19 students after their first clinical practice were conducted.

Summary of results: The results show that patients are the main source for students learning. Taking care of patients independently and together with other students under support from supervisors supports their learning.

Conclusions: Practice at an education ward gives students a holistic perspective on patient care and running a ward.

Take-home messages: Practice under authentic but controlled conditions early in the education stimulates students understanding of the nursing profession.

10D2

The impact of a basic clinical and communication skills education during preclinical years on the anxieties of male and female students commencing clinical practice

S Cali*, O Sarikaya and S Kalaca (University of Marmara, School of Medicine, Department of Public Health, Istanbul, Turkey)

Background: Many medical students experience considerable anxiety that may have negative effects on their learning and performance when starting clinical practice.

Summary of work: We aimed to determine the impact of a basic clinical and communication skills education during preclinical years on the anxieties of medical students starting clerkships. The first group (n=86) entered the study in 2001 and took no basic clinical and communication skills education. The second group (n=142) entered the study in 2007, after the implementation of a 3-year basic clinical and communication skills education during the preclinical period. In order to evaluate the perceived anxiety researchers conducted a questionnaire with 39 issues presented as 4-point Likert scales.

Summary of results: The first group had significantly higher anxiety for 8/39 situations. More detailed analysis showed that females had significantly higher anxiety; 2001 female group showed higher anxiety for 22/39 situations, males had higher anxiety for 1/39 and 2007 female group showed higher anxiety for 12/39 situations. 2007 male and female groups expressed less anxiety for 2/39 and 13/39 situations respectively.

Conclusions: Female students showed significantly higher anxiety. Differences in rankings between males and females were consistent between 2001 and 2007. The preclinical training program was considerably more effective for females.

Take-home messages: Preclinical education helps reduce anxiety when starting clerkships.

10D3

Why parents and children become involved in medical student teaching

R Pinnock[1], J Weller[2], Boaz Shulruf[2], Peter Reed[3] and Satomi Mizutani[2] ([1]University of Auckland, Dept of Paediatrics; [2]Dept of Medical Education; [3]Starship Hospital, Auckland, New Zealand)

Background: This is the first study to examine why parents and children of different ages admitted to hospital agree to become involved in medical student teaching. We wanted to establish whether they considered they needed to give consent before becoming involved, whether this was routinely sought and what influenced their decisions.

Summary of work: 105 parents of children less than 6 years old and 34 children between 10 and 15 years old and their parents completed a questionnaire. 32 children between the ages of 6 and 10 years and their parents were interviewed using a semi-structured interview.

Summary of results: Most parents and children are prepared to see medical students, consider they have a responsibility to teaching, however consent must always be asked for. Both are motivated by altruism, however, fear of emotional distress or pain can lead them to refuse. There were some minor ethnic

differences in the reasons given for seeing medical students. There were no major differences based on previous experience of seeing students or between parents and children.

Conclusions: It is reassuring that parents and children have such a positive attitude to student teaching.

Take-home messages: Our students can be reassured that children and parents admitted to our hospital that they are prepared to help them learn clinical skills.

10D4

Enhancing clinical learning in the workplace

K Magnier[1], R Wang*[2], V H M Dale[1], R Hammond[3], R Murphy[2] and M Pead[1] ([1]Royal Veterinary College, University of London; University of Nottingham, [2]School of Veterinary Medicine and Science; [3]School of Education, Nottingham, UK)*

Background: The HEA-NTFS funded 'Enhancing Clinical learning in the Workplace' (ECLW) project seeks to gain a critical understanding of the clinical workplace from the student and placement provider perspectives. This is a collaborative project between the Royal Veterinary College (RVC) in London and the Schools of Veterinary Medicine and Science (SVMS) and Education in Nottingham.

Summary of work: Pilot studies were conducted in RVC and SVMS over two months with two groups of students and placement providers. A digital audio recorder, digital video camera and notepad were used to record interviews and unstructured observations.

Summary of results: Students and placement provider expectations were congruent, both valuing experience of surgical procedures and the chance to develop consultation skills. During the placements, students became more aware of the essential role of paraprofessionals in the workplace. They recognised that workplace learning is dependent on caseload and is therefore often 'unexpected'. They also reported a 'big jump' between theory and practice, valuing this experiential component of their training in an unpredictable and complex environment.

Conclusions/Take-home messages: The clinical workplace is of critical importance in preparing students for 'day one' of professional practice. Emerging themes from the pilot studies include student development of interprofessionalism, contextualisation of theory and practice and attainment of core competencies.

10D5

Effectiveness of an educational video as an instrument to refresh and reinforce the learning of a nursing technique: A randomized controlled trial

C Ruffinengo[1], L Salina*[2], P Massariello[1], L Garrino and V Dimonte ([1]Human Resource Development, ASOU San Giovanni Battista, University of Turin; [2]ASL TO 2 Maria Vittoria, Turin, Italy)*

Background: The Undergraduate Nursing Course has been using videos for the past year or so. Videos are used for many different purposes such as association, nurse refresher courses, reinforcement, sharing and comparison of knowledge with the professional and scientific community. However, there is little evidence on the efficacy that video has on learning.

Summary of work: The purposes of this study were to estimate the efficacy of the video (movement of a patient not collaborating from the supine to the lateral position) as an instrument to refresh and reinforce nursing techniques. A two arm Randomized Controlled Trial (RCT) design was chosen: both groups attended lessons in the classroom as well as in the laboratory; a month later while one group received a paper format as a refresher, the other group watched the video. Both groups were evaluated by blind evaluators with a measuring instrument that could supply a range of values between 0 and 53.

Summary of results: Two hundred and twenty-three students accepted to take part in the study. The difference observed between those who had seen the video and those who had read the technique turned out to be on average of 6,19 points in favour of the first ($p < 0,05$).

Conclusions: The results of the RCT demonstrated better adhesion to the technique among students who had seen the video, obtaining greater performance. Therefore videos could be useful tools to refresh and reinforce concepts learnt during nursing courses.

Take-home messages: The use of educational videos could become a routine instrument for student training.

10D6

A study to investigate the effects of incorporating human factor training into immediate life support training for final year medical students

D Randles, G Kessell, J Carling, G Bone and D Murray (James Cook University Hospital, Middlesbrough, UK)*

Background: Resuscitation of patients in cardiac arrest is a particularly stressful time for healthcare workers. The incidence of human factor related errors is likely to be particularly high at this time. Formal human factor training in healthcare remains the exception rather than the norm and its impact is still not understood. The aim of this study was to evaluate the effects of interventional human factor training on team performance during cardiac arrest scenarios in the undergraduate population.

Summary of work: 24 final year medical students were randomised to receive either standard Immediate Life Support (ILS) training or ILS integrated with human factor training. Test scenarios were then video recorded and marked using the Anaesthetic Non-Technical Skills (ANTS) system by a blinded observer. Time to institution of Basic Life Support, rhythm recognition and defibrillation were also assessed.

Summary of results: Participants receiving human factor training showed significantly better non-technical skills both in aspects of task management and team working. They also showed a trend towards more rapid rhythm recognition and defibrillation.

Conclusions/Take-home messages: Incorporating Human factor training into intermediate life support training is effective in behavioural modification in final year medical students and may improve overall conduct of resuscitation. Further studies are required to ascertain wider applicability towards resuscitation training.

10E   Short Communications: e-Learning Case Studies: Postgraduate

10E1
The engagement of postgraduate medical trainees with e-learning
S F Smith, M R Partridge and N J Roberts (National Heart and Lung Institute, Imperial College, London, UK)*

Background: In the United Kingdom, a proliferation of internet-based and other e-learning materials have been produced by the professional bodies responsible for the postgraduate accreditation of clinicians, learned societies, deaneries and other institutions involved in postgraduate clinical training. Despite this, it is unclear how fully trainees engage with e-learning materials.

Summary of work: We have explored the views of recent medical graduates and respiratory trainees using questionnaires (n=98), telephone interviews (n=13) and three nominal group technique sessions (n=21 participants). All the doctors were recruited from two hospitals in a single London-based NHS Trust.

Summary of results: Although over 90% of junior doctors reported using the internet at least once a week for educational purposes, fewer than half (41%) actually accessed the online material they were requested to study prior to a timetabled teaching session. Senior trainees seem to be generally enthusiastic about the use of e-learning tools, but stressed the importance of social interaction with peers and none was willing to substitute more than half of their face-to-face training days with e-learning activities.

Conclusions: Much remains be to discovered about the perceptions of e-learning materials by doctors in training.

Take-home messages: Despite apparent enthusiasm, there is a mismatch between reported and actual engagement with e-learning by postgraduate clinical trainees.

10E2
Mixing, Muddling or Meddling? Social engineering in group allocation on an online medical education programme
J MacDonald, P Wilby, L Allery and L Pugsley (Cardiff University, Postgraduate Medical and Dental Education, Cardiff, UK)*

Background: This paper explores the impact of group allocation on learner interaction on an online programme. Often learners are allocated groups on a random basis, or by determining categories of learners and assigning group membership accordingly. The Postgraduate Certificate, Diploma and Masters online programme at Cardiff has adopted a different approach in order to explore the effects of different group selection criteria on the levels of learner participation in online group discussions and activities.

Summary of work: Students were allocated groups using the following methods: 1) Random allocation of students, 2) Mixed groups of learners with high and low participation levels, 3) Separate groups of learners with high and low participation levels.

Summary of results: An analysis of the number and type of online postings made by students in different groups was undertaken. Levels of participation and interaction were considered. Posts were categorised and thematic analysis was conducted.

Conclusions: Manipulating the composition of discussion groups has impacted upon patterns of group behaviour. Issues are raised regarding potential for significant impact on the quality of learning experiences and the role and influence of the programme leader in assigning learners to groups.

Take-home messages: In order to ensure educational experiences are maximised for all learners, group allocation issues should be considered.

10E3

Electronic tools for tutoring residents

Teresa Martinez-Cañavate and Jose Luis de la Rosa* (Iavante Foundation, Regional Ministry of Health of Andalusia, Spain)

Background: More than 1500 tutors work in the public system of health in Andalusia in the education of around 6000 residents. The Regional Ministry of Health of Andalusia principal to provide electronic tools to improve education management.

Summary of work: The Regional Ministry of Health has developed a collection of electronic tools that support the tutors in the education of residents and monitoring the progress of learning, such as electronic interviews and meetings, continuous assessment in activities like clinical sessions, internal and external rotations, yearly and final evaluation, etc.

Summary of results: A centralized information system supports the activities of education has been deployed in a context with more than 10000 people working on residents education with an increasing 80% of satisfaction from all implied parties.

Conclusions: The electronic tools are a leading solution to increase the time that tutors dedicate to residents' education and provides a sound base to detect needs in the education system from a global point of view.

Take-home messages: Electronic tools for residents' education and tutoring provide an efficient way to improve the process of residents' education.

10E4

Impact of implementation of an e-Learning programme on Electronic Foetal Monitoring

U Vinkel*, L Kristoffersen and L Hvidman (Aarhus University Hospital, Skejby, Department of Obstetrics and Gynaecology, Aarhus N, Denmark)

Background: In 2005 an e-Learning programme on Electronic Foetal Monitoring (EFM) was developed at a delivery ward with 4900 deliveries per year to enhance the quality of interpretation.

Summary of work: The programme consists of a theoretical module and a module with 16 interactive cases including tests. Midwives and doctors working at the delivery ward are expected to pass the programme within the first three months of employment. The head of the delivery ward has access to information on who completes the course. Midwives are reminded to complete the programme by the chief midwife, whereas less pressure is put on the doctors.

Summary of results: In March 2010, 94 midwives and 37 doctors worked at the delivery ward. Seventy-nine (84%) of the midwives and 19 (51%) of the doctors have completed the programme. The programme is well accepted by the midwives, whereas doctors are less likely to complete the course. Since implementation of the programme misinterpretation of EFM traces and the frequency of severely acidotic newborns have decreased.

Conclusions: Implementation of an E-Learning programme resulted in improved interpretation of EFM and a decrease in adverse outcome for the newborns.

Take-home messages: e-Learning programmes can enhance clinical practice. Support of the head of department is important for successful implementation.

10E5

Stroke Training: A partnership between the NHS and the voluntary sector

Lynn Reid* (Chest, Heart & Stroke Scotland, Edinburgh, UK)

Background: Following the Scottish Stroke Services Audit (1999) Chest Heart and Stroke Scotland (CHSS) commissioned the Scottish Association of Health Councils to undertake a survey of patient and carers' views of Scottish stroke services. Results from this survey suggested that staff caring for people following stroke often showed a lack of awareness of the specific challenges that stroke presented. In partnership with NHS Lothian a training and education needs assessment was carried out for all staff working in the area of stroke management.

Summary of work: Stroke training began in Lothian in 2001 and has since been developed in partnership with the stroke managed clinical networks in seven of fourteen NHS boards in Scotland.

Summary of results: The training is offered to all members of the MDT and to all grades and bands. Chest, Heart and Stroke Scotland, in partnership with NHS Education Scotland and the University of Edinburgh, have also developed a stroke e-learning resource on the WWW to ensure equity of training provision throughout Scotland.

Conclusions: The stroke training courses and the stroke e learning resource have been cited in the NHS QIS Stroke Services Review (2005) and the Better Heart Disease and Stroke Care Action Plan (2009) as examples of good practice.

Take-home messages: This stroke training partnership has proved to be extremely successful and is supported by the National Advisory Committee for Stroke in Scotland.

10E6
Assessment of learning achievements in an e-Learning course on Avian influenza, for official veterinarians
B Alessandrini*[1], L Valerii[1], S Damiani[2], L Ravarotto[2], L Busani[2], C Ceolin[2], C Terregino[2], M Cecchinato[2], S D'Albenzio[1], O Pediconi[1], S Marangon[2] and M Dalla Pozza ([1]Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise, Teramo; [2]Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro (Padova), Italy)

Background: The Italian Ministry of Health and the National Reference Centres for Epidemiology and Avian Influenza, implemented an e-Learning course on avian influenza for official veterinarians involved in disease outbreak management, laboratory diagnosis and policy making. Tutor-supported self-learning, collaborative learning, and virtual classes were used. The course lasted 16 hours, spread in four weeks. Learning evaluation assignments required different skills: comprehension and memory for tests, problem solving for project work and case-study, and communication skills for press release.

Summary of work: Learning evaluation assignments required different skills: comprehension and memory for tests, problem solving for project work and case-study, and communication skills for press release.

Summary of results: All 705 participants completed the evaluation. 96.2% considered the course very good, nobody gave negative evaluations. Results also showed that Italian official veterinarians are improving their confidence with ICT. The increased expertise allowed them to manage different assignments requiring an enhanced level of expertise in the use of e-Learning tools and in the management of social dynamics.

Conclusions: Cross-competences directly influence the final outcomes of e-learning activities and affect the quality of learning results.

Take-home messages: The learning environment should be implemented so as to support the development of such skills being them relevant for achieving learning objectives.

10F   Short Communications: Assessment: Feedback

10F1
Assessment driving learning: introducing formative workplace based assessments into the curriculum
J Ibison*, E Miles, C Shoults and F Afgan (St George's, University of London, UK)

Background: Students request more feedback on their skills but the frequency of observed practice on clinical attachments is variable. Clinical attachment assessment was reshaped in order to give focused feedback to students via the assessment structure and introduction of workplace based assessments (wpbas).

Summary of work: A generic assessment structure was devised, comprising four elements (attendance; clinical practice; practical procedures and professional behaviour). In addition to supervisor grades and completion of formative wpbas (but not level of achievement) contribute to the element grade. The grades for each element accrue and an algorithm determines the final grade, except for professional behaviour where final grades are determined by a committee.

Summary of results: To date, 280 students have completed 562 clinical attachments. Of these attachments, 'attendance' was less than acceptable in six (1.1%), acceptable in 157 (28%) and excellent in 399 (71%) and 'professional behavior' was less than acceptable in four (0.7%). Regarding 'clinical practice', in 253 (45%) attachments students were excellent and in 4(0.7%) attachments were less than acceptable. Students completed 1496 practical procedures (range 0-14, median 5) although 15 (5.4% of 280) have completed none. Three (0.5%) students did not complete the minimum number of wpba. Half of the students described obstacles to achieving supervision for wpbas.

Conclusions: Increased and specific feedback to students has been achieved. Barriers to implementation have included workload for assessors; assessor availability; and variability in IT capacity necessitating a paper-based approach.

Take-home messages: Structuring assessments for clinical attachments can drive focused feedback to students on skills central to clinical practice.

10F2

Personal characteristics influencing feedback perception and feedback acceptance: A review of the literature

Monica van de Ridder[1,2], Margo Habraken[2], Karel Stokking[3] and Olle ten Cate ([1]Albert Schweitzer Hospital, Leerhuis, Dordrecht; [2]UMCU School of Medical Sciences, Utrecht; [3]Utrecht University, Department of Educational Sciences, Utrecht, The Netherlands)*

Background: To understand the effectiveness of feedback it is necessary to be aware of influencing variables in the feedback process. In this process Feedback Recipients (FR) play an important role because they receive and have to internalize the feedback. However, research mostly focuses on variables related to task performance, observation instruments, observation methods, and the feedback communication. FR's personal characteristics and their influence on feedback perception and feedback acceptance receives less attention[1].

Summary of work: The goal of this study is to determine FR's personal characteristics which influence feedback perception and feedback acceptance. A literature search for English language, peer-reviewed journal articles, in PubMed, ERIC and PsycINFO was performed. Among the search terms were: 'feedback', 'individual differences', 'personal characteristics', 'feedback propensity', 'feedback preference', and 'feedback receiver'. Two readers independently rated the abstracts according to inclusion and exclusion criteria.

Summary of results: Empirical studies on feedback perception and acceptance show that FR's Sex, Self-esteem, Feedback propensity, Locus of control, and Shyness influence both perception and acceptance. FR's Age, Self-efficacy, and Mood influence feedback acceptance. FR's Performance and Social Anxiety influence their feedback perception.

Conclusions: Personal characteristics give further insight in understanding the feedback effectiveness.

[1] Ilgen DR, Fisher CD, Taylor MS. Journal of Applied Psychology 2006;64:349-371.

10F3

The structure of failure - an analysis of the patterns of consulting behaviour amongst failing candidates in a high-stakes postgraduate OSCE towards enhancing the quality of candidate feedback

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Background: Providing failing candidates with feedback is normal practice in high stakes assessment. After an OSCE, this can comprise individual case marks, possibly generalized from single cases (e.g. from myocardial infarction to 'cardiology' or 'emergencies'), through supposedly generic assessed domains (e.g. 'maintaining patient welfare'). This may be seen as perverse in view of the literature on case- and context-specificity of clinical skills. We explored another approach to combine fine-grain assessment data across candidates and cases towards providing candidates feedback on the pattern of their behaviour, without imposing a pre-conceived structure of clinical performance.

Summary of work: 8,352 of 36,296 candidate-case encounters in the MRCGP Clinical Skills Assessment in 2009 were failed. Examiners then have 16 feedback specifics which they can then tick to describe the reasons for failure (e.g. 'does not demonstrate an awareness of management of risk and health promotion'). These were subjected to exploratory factor analysis to ascertain patterns.

Summary of results: Four factors emerged: poor data-collection/diagnosis, but management shared; disorganised/unsystematic, generally; doctor-centred, but management alright; and case focus- and risk-blind. Factor scores showed differences amongst candidate sub-groups.

Conclusions: The factors are more complex than imposed domains.

Take-home messages: Analysis of the structure of failure may help develop more sophisticated feedback than that based on pre-conceived performance domains.

10F4

Trainees' perceptions of the educational value of feedback given in case based discussion assessments

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Background: Little information exists regarding the nature and quality of feedback in case based discussions (CBDs).

Summary of work: Paediatric trainees at ST1 and ST2 level within a deanery completed a semi-structured online questionnaire (n=27) and taped interviews (n=9) exploring the educational value of CBDs and associated feedback. Data from the questionnaire informed interview design and interviews were performed until saturation was achieved.

Summary of results: Qualitative data were analysed using a thematic frame-work analysis. Trainees viewed CBDs as educationally valuable, aiding reflective learning, improving decision making skills and effecting a change in practice. Opinions varied greatly regarding how useful they found the feedback and several contributing factors were identified. Feedback was perceived as more educationally valuable from assessors who had a positive attitude towards CBDs, understood the process and had experience in leading them. Time constraints and assessments performed in less suitable environments had a negative impact on feedback.

Conclusions: CBD assessments present an opportunity for good quality learning and feedback, which is valued by trainees, providing there is a commitment to the educational aspects of the process by both supervisor and trainee.

Take-home messages: Supervisors should be aware of the key elements that facilitate constructive feedback in CBDs and may benefit from specific training in this area.

10F5

Is feedback in work-based assessment useful for learning?

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Background: Providing feedback to trainees by supervisors, based on observation of daily practice, is the most common approach for assessment of trainees' clinical performance. To what extent this feedback is meaningful and influences learning is not yet fully understood. Therefore our research question was: Is feedback in work-based assessment seen as useful for learning? We wanted to know how observation and feedback are applied in these situations, and if structured feedback forms (like the Mini-CEX) are used.

Summary of work: We performed our study in the Dutch general practitioners (GP) training setting. Because the field is not highly explored yet, we conducted a qualitative study and interviewed 22 GP-trainees on two different institutions.

Summary of results: The study is still in progress. Preliminary results show that trainees see the benefits of observation and feedback, but they don't like to be observed. They use video-observation and direct-observation, but they feel that both interfere with normal practice. Trainees differ in their opinion about feedback forms. It can promote observation and give structure, but it was sometimes seen as obligation and hindrance.

Conclusions Take-home messages: The study gives insight in the way GP-trainees experience and appreciate observation of performance in daily practice and feedback based on that.

10F6

Applying language technologies to provide individualised formative feedback in group learning contexts

Alisdair Smithies*, Isobel Braidman, Gillian Armitt, Fridolin Wild and Debra Haley (University of Manchester, Manchester Medical School, Manchester, UK)

Background: In group learning contexts, learners often have difficulty identifying their individual learning objectives and requirements. This can be helped by personalised formative feedback from tutors. To provide this, tutors need to ascertain an individual participant's conceptual understanding.

Summary of work: Language technologies are being applied to conceptual diagnosis and delivered through a Web-based service, CONSPECT, which generates enhanced concept map visualisations, 'conceptograms', from text-based learning evidence. Learners submit their learning materials to the service which visualises the extent to which they have evidenced their understanding of concepts. Learners can compare their own conceptograms with those of other (anonymised) users, or to a reference conceptogram, generated from tutor materials. Learners can release their conceptograms to peers and tutors as prompts for feedback.

Summary of results: Early validation results, based on focus groups, interviews and a questionnaire, suggest that learners view the outputs of this service as both relevant and helpful to the support of their studies.

Conclusions: The CONSPECT service can be used by tutors and learners to identify opportunities for development of an individual's conceptual understanding in a given domain area.

Take-home messages: This application of language technologies has the potential to support diagnosis of conceptual understanding and improve tutor effectiveness through timely, targeted formative feedback.

10G   Short Communications: Problem Based Learning 1

10G1
Using role plays to reinforce peer learning in PBL
L Wilkerson and S Krasne (David Geffen School of Medicine, University of California, Los Angeles, USA)*

Background: Students come to medical school with the bias that what it is important to learn comes from the faculty. In a problem-based learning (PBL) environment, students need to develop the ability to learn from peers.

Summary of work: To assist students in this transition, we have added a role-play component to PBL cases. The role-play is written into a section of the case in a return tutorial to set up a situation in which students face being confronted by someone with questions, e.g., patient, family member, faculty member, or post-graduate trainee. In preparation for this encounter, students have 10 minutes to discuss with one another a list of possible questions that might be asked. After this period of student-to-student discussion, the tutor rejoins the group in the designated role. S/he directs two to three of the possible questions to specific students who had not previously demonstrated understanding of the issue. After the targeted student attempts an answer, the tutor opens the discussion to the entire group. The questions also indicate to students the core learning issues for which they can be held responsible in subsequent assessment.

10G2
Self-reflection and feedback in PBL
A Holen (Norwegian University of Science and Technology, Trondheim, Norway)*

Background: Self-reflection, feedback and other interpersonal evaluations of behaviour are essential parts of PBL, often referred to as meta-cognitive activities.

Summary of work: In this study, personality traits, gender and attitudes towards PBL were explored by questionnaires to explain how students regard this meta-cognitive activity.

Summary of results: It was found that neuroticism and openness to experience were important determinants in explaining how the students regarded these meta-cognitive activities.

Conclusions: The implications of the findings will briefly be discussed.

Take-home messages: Evaluations have to be delivered skilfully to serve their purpose.

10G3
Self, peer and tutor assessment in PBL at Bond University
C Tom (Bond University, Faculty of Health Sciences and Medicine, Gold Coast, QLD, Australia)*

Background: The Bond University incorporates the problem-based learning (PBL) approach in providing an integrated medicine program to its students. One aspect of the PBL at Bond is to assist students in their assessment of what is working well in their tutorial group and what needs to improve for successful learning outcomes for all students. An important aspect of the PBL tutorial process is where student evaluation occurs in the small group session and is derived from self, peer and tutor (Albanese, 2007).

Summary of work: Bond University has implemented a comprehensive, structured and systematic process for self, peer and tutor evaluation in PBL in the MBBS program.

Summary of results: Students reflect on the quality of participation and presentation skills of themselves and 2 others to the PBL process and formally record their feedback against specified criteria in weeks 3, 6, 9 and 12 of the MBBS program.

Conclusions: All students in the Bond MBBS program receive informal and formal peer assessment of their performance in the PBL process.

Take-home messages: Self, peer and tutor assessment and feedback using a structured approach enhanced students' reflective practices.

10G4

An e-PBL model to promote individual cognitive learning processes

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Background: Sungkyunkwan University School of Medicine has implemented problem-based learning (PBL) curriculum for over 10 years. e-PBL has been added in the renewed curriculum to supplement traditional PBL in fostering student knowledge acquisition and clinical reasoning skills.

Summary of work: Questionnaires were administered to a cohort of 2nd year medical students (N=37) before and after they were introduced to e-PBL and the responses were compared. The questionnaires consisted of 20 five-point Likert-scale items to solicit student opinions about e-PBL.

Summary of results: The results of paired t-test showed that there were significant changes in the students' opinions on e-PBL when they experienced e-PBL. They agreed more that e-PBL was helpful in fostering problem solving skills (t = 3.323, p < .01), and that e-PBL allowed them to learn in ways suited for their learning styles (t = -2.651, p < .05). They also agreed more that they did not need help from the tutor during the learning process (t = 3.583, p < .01), indicating that they got more confident in their ability to solve the clinical problem independently. Additionally, the students moderately agreed with the statements that e-PBL fostered their learning in terms of acquiring relevant knowledge, promoting clinical reasoning skills and the ability to find relevant information.

Conclusions: Students perceived the e-PBL learning environment more positively after they experienced it in terms of promoting clinical reasoning skills and supporting the individual's own learning style.

Take-home messages: e-PBL can supplement traditional PBL to foster the individual student's cognitive learning processes.

10G5

PBL: Factors influencing the successful implementation of PBL

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Background: Curriculum designing involves a skillful blend of educational strategies designed to help students achieve the curriculum outcomes. PBL may make a valuable contribution to this blend but attention needs to be paid to know how it can be implemented.

Summary of work: Focus group discussions (FGD) were conducted at the end of undergraduate first year MBBS Integrated Curriculum Program 2009 at IIMC as an ongoing activity of program evaluation & feedback. Semi structured interviews with preplanned questions were skillfully facilitated by the medical education experts with 30 faculty members, 15 trained PBL facilitators and 30 first year MBBS students. Interview data were transcribed, examined, categorized, coded, tabulated and analyzed in order to achieve the aim of the study. 'Krueger's (1994) Framework' analysis was used with thematic approach for focus-group interview data analysis.

Summary of results: Students support the facilitation skill of the senior faculty members as compared to junior and they acknowledge the better facilitation skills of clinical science faculty. They admit that PBL facilitates & promotes the acquisition of soft skills and of generic competencies, hence encourages a deep approach to learning. But they criticized the difficulty of some of the cases and its learning resources (multimedia, internet access etc). On analysis of faculty members' comments they acknowledge that there is need for faculty training for writing & facilitation of PBL, more faculty members should be inducted in this integrated system, there is a difference in performance of the students with different educational & social

backgrounds. Furthermore, they emphasize the importance of learning resources accessibility to the students and standardization of PBL evaluation process.

Conclusion: Successful implementation of PBL does not come easily; it needs great planning in milieu of staff development & motivation (in PBL case writing & facilitation skills) with adequate resources. It countenances with challenges of political impedance to bring a change, curriculum restructuring & reforming, level and domain of facilitators, student-teacher ratio, differences in student's educational & social background, cost and students assessment & evaluation through PBL.

10H   Short Communications: Peer Assisted Learning 2

10H1
Peer Assisted learning (PAL) by FY1 tutors improves medical students' confidence and prescribing skills
S J Emerson, F Wallace*, P Burton, G McKay and M Field (University of Glasgow, Medical Education, Glasgow, UK)*

Background: Written prescription errors by foundation year (FY) doctors are reported to be ~8%. This study assessed whether peer assisted learning (PAL) tutorials delivered by FY1 doctors could improve students' prescribing skills.
Summary of work: Medical students at Glasgow undertake a 6 week 'preparation for practice' (PfP) ward attachment. Students at one hospital received 8 interactive tutorials by FY1s based on drug prescribing in acute clinical scenarios. At a second hospital students completed PFP with/without tutorials. Students completed a formative prescribing examination, confidence questionnaire before/after PfP and evaluation questionnaires as appropriate. A focus group of FY1 tutors critically appraised the training experience.
Summary of results: Twenty students received the tutorials, with 11 controls. Initial exam scores and confidence showed no significant difference between students at either site. Confidence and examination scores improved in both groups during PFP however, only those in the group receiving FY1-led tutorials achieved significance (confidence: $p<0.0001$, Examination scores: $p<0.0001$). All students recommended FY1-led tutorials. The focus group concluded that trainees felt more comfortable questioning peers and errors were more likely to be identified prior to students commencing work. FY1s felt PAL training also benefited their prescribing knowledge.
Conclusions/Take-home messages: FY1-led PAL is an effective method of improving both FY1 and final year student prescribing competence and confidence.

10H2
Peer-assisted learning by foundation year doctors in knee joint aspiration: A pilot study
M E Perry[1], J Burke[2], G McAllister[1], L Kathuria[1], H Halbert[1] and M Field[1] ([1]Centre for Rheumatic Diseases, Glasgow Royal Infirmary; [2]Dept Teaching and Learning, Glasgow University, Glasgow, UK)*

Background: To perform a pilot study of Peer Assisted Learning in aspiration of the knee joint with foundation year doctors.
Summary of work: 27 foundation year doctors participated. 3 (trainers) were trained by a Rheumatology Consultant and Specialist Registrar (SpR) to aspirate the knee joint. 24 (trainees) were assigned to 3 separate groups to develop a schema for knee joint aspiration, facilitated by the trainers and SpR. A combined schema was developed by all the groups and the technique was performed on mannequin models. Confidence questionnaires and nominal group technique were used for evaluation. The trainees have been offered an opportunity to perform the procedure on patients in a joint injection clinic, where an independent assessor will confirm their competence in the technique.
Summary of results: Pre and post training confidence questionnaires showed significant improvements ($p<0.001$, MWU test SPSS). Nominal group technique evaluation highlighted that the models were of good quality; group work was practical and facilitated learning. However, trainees commented that a video of the procedure would have been a helpful adjunct to learning and that both the opportunity to practice with real patients and further anatomy revision would be welcomed.
Conclusions: PAL for aspiration of the knee joint by foundation year doctors improved confidence in joint aspiration, is likely to be a helpful educational tool and help junior doctors diagnose and manage acute arthritis of the knee joint.
Take-home messages: Peer-learning by junior doctors can be used to teach aspiration of the knee joint.

10H3
Peer assisted learning and acute care skills: A pilot study at the University of Edinburgh
O Prince*[1], S McNeill*[1], V Tallentire[2] and HS Cameron[2] ([1]Foundation Doctor, NHS Lothian, UK; [2]Medical Teaching Organisation, University of Edinburgh, UK)

Background: Previous research demonstrates that peer-assisted learning (PAL) can have beneficial outcomes for both tutees and tutors. Additional research highlights that acute care is an area in which medical graduates often feel unprepared when starting work as a doctor.
Summary of work: A new PAL initiative has been developed at the University of Edinburgh involving Foundation doctors facilitating scenario-based training in acute care skills for final year medical students. A pilot was undertaken in early 2010 involving the training of 20 Foundation doctor 'tutors' and the delivery of structured scenario-based sessions to students.
Summary of results: Detailed evaluation of the sessions from the perspectives of both the fifth year tutees and Foundation doctor tutors will be presented. It includes ratings of students' confidence and knowledge of acute care both before and after the training, as well as those relating to non-technical skills such as team-working and communication. Foundation doctors' evaluation of their own acute care skills, as well as their teaching skills and confidence, will be presented.
Conclusions: The perceived value and feasibility of the project will be analysed along with the potential for expansion and adaptation in light of the feedback received.
Take-home messages: This and other similar initiatives have a huge amount of unrealised potential within complex curricula.

10H4
Experiences with peer supervision for residents
D Vessies* and J Wiering (UMCG, Groningen, Netherlands)

Background: Peer supervision as an approach to develop professional behaviour was introduced in the Obstetrics and Gynaecology training program at the University Medical Center Groningen in the Netherlands.
Summary of work: We work with groups of maximum four residents. The groups are supported by trained psychologist.   Participation is on voluntary basis. A contract was signed ensuring confidentiality and participation. The essence of the method is that the residents discuss experiences. Peers ask clarifying questions, and the residents search for possible alternative coping strategies. Topics included emotional encounters, ethical issues, difficulties or conflicts in clinical settings, and work-life balance.
Summary of results: Peer supervision increased awareness about own feelings, values and beliefs in relation to the medical practice. Some residents rated themselves lower on certain skills after participation, due to increased awareness of own weaknesses. The Group structure fostered social support and thereby contributed to well-being of residents in the context of high work load and low work control.
Conclusions: Peer supervision is a promising addition to the existing learning modalities in specialist training.
Take-home messages: For residents peer supervision is an effective method to learn to deal with high work load and low work control and all the other work conditions that cause stress.

10H5
A student-led course in clinical reasoning in the core curriculum
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Background: There is growing evidence for the value of several forms of peer teaching in medical education. Little is known about the feasibility of such approach in courses of clinical reasoning. UMC Utrecht offers a clinical reasoning course for first and second year students which had been incidentally led by sixth year near-peer students.
Summary of work: In 2008-2009 this highly structured mandatory clinical reasoning course for second year medical students was fully tutored by final year medical students, as part of a teacher training course in their core curriculum. Routine evaluations before and after introducing near-peers as tutors were compared, a focused questionnaire survey was conducted as well as an interview with a group of students to evaluate the new format.

Summary of results: There was no difference in the ratings of the course before and after the introduction of the new format. In general, second year students are satisfied with the near-peer teachers. Strong points of the near-peers mentioned are their high motivation, involvement, enthusiasm, adjustment of cognitive level and stimulating skills.

Conclusions: Although our study cannot provide evidence for differential learning effects, the evaluation of our near-peer led clinical reasoning course shows encouraging results.

Take-home messages: It is feasible to run a second year case-based clinical reasoning course with final year medical students as tutors.

10I   Short Communications: The Education Environment

10I1
Key elements of educational environment quality: A literature study
J Schönrock-Adema*, E A van Hell, T Bouwkamp-Timmer and J Cohen-Schotanus (University of Groningen and University Medical Center Groningen, The Netherlands)

Background: The educational environment has increasingly been acknowledged as vital for medical educational quality. Consequently, many educational environment instruments have been developed. Closer inspection shows that these instruments vary widely in content and structure. Therefore, it is not plausible that they all measure the same concepts. We studied the theoretical foundations of existing instruments to identify common theoretical bases. Our research question was "what are the key elements of educational environment vital to determining its quality".

Summary of work: We systematically searched 7 databases for publications describing the development of medical educational environment instruments, following the Cochrane and BEME guidelines. We investigated which theories and conceptual frameworks formed their basis.

Summary of results: Our search yielded 11 publications on the development of medical educational environment instruments. Most of these did not specify a theoretical basis. Further research into the referenced literature yielded Moos' conceptual framework as an apt, comprehensive and therefore useful theoretical framework.

Conclusions: Moos' framework covers three broad domains corresponding with trichotomies found in workplace climate and educational theories. Educational content/goal, relationships/motivational climate and organisation/regulation may be the key elements of educational environment quality.

Take-home messages: Given the aptness, comprehensiveness and universal applicability of these domains, we recommend covering content, climate and organization when measuring educational environment quality.

10I2
Understanding medical students' learning environment
S A Santen*, J W Eley, J A Otsuki and E Brownfield (Emory School of Medicine, Atlanta, Georgia, USA)

Background: The purpose of this study is to explore what student reported attitudes and scales can tell about the learning environment and begin to address solutions.

Summary of work: At the end of the clinical year, 3 validated instruments were administered to medical students: patient centered care (Krupat), moral distress (Miller) and professionalism (Reddy). The results of these instruments were explored to better understand the effect of the environment on the attitudes of students. Leadership is attempting to address some of the issues discovered.

Summary of results: Students were less patient-centered than expected. Students noted moral distress particularly around issues of 1) disrespectful/demeaning remarks about patients or team members 2) poor team communication negatively impacting patient care 3) patients with advanced disease due to barriers to accessing care. Most students observed unprofessional behavior such as 1) skipping events which attendance is required, 2) falsifying charts, 3) not reporting errors to supervising physician. Curricular leadership has implementing strategies to address some of these issues.

Conclusions: The results of the surveys administered to medical students can inform us about the environmental influences on behavior and attitudes of medical students. We are concerned about the potential negative influences at play.

Take-home messages: Attention to and addressing the learning environment is needed.

10I3

Medical students` perceptions of their educational environment at Al Neelain University

Abeer A Mannan* and Ahmed B Ali (Al Neelain University, Department of Community Medicine, Khartoum, Sudan)

Background: Al Neelain medical school is a unique among other Sudanese medical institutions in the sense that we believe that taking decision concerning the educational programme should be in part based on sound, reliable analysis of what students think about their educational environment.

Summary of work: We wished to objectively assess the undergraduate educational environment and our medical school using the DREEM inventory at the end of the academic year 2007.

Summary of results: The student sample comprised 41.4% male and 58.5% female. The overall mean DREEM score for the study group was 106/200 (53%). There was no statistically significant difference between males and females. The mean scores for the DREEM domains were as follows: perception of learning, 24/48 (50%); perception of teachers, 22.2/44 (55.4%); academic self-perception, 19.2/32 (60%); perception of atmosphere, 22.6/48 (47%), and for social self perceptions, 15.7/28 (56%). 53.83% of students` suggestions were centred around improving the school overall structure, lecture halls and library as these were the main source of dissatisfaction among students

Conclusions: This study provided base-line information on the educational environment at our school. Students indicated areas where they are most dissatisfied.

Take-home messages: Issues raised by students comprised priority areas for the school administration. Follow-up studies need to be undertaken in the future in order to be able to make valid comparisons, and hence ensure and maintain high quality educational environment.

10I4

Student views of their educational environment over time: Five years of DREEM'ing

S Miles* and S J Leinster (University of East Anglia, Norwich, UK)

Background: An evaluation programme was established for the MB/BS at UEA's new Medical School. This included an Annual Evaluation for all students, incorporating the DREEM (Roff et al, 1997).

Summary of work: The third cohort of students (2004-5 entry) graduated summer 2009. Of the starting cohort (n=128), 77 students completed the DREEM for all 5 years and consented for their data to be reported externally (60%). Analysis compared DREEM scores over time.

Summary of results: Students rated their experience with the educational environment more negatively in Year 3 (137 out of 200, an ideal environment McAleer & Roff, 2001) than in other years. Year 4 was the most positively rated year (143/200). Further details of the findings, including results for subscales and individual DREEM items will be reported in the presentation/poster.

Conclusions: In-line with other evaluation data, evidence from the DREEM indicated that students were least happy with their educational experience in Year 3. This year is recognised by staff and students as having a particularly heavy workload. Furthermore, students may struggle with knowing that they have two more years to go whilst their friends on other courses are graduating.

Take-home messages: UEA medical students experienced a dip in satisfaction with their educational environment mid-way through their 5 year course.

10I5

Educational and learning environment: Faculty of Medicine Sucre, Bolivia vs Faculty of Medicine, Mendoza, Argentina

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Background: Medical schools of Latin America in the last time pretending to conform to the educational changes of regional and global context, have considered the importance of education and learning environment perceived by students. The aim of the study was to describe and compare the educational and learning environment in two faculties of medicine in Latin America, one with a traditional curriculum (San Francisco Xavier of Chuquisaca University, Sucre-Bolivia) and another with innovative curriculum (National University of Cuyo, Mendoza-Argentina).

Summary of work: A cross-sectional study was performed, the Dundee Ready Education Environment Measure (DREEM) inventory was applied to the students during 2008-2009. It was included n=438, 205 from Bolivia and 233 from Argentina, from years first/142, third/107 and fifth/189.

Summary of results: The overall score was 137/200 (SD ± 20.82), in the students from Bolivia it was 132.72 and in those from Argentina 140.54, the value p = 0.001 (T test). In the Registrars' Perception of Course organisers and of Atmosphere subscales p=0.001, in Social self-perception p=0.003 and Registrars' Perception of Learning and Academic Self-Perception p≥0.05.

Conclusions: The global perception of the educational environment is more positive than negative, students from Argentina had significantly higher perception. In the Perceptions of Learning, Atmosphere and Social self-perception those from Argentina scored significantly more. In the Perception of Course organizers and Academic self-perceptions had a positive perception and confidence with no differences by country.

Take-home messages: Both faculties should work even harder to improve the students perceptions of learning in those domains and subscales lower scored.

10J Short Communications: Selection for Medicine and the Multi Mini Interview

10J1
Can teamwork skill in admission test reflect good community doctors?
Prapa Ratanacahi* (Hatyai Medical Education Center, Hatyai, Songkhla, Thailand)

Background: Many kinds of tests on select students in order to get those with professional potential like the test for learning ability skill, multiple mini interview, teamwork skill have been used for a couple of years in southern medical school in Thailand.

Summary of work: Learning skill test reflects wisdom for professional studying or let's say the IQ (Intelligence quotient), multiple mini interview reflects the MQ (Moral Quotient) or EQ (Emotional Quotient) while teamwork skill test reflect SQ (Social Quotient).

Conclusions/Take-home messages: Since Patil Award 2008, it is about time to look back whether the teamwork skill test is worth enough to fulfill the intention of producing doctors for rural communities where they have to the leaders, coordinators, communicators at the same time as the health providers.

10J2
Assessing the stability of the Multiple Mini Interview stations used by Alberta International Medical Graduate Program for selecting international medical graduates for residency training
L Baig* and T Donnon (University of Calgary, Canada)

Background: The multiple mini interview (MMI) uses a sequences structured encounters to assess the non-cognitive skills that cannot be adequately assessed through personal interviews. In 2006 Alberta International Medical Graduate Program (AIMGP) introduced MMI for assessing the residency readiness of international medical graduates (IMGs).

Summary of work: AIMGP uses 9 stations and 3 stations were repeated in the past 3 years. These 3 stations were used for assessing stability using IRT (Rasch method) and the repeated measures and construct validity was assessed using exploratory factor analysis.

Summary of results: Two stations (empathy and teamwork) had stability however overall a halo effect occurred within stations. In the IRT analysis (one and two parameters) there were inconsistencies across question sub-scales measures of ability across stations from year to year and low reliability within stations. We will present data showing errors of measurement and the construct validity measures for these stations.

Conclusions: We need to further refine our stations and do more research for improving the psychometrics on our stations.

Take-home messages: MMI is shrouded with Halo effect and not as objective as an OSCE.

10J3
A new MMI criteria for discarding medical school applicants: Examiners' worries
C Bourdy* and R Gagnon (Université de Montréal, Québec, Canada)

Background: MMI has been used since 2006 as a selection tool for applicants in many medical schools. This new method offers a better objective evaluation than the traditional long interviews. As many interviewers give their appreciation of a candidate, the MMI can gather various information on each candidate.

Summary of work: At Université de Montréal School of Medicine, we implemented a 9 stations MMI in 2009. Along with the non cognitive dimensions (communication, interpersonal relationship, etc.), we ask all interviewers to signal any worry they have or feel.

Summary of results: We revised all applicants' evaluations describing interviewers' worries such as rigidity, lack of authenticity, misjudgement and immaturity. 20 candidates were in this category. We decide to reject those with 3 or more worries detected by 3 different interviewers. After this revisiting of the MMI results, there were 15 candidates who were taken out of the pool of candidates to which we offer a place in our School of medicine.

Conclusions: Interviewers' worries are new tools to put away candidates demonstrating character traits that often cause problem in the patient-doctor encounters.

Take-home messages: Rigidity, immaturity and lack of authenticity are better detected before School of medicine's admission and the interviewers' worries seem to be an interesting new addition.

10J4

Implementation of a new admissions process at USD for medicine: Status on two years of experience with UniTEST and the MMI

Maia Jensen*[1], Anne Lindebo Holm Øvrehus[1], Kristian Grundvad Kvist[2] and Birgitta Wallstedt[1] ([1]University of Southern Denmark, Faculty of Health Sciences; [2]Odense M, Denmark)

Background: Since 2008 50% of the students at medical school at USD are admitted on the basis of an admissions process consisting of a Multiple Choice Test, called UniTEST (Australian Council for Educational Research), that decides who qualifies for a 7 station Multiple Mini Interview. The other 50 % are admitted on the basis of their Grade Point Average.

Summary of work: Both UniTEST and the MMI have been subject to statistical analysis such as reliability, correlation with GPA and preliminary predictive validity.

Summary of results: UniTEST: Cronbach's Alpha 0,88 in 2009, 0,86 in 2008; correlation (Pearson's) with GPA 0,22. MMI: Cronbach's Alpha 0,56 in 2009, 0,61 in 2008; correlation with GPA 0,011; correlation with UniTEST 0,23. Preliminary predictive validity: lower dropout rate for students admitted on the basis of the two tests compared to students admitted solely on the basis of GPA.

Conclusions: The reliability of the MMI is a challenge. Results indicate that the two tests assess different abilities and that the predictive validity of UniTEST combined with the MMI is better than that of the GPA with regard to the dropout rate.

Take-home messages: The MMI is still to be refined, but the results so far are encouraging.

10J5

Does a selection centre process for entry to medical school predict future examination performance?

T Haldane*, C Humpherson, J Kidd and N Johnson (Warwick Medical School, University of Warwick, Coventry, UK)

Background: Selection centers were first used by the armed forces in World War II. Since then they have been used in a range of industries for selection. In medicine their use was pioneered in the selection of general practitioners. They were introduced for selection to two medical schools in the UK in 2006.

Summary of work: A retrospective quantitative cohort study was conducted at one medical school looking at students who started in 2006 and 2007. Logistic regression was performed to analyse the relationship between performance in written and OSCE assessments undertaken in their first two years of study and performance in the selection centre process, previous academic achievement and demographic characteristics.

Summary of results: 339 students were included in the study. Selection centre total score was shown to be predictive of passing the written examinations (OR1.008, p<0.001 and OR 1.010, p=0.002) and the first OSCE (OR 1.006, p=0.049). These results were independent of other factors measured including prior academic performance and demographic characteristics.

Conclusions: This study shows that selection centre score predicts early performance in examinations at medical school and does not simply reflect general academic performance or demographic characteristics.

Take-home messages: These results begin to provide information regarding predictive validity. Further research is required to look at later performance

10K   Short Communications: The Teacher

10K1
Perception of the necessity of medical education qualification and professionalization of medical teachers in Saudi Arabia
Rania Zaini* (Umm Al Qura University, Makkah, Saudi Arabia)

Background: A study of the key Saudi decision-makers' views of current status and future prospective of Saudi medical educations suggests the importance of education qualification for all medical teachers. It was suggested that medical teaching could be professionalized by registering medical teachers who are involved in training and teaching students and trainees. The study aims to investigate medical teachers' views of how to enhance excellent teaching practice and their perception of the proposed schema of education qualification and registration of medical teachers.
Summary of work: 450 medical teachers (representing 9 medical schools) were approaches to participate in the study and complete the electronic- questionnaire or e-survey.
Summary of results: 193 respondents complete the questionnaire with a response rate (43%): representing 7 medical schools. The majority are male, clinicians, 85% and 60 % respectively.
Conclusions: 71% of the respondents ask for formal training programme and 60 % agree with the idea of medical teachers' qualification of the basic medical education. Only 41% agree of the proposed schema of medical teachers' registration
Take-home messages: Professionalized medical teaching through registering of medical teachers is not preferred in the Saudi society. Nevertheless, qualifications in medical educations is considered essential for most respondents specially who comes from schools with active medical education Departments/Centers.

10K2
Measuring medical teachers' conceptions on teaching and learning
J C G Jacobs*[1], S J van Luijk[1], C P M van der Vleuten[2], G Croiset[1] and F Scheele[1] ([1]VU University Medical Center, Institute for Education and Training, Amsterdam; [2] Maastricht University Medical Center, Dept of Educational Development and Research, Maastricht, The Netherlands)

Background: The literature on higher and secondary education suggests that conceptions of teachers on teaching and learning influence the results of staff development and the actual performance of teachers. In medical education however, there is limited attention for the conceptions of teachers on teaching and learning. To explore this, we constructed a questionnaire tailored to student-centered undergraduate medical education.
Summary of work: After literature research, an expert meeting, and six interviews a 60 item questionnaire was constructed. Subsequently we submitted the questionnaire to a Delphi panel (N=9) and administered it to a large group of teachers of two university medical centers (N=645), in order to assess its psychometric properties.
Summary of results: Based on the Delphi we deleted seven items. Preliminary results of an exploratory factor analysis indicate four dimensions in the questionnaire, each having sufficient internal consistency.
Conclusions: We developed an instrument to measure medical teachers' conceptions on teaching and learning which has demonstrated internal validity by showing a coherent structure of dimensions.
Take-home messages: This questionnaire enables further research in the conceptions of medical teachers on teaching and learning. The relation with contextual and personal factors, actual performance and the implications for staff development will be investigated.

10K3
Medical professor's perceptions of faculty evaluation system
Sook-hee Ryue* and Eun Bae Yang ([1]Brain Korea 21 Project for Yonsei Medical Science; [2]Department of Medical Education, Yonsei University College of Medicine, Republic of South Korea)

Background: In order to use a faculty evaluation system that is helpful and desirable, understanding and awareness among the professors being rated is important.

Summary of work: The data was collected through a questionnaire mailed to all medical schools in Korea. We received 1,856 responses on the 25 items questionnaire.

Summary of results: First, over 90% of the professors believe that they had a high awareness of the system; however, 20%–40% of the professors rated elements such as validity, reliability, fairness, satisfaction, etc., negatively. Second, professors work in medical care preferentially, but eventually intend to be actively involved research. Teaching is third in sequence for both the current action ratio and desired action ratio. Third, above 50% of the professors disagreed with peer evaluation as a measure of their achievement. Finally, many professors believed teaching to be trivial; 88% of the professors believed education to be trivial in relation to the sizeable research load and their medical care duties.

Conclusions: Although the evaluation system is aimed at the development of the professors' teaching abilities, it didn't function so.

Take-home messages: Faculty evaluation system moves forward to developing the teaching abilities and attitude of a growing number of medical professors.

10K4

Mediator, role model and teacher - doctors' perceptions of their role as supervisors in clinical rotations

P Strand[1], G Edgren[1], P Borna[2], G Wichmann-Hansen[3] S Lindgren[1] and A Håkansson[1] ([1]Lund University; [2]Skane University Hospital, Lund, Sweden; [3]Aarhus University, Faculty of Health Sciences, Aarhus, Denmark)*

Background: The aim of this study was to explore doctors´ perceptions of 1) their role as clinical supervisors, 2) factors influencing quality of supervision, 3) favourable strategies for developing supervisory practice.

Summary of work: We conducted a qualitative study based on 4 focus-group interviews with a total of 21 doctors from Lund University teaching hospitals, representing 7 specialities. Data were analysed using a qualitative content strategy. Frameworks of social theories of learning were applied for interpretation.

Summary of results: The doctors perceived their supervisor role mainly as social and cultural mediators, supporting students' participation in work-place activities and partly as teachers and role-models. They stressed that high-quality supervision and learner-centered teaching methods strongly depend on organizational factors such as management priorities between production and education, physical environment, and emotional climate. In order to develop supervisory practice, doctors favour the opportunity to participate in communities formed around practice rather than formal educational activities.

Conclusions: In line with current learning theories, doctors perceived learning from participation in communities-of-practice as crucial to students' workplace learning as well as to their own learning/development as supervisors. Organizational factors determine doctors' confidence and commitment as supervisors and development of supervisory practice.

Take-home messages: Doctors need organizational support and recognition to commit to developing supervisory practice.

10K5

Resident as learner and teacher (RALT): An e-learning module

Daniel M Panisko, Hosanna Au, Stacey Bernstein, John Flannery, Linda Probyn, Audrey Yap, Molly Zirkle and Susan Glover Takahashi (Postgraduate Medical Education, University of Toronto, Canada)*

Background: A web based e-learning module that delivers a 4 hour self study curriculum, designed to enhance a resident's teaching and learning skills, has been developed and will be implemented in a large postgraduate training program with over 2000 trainees in over 70 disciplines. The curriculum was developed iteratively by a working group from a broad base of Royal College disciplines.

Summary of work: The RALT curriculum explores the topics of: Large Group, Small Group, and Clinical Teaching and Learning; Feedback and Evaluation; and Keeping Up to Date, in individual units that are all congruent with the CanMEDs Scholar role. Material is presented in an interactive fashion with the use of "games", critical analysis of clinical teaching vignettes, and prioritization of techniques and ideas that the resident can commit to an individualized and personalized toolkit. This toolkit is designed for ready, rapid, and practical implementation into the resident's teaching and learning practice. The RALT module is one of a series non-medical expert CanMEDs domains incorporated within a larger web-based e-learning program, PGCorEd(TM).

Summary of results: Evaluation of the RALT module, independently, and in the context of the PGCorEd(TM), will occur at Levels 1, 2 and 3 of the Kirkpatrick Program Evaluation hierarchy.

Conclusions: Enhancement of resident teaching skills will develop from this self-study web-based module.

Take-home messages: An interactive self-study web-based e-learning program to improve the teaching and learning skills of residents has been developed for use across a broad range of specialties and disciplines.

10K6
Control and adaptation of the educational atmosphere: Nursing teachers' perceptions and experiences

H Karimi Moonaghi[1], F Dabbaghi, S F Haghdoost Oskouei and T Binaghi (Mashhad University of Medical Sciences, Mashhad, Iran)*

Background: Control and adaptation of the educational atmosphere by teachers is less regarded in nursing education. This study was conducted to explore, describe and illustrate teachers' perceptions and experiences about their control and adaptation of the educational atmosphere.

Summary of work: In this qualitative study, 15 teachers in different academic disciplines were selected through purposeful sampling and interviewed using deep and semi-structured interviews. All interviews were tape-recorded, transcribed and then analyzed using constant comparison based on Strauss and Corbin's method.

Summary of results: Control and adaptation of the educational atmosphere as the main process (theme) comprised 4 sub-processes: 1) Teacher's perception of self, 2) Teacher's perception of the student, 3) Teacher's perception of the environment, 4) Teacher's perception of nursing knowledge.

Knowing and appraisal of self, students, environment and nursing knowledge can develop the right pattern for controlling of and adapting the educational atmosphere. Having the right knowledge and attitudes about the mentioned factors are necessary to be an effective teacher.

Conclusions/Take-home messages: Nursing teachers, students, and curriculum planners could use the introduced processes in this study in order to modify and promote the quality of nursing education.

10L Short Communications: Pot Pourri

10L1
Medical students' implicit and explicit attitudes to mental health: Relationship with communication skills

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Background: Mental illness (MI) is detrimental to sufferers' wellbeing and carries great stigma. As a result, the Royal College of Psychiatrists' 'Changing Minds' campaign has aimed to promote positive attitudes towards MI. Good practitioner-patient communication has been implicated in achieving better patient outcomes, greater physician satisfaction and the delivery of high-quality care and in treatment adherence. This study investigates relationships between implicit attitudes of first-year medical students towards MI, summative communication skills OSCE scores, and self-reported explicit attitudes.

Summary of work: Students (n=100) completed explicit and implicit (the Implicit Association Test) MI attitude measures, and were videoed in one 5-minute summative history taking OSCE station. Quality of communication will be rated using the Verona VR-CoDES which identifies patient emotional cues/concerns and health providers' associated responses. Examiner scores on the OSCE will also be collected.

Summary of results: The relationships between VR-CoDES ratings, examiner scores and students' attitudes towards MI will be analysed. Correlation between implicit and explicit attitudes will also be assessed. The presentation will report these findings in detail.

Conclusions: This is the first assessment of the relationships between communication skills and implicit-explicit attitudes towards MI in medical students.

Take-home messages: Assessment of students' implicit attitudes is important when implementing medical school curricula and in the development and assessment of professionalism.

10L2

Evaluation of a research training program for students in cancer research in minority and international settings

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Background: Our study questions examine: the feasibility of conducting a cancer education program in medically underserved populations at multiple US and international field; the merit and worth that students and faculty attribute to the program; and students' scholarly and cancer-related career outcomes.
Summary of work: Students rated the quality of their training and mentoring. Faculty rated the quality of students' work, professional attributes, and likelihood that students would succeed in cancer research careers. In addition, outcome measures included the proportion of the students who completed their internship and scholarly products.
Summary of results: A total of 30 students participated in the combined 2006-2009 training cohorts. The training sites include India, Israel, Egypt, Turkey, Jordan, Tunisia, Algeria, Morocco, Kenya, South Africa, Brazil, Mexico, Pakistan, and Hong Kong, and USA minority populations. All students indicated they "would recommend the program to others." Students completed of field experiences at multiple sites and their subsequent 70% project-related publication rate, with 79% of trainees reporting themselves as likely to pursue future cancer-related careers
Conclusions: This study established the feasibility and scholarly outcomes of a training program for cancer control in multiple field sites.
Take-home messages: A structured educational program with field experience program in medically underserved settings can prepare students for future research careers.

10L3

Reflection to action: Children's voices

M Grogan and D Sharma* (Ross Medical University, Dominica, West Indies)*

Background: This is a curriculum enhancing program that focuses on children's psychological needs and reflective practice: communication and interview skills, patient centered care responses, and a holistic approach to assessment and collaborative planning between physicians and families.
Summary of work: Within small group learning sessions, students will respond to individual case studies that use children's art. Awareness, shared reflections and effective questions will contribute to professionally competent interviews with the family to ensure planning that is aligned with the mental well being of the whole family. This incorporates children's perspectives into the planning for family changes e.g. death, separation, parenting, and alcohol treatment. Cultural competencies, communication skills, partnerships, critical thinking and creative problem solving will be features of the discussion.
Summary of results: Two resources: 1) a list of interview questions for students' use during the interview practice sessions. 2) a set of reflections that promote awareness of children's needs that can be used during reflective practice.
Conclusions: Reflective practice that includes Children's Voices enhances professional competence.
Take-home messages: Reflective practice enhances professional competence to ensure that Children's Voices are included in the collaborative planning process that promotes the holistic health of the family.

10L4

Foundation year elective experience: Working with individuals with intellectual disabilities

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Background: Foundation year students (medical and physiotherapy) in the Royal College of Surgeons were given a choice of 10 electives as part of their second semester curriculum. 21 students selected one of these electives based on intellectual disability.
Summary of work: Students volunteered once a week for 6 weeks in a community based special needs club with individuals with a range of intellectual disabilities including Down Syndrome, Autism, Fragile X Syndrome and Prader Willi Syndrome. Students designed intellectual disability databases which included; medical basis of disabilities, common traits, behaviours and support information for groups and families.

Summary of results: This elective was positively received by foundation year students, academic staff, and the community based club. Surveyed student feedback indicated the elective was a very positive experience with 100% of students agreeing they gained valuable skills and information related to their future careers. Qualitative feedback demonstrated an increase in student's confidence, interaction and communication skills in addition to improving team working skills.

Conclusions: In this format students successfully gained skills and knowledge that enables them better approach and communicate with an individual with special needs.

Take-home messages: Early curriculum based exposure to community project work and volunteering is an extremely effective means of enhancing the learning experience of health professional students.

10M   Research Papers: Assessment

10M1

Challenging students with an interim assessment during an ongoing course on General Pathology results in a higher formal exam score

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Introduction: It is supposed that assessing drives learning, the so called testing effect expanding memory retrieval practice[1]. As only little experience has been gained on the testing effect in medical education[1] we evaluated the effect of challenging by an interim assessment during an ongoing course on General Pathology for 326 medical and 91 health sciences bachelor students.

Methods: The study was set up as a prospective randomized controlled trial comparing two groups of students that were randomized with stratification for gender and discipline. One group underwent an interim assessment, and the control group did not. The interim assessment consisting of 7 multiple choice questions was taken on a voluntary basis; all students participated. It took place in the final week of the course. The formal exam consisted of 15 multiple choice questions similar to those of the interim assessment and 7 open questions. Outcome measures were: grade of the formal exam, grade on the questions related to the theme of the final week, and grade on the remaining questions. All grades were expressed in a scale from 1 to 10. Statistical analysis was performed using linear mixed models.

Results: Students who underwent an interim assessment showed a 0.288 point higher score on the formal exam than the control group (p=0.037). For the questions related to the theme of the final week it amounted to 0.465 point higher (p=0.007), for the remaining questions 0.169 point higher (p=0.262).

Discussion and conclusion: Challenging students with an interim assessment in an ongoing bachelor course results in a higher formal exam score. As this effect is based on the questions related to the specific theme of the course that were part of the interim assessment, it may be explained by test-enhanced learning induced by the interim assessment. This further stresses that assessment can be considered as an educational tool[2].

[1]Larsen D P, Butler A C, Roediger H L. Test-enhanced learning in medical education. Med Educ 2008; 42: 959-66.
[2]Krupat E, Dienstag JL. Commentary: Assessment is an educational tool. Acad Med 2009; 84: 548-50.

10M2

Sources of variation for intern assessment when using the end-of-term supervisor assessment model as a summative assessment

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Introduction: This paper addresses the question of identifying sources of variation in intern assessment and the methodology involved.

Methods: The population is all interns seconded to network for The Canberra Hospital by the Institute of Medical Education (IMET) NSW (Australia) for 2007. The intern is assigned to a term, and that term will have a specific supervisor in a specific hospital (one central and 4 peripheral).

The IMET Assessment form (14 competency items) is completed as a summative assessment at the end of each 10 week term. Each form completed by the pre-nominated term supervisor comprises the unit of analysis. Variance components analysis is with MINQUE 1 (SPSS). Hypothesis testing for identifying possible sources of latent variable was undertaken using standard comparison statistics. The potential latent variables identified were individually entered as fixed facet into the variance components model. A sensitivity analysis is

performed by comparison to optimal data for reliability assessment of a well known clinical competence assessment method (mini-CEX).

Results: Descriptive statistics of the 187 assessments performed involving 40 interns and 54 supervisors with full demographics are identified for all variables assessed including descriptive statistics of the 14 competency items. Variance components analysis of each of the competency items show the dominant main effects were the intern-supervisor interaction and the residual (or error) variance component. Apart from communication skills and clinical judgement competency, the variance contributions for the intern were less than 25%. The overall ANOVA identified significant differences for the variance within assessments and between assessments indicating that latent variables are affecting within and between assessment variations. The latent variables are the hospital type; the clinical type of supervisor; place of graduation; and term time. Further variance components analyses with these fixed facets show percent variance due to the intern is reduced further; and a redistribution of the variance proportions except for knowledge, clinical, emergency and procedural skills. Similar variance components are identified for all published workplace-based studies of the mini-CEX. From the comparative data, supervisors' assessments provide as much variability between trainees or more than that observed for a mini-CEX evaluation.

Discussion and conclusion: Variances not due to the intern are substantive but similar to that found with the mini-CEX. The results also demonstrate the existence of latent variables that effect the intern related variance of end-of-term summative assessments. This process provides an example for the evaluation of rater-based assessment methods using workplace data-sets; and for local educational assessment development and benchmarking.

10M3

An instrument to integrate feedback and assessment to support self-directed learning in clinical practice: A qualitative study of students' perceptions.

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Introduction: Clinical workplaces are hectic and dynamic learning environments which require students to take charge of their own learning. Competency development during clinical internships is a continuous process that is facilitated and guided by feedback. Limited feedback, lack of supervision and problematic assessment of clinical competencies makes the development of learning instruments to support self-directed learning necessary. The study aimed to explore students' perceptions about a newly introduced integrated feedback and assessment instrument to support self-directed learning in clinical practice. Students collected feedback from clinical supervisors and wrote it in a competency-based format. This feedback information was used for self-assessment which had to be completed before the final assessment. Our main research questions were: 1) What are students' perceptions of the effect of continuous and longitudinal written feedback on students' self-directed learning in clinical practice? 2) What are students' perceptions of the effect of the integration of feedback and assessment?

Methods: Four focus group discussions were conducted with second and last year midwifery students. Focus groups were audio taped, transcribed verbatim and analyzed in a thematic way using Atlas-Ti for qualitative data analysis.

Results: The analysis of the transcripts suggested that integrating feedback and assessment supports participation and active involvement in learning by collecting, writing, asking, reading and rereading feedback. Under the condition of training and dedicated time, these learning activities stimulate reflection and facilitate the development of strategies for improvement. The integration of assessment and feedback supports self-assessment and formative assessment. The students perceived a limited use for the final assessment. The quality of feedback and empowerment by motivated supervisors are conditional to maximize the learning effects.

Discussion and conclusion: The integrated Midwifery Assessment and Feedback Instrument is a valuable instrument for supporting formative learning and assessment in clinical practice but the effect on students' self-directed learning depends on the feedback and support from supervisors.

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Driessen E, van Tartwijk J, Overeem K, Vermunt JD, van der Vleuten C. 2005. Conditions for successful reflective use of portfolios in undergraduate medical education. Medical Education 39: 1230-1235.

10M4

The development and implementation of a competency-based assessment system: Systematic documentation and analysis of the process as an integral part of program design

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Introduction: Competence in medicine is not one-dimensional, easily measured by a multiple choice exam or by a one-time demonstration of a skill. Rather, competence encompasses knowing what to do, and when and how to do it. As such, determining both how to measure competence, and who should make the decision of whether competence has been achieved or demonstrated, is a source of debate in medical education. The most effective ways of measuring competence have not been clearly determined, although checklists have become a common practice. Checklist assessment of competencies has drawbacks: checklists do not offer the learner much in the way of formative assessment (specific information about what they are doing well and where they need to improve). In particular, if the rater does not offer any qualitative comments, the learner has little to work with. As well, checklists do not adhere to the intent of competency: development of a habitual approach to improving and using skills and knowledge. We developed a competency-based assessment system based on formative feedback (Competency-Based Achievement System – CBAS). We wanted a system that would be learner driven, so that residents would: a) Recognize when feedback was being given; b) Be able to act upon that feedback; and c) Assist themselves to progress towards competence by soliciting feedback in areas where they needed it. The key feature of CBAS is that assessment is not unidirectional: rather than clinical rotation-based summative evaluations, both advisor and resident meet regularly to review cumulative formative feedback of the resident's demonstrated skills and competencies across one or more rotations. From this evidence review, advisor and resident come to a mutual understanding of the strengths and weaknesses of the resident, establishing a summative evaluation. CBAS is designed as a multi-method participatory action research (PAR) project so that we can monitor, evaluate, and adapt CBAS as it is implemented. For the initial development and implementation phase, our research questions were: What are the barriers and enablers to developing and implementing an innovative approach to competency-based assessment? Are these barriers and enablers likely to generalize to other programs?
Methods: A series of 5 focus groups with the 5 key project team members was used to document the 15 month developmental and initial implementation process of CBAS. When clarification was needed, meeting notes and summaries were also reviewed. Team members were also presenting CBAS at other residency programs, and their experiences from those other contexts were incorporated into the analysis. Two focus groups were held with end-users at the 6 month point of the pilot to compare projected and actual outcomes of CBAS.
Results: Atlas-ti qualitative software was used to analyze the focus group data. Four major themes emerged: Barriers (e.g., understanding of CBAS among end-users, resistance to documentation); Enabling factors (e.g., time, space, resources, responsive approach - when preceptors asked for an electronic version, the team adapted the paper version); Characteristics of team members (e.g., background experiences, philosophies); and Emergent outcomes (e.g., faculty development, support for at-risk residents). End-user focus groups data consistently point to the need for faculty development around giving good formative feedback, and to continuous resident education around using formative feedback to develop competence. Consistent themes arose in terms of where communication about CBAS had failed, and where it had succeeded.
Discussion and conclusion: There are several barriers and enabling factors that when anticipated can impact the development process as well as implementation strategies for an innovative competency-based assessment system. These barriers and enabling factors are likely consistent across medical school program contexts, based on experiences of team members in talking to other residency programs.

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10N   **Workshop: Hands-on structured approach to effective Virtual Patient authoring**

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Background: Virtual patient (VP) simulations complement clinical training through deliberate practice of complex clinical reasoning skills in a safe structured learning environment (Tworek, Freidman, Cook). Although VP authoring software is increasingly accessible and easy to use, designing educationally effective VPs remains challenging. To achieve anticipated learning objectives VP authors must base their design decisions and processes on existing theory, research and experience within and outside medical education.

Intended outcomes: 1. Identify educational challenges that can be solved with VPs; 2. Apply theoretical and evidence-based concepts to VP case design; 3. Acquire skills to author VPs that support specific learning outcomes; 4 Identify areas where research can inform improved VP case design.

Structure: 1. Facilitators briefly introduce the VP authoring literature and related educational theory; 2. Small groups engage in online, hands-on problem-solving by modifying partially constructed VP cases to address different educational challenges; 3. Facilitators guide a structured discussion addressing design of VPs supported by pedagogical theory, evidence, explicit and tacit knowledge; 4. Participants construct a map of techniques and methods of effective VP design; 5. Group identifies potential research issues related to VP design

Who should attend: Medical educators interested in the development and application of virtual patients.

Level of workshop: Beginner.

10O   Workshop: Using web lectures and other streaming video applications in medical education

Peter GM de Jong*, Peter G Anderson*, Alien W Riedstra, Andries JM de Man and Julie K Hewett* (International Association of Medical Science Educators (IAMSE))

Background: Streaming video technology has highly increased the possibilities for using video in education. The technology has reduced many issues about delivery, file size and network load. Many schools around the world record their classroom lectures for future reference by the students as a standard procedure. In addition, other streaming video applications are employed, such as distributing recorded real life patient encounters for training purposes and incorporating in-house or public video materials into lectures, assignments or E-learning materials.

Intended outcomes: Participants will understand the possibilities and pitfalls of streaming video in education and see various scenarios of their use.

Structure: In the workshop, we will review the principles of the streaming video technology and we will show several examples of educational applications of streaming video in the universities of Leiden (The Netherlands) and Alabama at Birmingham (USA). Participants can bring into the discussion their own applications of streaming video in (medical) education. Together with the audience, we will discuss in small groups the benefits and possible disadvantages of web lectures and other video applications, and ways to make the video stream interactive for the students as part of blended learning scenarios.

Who should attend: Anyone interested in using streaming video technology in education.

Level of workshop: Intermediate.

10R   Workshop: Encouraging mobility in medicine : can we apply spiral curricula and modules of excellence to our own university?

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Background: Although medical students are overwhelmingly in favour of intracurricular mobility, it is today far from being a reality in many universities across Europe. Possible solutions proposed include harmonisation of "spiral curricula" across the three cycles (joint statement AMEE, EMSA, IFMSA September 2009) and the creation of university specific modules of excellence (Bonn, DAAD Conference 'Learning Outcomes and Qualification Frameworks : Tools for Mobility', November 2009).

Intended outcomes: Participants will bring home ideas about how to apply the concept of spiral curricula, and identify and possibly develop modules of excellence specific to their university.

Structure: Concepts of spiral curricula, learning outcomes and modules will first be outlined in the context of encouraging mobility. Participants will then divide into groups and discuss practical implications for their home university, hopefully identifying several possible modules of excellence to be developed.
Who should attend: Students and professors keen to promote good teaching practices, international curricular development and increased mobility.
Level of workshop: Beginner.

10S Workshop: How to write an effective Team-Based Learning module

D Parmelee[1] and E Agamy*[2] ([1]Wright State University Boonshoft School of Medicine, Dayton, Ohio, USA; [2]University of Sharjah, Sharjah, UAE)*

Background: Team-Based Learning is a classroom strategy designed to fully engage students in increasingly complex problem-solving exercises using small groups. It was developed in the business school environment, but is now being used by over 40 US medical schools and schools in Asia and the Middle East. Because of its structure, one instructor can conduct a unit of study with a class as large as 200 or as few as 15. The strategy is very learner focused but instructor designed and directed.
Intended outcomes: By the conclusion of this workshop, participants will be able to: (1) Describe how to construct a Group Application Exercise (GAE) that promotes group cohesiveness; (2) Identify how to use the four S's in the design of a GAE Question; (3) Demonstrate at least two different formats for the display of team productivity; (4) Explain how the 'power of why' in question writing generates so much learner engagement.
Structure: This workshop is conducted in a Team-Based Learning format and therefore all participants are give preparatory materials, take a brief test upon arrival, are assigned to learning teams, and will engage in considerable discussion with each other and the workshop leaders through a series of small group assignments.
Who should attend: Course directors, clerkship directors, curriculum planners, faculty development specialists, any teaching faculty in medicine, dentistry, veterinary medicine, other health profession educators. Some familiarity with Team-Based Learning is helpful but not essential.
Level of workshop: Intermediate.

10U Posters: Simulated Patients/Evaluation of Clinical Teaching

10U1
Intimate examinations: Male and female specialised SPs teaching pre-clinical students
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Background: A specialised simulated patient (SP) program teaches female breast and pelvic examination (Clinical Teaching Associate Program - CTA) and male genital and rectal examination (Male Teaching Associate Program - MTA) to second year medical students.
Summary of work: The female 'Well Woman' check has been in operation for over 10 years. The program reflects clinical practice with a history, breast, speculum, and bimanual pelvic examination. Over 350 students attend the program each year. The recently piloted MTA program follows a similar format. In both programs the students record their hopes and concerns before the session. The students are assessed by the CTAs/MTAs and debrief or submit a reflection afterwards. The CTAs/MTAs teach and assess the students while being examined themselves without the presence of a clinician.
Summary of results: The main concerns before the session from the students are about hurting the SP and embarrassing themselves. The SPs find the maturity of the graduate and undergraduate students impact on the session and are able to identify a few students with individual problems. The students find the sessions challenging, are surprised that SPs would undertake this work, find the feedback valuable, and would like to have more sessions to reinforce the learning.
Conclusions: These specialised SP programs for intimate examinations establish a foundation of best practice for the clinical years.
Take-home messages: Intimate examinations taught by specialised SPs are a valuable educational exercise for pre-clinical students.

10U2
Training and quality assurance of simulated patients in a clinical assessment
R G Simpson and D Russell* (Royal College of General Practitioners, London, UK)*

Background: The nMRCGP CSA examination for licensing postgraduate doctors in family practice depends on cases representative of British General Practice being repeatedly and reliably simulated by role-players. Our presentation will explain the procedures we developed to train our simulated patients for their role, and how we quality assure their performance to ensure high standards.
Summary of work: We will outline the small-group/pair-work exercises used for training our role-players, 1)the priorities for simulated patients , 2) equality, diversity and fairness, 3)how to prepare for playing the 'patient', 4) 'calibrating' the case. We will also explain our monitoring procedures for quality assurance.
Summary of results: Successive reports on the quality assurance processes undertaken in the first two years of the exam, show that the performance of the simulated patients has consistently been of a very high standard and contributes to the reliability of the CSA examination.
Conclusions: Thorough training of simulated patients is necessary if they are to act as reliable and realistic 'patients' in a clinical assessment, and if the exam is to be fair to all candidates.
Take-home messages: This is how to prepare your simulated patients.

10U3
Professionalism, communication skills and bedside teaching
C Woranart (Pediatric Division, Khon Kaen Hospital, Khon Kaen, Thailand)*

Background: It is emphasized that a medical teacher should integrate professionalism and communication skills during bedside teaching. How the teacher follows this recommendation is still unknown.
Summary of work: The objective was to explore how medical teachers integrate professionalism and communication skills into bedside teaching. A questionnaire survey was distributed to 33 medical teachers. These teachers were labeled as average and role-model teachers by student feedback.   The in-depth interview was done to explore teachers' views on integration of professionalism and communication skills into bedside teaching.
Summary of results: Teachers in role-model group had more teaching experience than in the average group. All teachers spent 70% of bedside teaching on medical knowledge and skills. The proportions of professionalism and communication skills during bedside teaching were 10%, 20% and 20%, 10% in average and role-model teachers respectively. All teachers were aware that professionalism and communication skills should be taught in bedside teaching.   Role model teachers regarded themselves as good examples, while average teachers did not mention the importance of a teacher as a role model. Teachers in the role model group emphasized on demonstration, pre-and post session student evaluation and teacher self-assessment in teaching professionalism and communication skills. Average teachers focus on medical knowledge teaching and required training in teaching skills.
Conclusions/Take-home messages: There were some differences in teaching among role model and average teachers.   Role model teachers had more experience in professionalism and communication skills and know how to teach these skills in bedside teaching.

10U4
The use of simulated patient scenarios in the teaching of basic clinical procedural skills
Elize Archer and A de Villiers (Centre of Health Sciences Education, Stellenbosch University, South Africa)*

Background: Part task trainers (PTT) and simulated patients (SP) are an integral part of procedural skills training and assessment in undergraduate medical education. The Skills Centre at the Faculty of Health Sciences, Stellenbosch University, South Africa, wanted to determine the value of these teaching resources.
Summary of work: A formative examination (OSCE) with individual tutor feedback was done. Two of the OSCE stations had only a PTT, while a SP combined with a PTT were used in the other. The aim of the study was to determine which of the stations offered the most realistic and valuable learning experience.
Summary of results: The quantitative data revealed significant, but contradictory results in the use of a SP with a PTT versus only a PTT. Qualitative data suggested that this difference could be attributed to the SPs' performance. Tutors and students reported feedback facilitated learning in all cases.

Conclusions: Using an experienced SP and a PTT can have a positive effect on the authenticity, however, when only PTTs are used valuable learning opportunities can still be provided.

Take-home messages: Training opportunities with PTT in simulation coupled with individual feedback empowers students in the early years of their medical training.

10U5

Comparisons of rating by standardized patients and physicians in an Objective Structured Clinical Examination in National Taiwan University Hospital

C W Yang[1], *HC Chen*[2] *and H S Lai*[1] (*[1]National Taiwan University Hospital, Taipei, Taiwan; [2]University of California San Francisco, USA*)

Background: National Taiwan University Hospital has had an Objective Structured Clinical Examination (OSCE) and Standardized Patient (SP) training program for five years. In our program, due to shortage of resources and funding, SPs recruited were largely hospital volunteers. SPs have been trained as recorders to document completion of checklist items by learners. We assessed the ability of SPs in Taiwan to evaluate and rate learner performance in an OSCE.

Summary of work: In an eight-station OSCE held in May 2009, two physicians and one SP at each station evaluated thirty learners by submitting a global rating of learner performance using a 5-point scale. SP ratings for each learner were compared to faculty ratings.

Summary of results: Scores submitted by physicians (average 3.77, S.D. 0.33, range 3.00-4.25) were comparable to those submitted by SPs (average 3.86, S.D. 0.15, range 3.63-4.10) with a correlation coefficient of 0.365 ($P<0.05$).

Conclusions: SPs can provide valid global ratings of learner performance in an OSCE. However, SPs utilized a narrower range of the rating scale than physicians which might decrease ability to discriminate among learners.

Take-home messages: With appropriate training, even in the shortage of resources, SPs can be valuable candidates and a physician alternative for providing global evaluations of learner performance in an OSCE.

10U6

International survey of standardized patients: Who they are, what they do, and how they experience their work

K Abe[1], *P Evans*[2], *J Cleland*[3], *P Barton*[4], *J Ker*[5] *and Y Suzuki*[1] (*[1]Gifu University School of Medicine, Gifu, Japan; [2]University of Glasgow; [3]University of Aberdeen; [4]University of Dundee, UK; [5]Monash University, Australia*)

Background: Standardized Patients' (SPs) contribution to medical education is substantial. Despite exponential growth in SP participation, research has rarely focused on demographic characteristics, tasks, and concerns. This survey compares these features in the UK, US and Japan.

Summary of work: SPs were surveyed in the UK, n=235, US, n=570, and Japan, n=532, measuring demographic characteristics, attitudes regarding work experience and participation in physical examination.

Summary of results: The response rates were, UK, 69% US 45% and Japan 62%. The proportion of males and female SPs is 2 : 3 in UK and US, 1 : 4 in Japan. UK SPs are older and most work part-time. Most enjoyed their tasks, accept Japan only 50%, as Japanese SP's felt burdened. Many gave feedback to students, but feelings of satisfaction in performance and training in feedback varies between groups.

Conclusions: SPs' characteristics vary within and between countries. SPs report difficulty in performing feedback tasks. Feelings of being burdened may be caused by the in-balance of frequency between training and giving feedback. Additional support and training in areas of identified weakness may decrease their feelings of difficulty.

Take-home messages: SPs enjoy their work but may experience difficulty in giving feedback. Training in giving feedback to students is required.

10U7

Implementing a standardized patient program in a new medical school

M Gonçalves, *A P Salgueira, M J Costa, T Frada, V Pereira, J M Pêgo, N J Sousa and J Cerqueira (Medical Education, Life and Health Sciences Research Institute, University of Minho, Braga, Portugal)*

Background: Our school is pioneering the first Standardized Patient (SP) program in Portugal. The objectives are to offer opportunities for students to practice and improve clinical skills and for the school to assess. A typical session with an SP consists of clinical interview followed by SP feedback, student self-assessment and facilitator feedback supported by the interview video. Facilitators are medical faculty and invited physicians.

Summary of work: This work explores the impact of 30 interview sessions with SPs offered weekly in an extra-curricular format, on preclinical/clinical students. Pre- and post-encounter questionnaires are used to evaluate the experience.

Summary of results: All students rated their encounters very positively and would recommend the sessions to colleagues. The usefulness of the feedback from the facilitator was unanimous. Interestingly, we found opposite effects on students' confidence in taking a history. Even though there was an overall increase – median increases from pre- to post-encounter from 4 to 5 (7 point Likert scale) – gains were marginal and negative for some students. Further results will be reported.

Conclusions/Take-home messages: Encounters with SPs may be appreciated extremely but not exert the wanted positive effects on all students. Post-encounter feedback emerged as a key educational aspect.

10U8

Quality assurance of SPs regarding assessment of medical students' communication skills in a clinical exam: Developing and standardizing tools

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Background: The recognition that standardized patients have the potential to assess more areas of the doctor-patient relationship than any other type of simulation has made them a popular subject. OSCEs incorporating standardized patients are increasingly used in the evaluation of students' performance. This cross sectional, descriptive and correlational study aims to develop a reliable and valid tool for assessing SPs´ quality assurance for assessing medical students´ communication skills.

Summary of work: The SPs were trained to portrait and fill in the Iranian version of Calgary Cambridge checklists. Then the observational rating scale for assessing the quality assurance of SPs´ portrayal was developed and validated. The SPs´ portrayal and checklist completion ability were assessed and compared with those of the faculty. The data were analysed.

Summary of results: The mean κ was 0.82 regarding the inter-rater reliability for the SPs filling the same checklists. The total score for the SPs' portraying was above the gold standard limit of 2.7 for validity for all SPs. The mean κ was 0.60 for the correlations between the ten SPs and the three faculties filling in the checklists. All SPs performed acceptably well. The mean κ was 0.72 for correlations between SPs' two assessments in the test-retest.

Conclusions: Cost effectiveness of the Sps makes their use preferable.

Take-home messages: SP is a valid tool for assessment of communication skill.

10U9

Use of simulated patients in performance assessment of basic medical sciences: An interdisciplinary approach in a resource constrained environment

M Saeed*, A Hussain*, F Himmatullah, A Javaid*, R Shafi, M Mansoor, S Moazzam*and R Saeed (Shifa College of Medicine, Islamabad, King Edward Medical University, Lahore, Pakistan)

Background: Transformation of healthcare delivery from individuals to teamwork concept demands a multidisciplinary approach to training & assessment of health care workers. Shifa has been delivering undergraduate programs through an integrated curriculum since 2008. Integrated performance based assessment (PBA) of 1st year medical students was carried out in November 2009 using an innovative tool termed "integrated practical examination (IPE)".

Summary of work: A 15-station IPE, having each station based on clinical theme and contained 3-integrated tasks, directly observed by faculty or simulated patients (SPs). A large number of SPs posed a logistic problem. The B.Sc Nursing students (volunteers) were selected for training as SPs after signing informed consent. All SPs underwent a training workshop and a short briefing prior to exam. A pre and post test analysis of perceptions of nursing students was done. A focus group was conducted after the exam. The examinees' perception about SPs were also analyzed.

Summary of results: The apprehensions of SPs underwent positive transformation after conduct of IPE, 96% appreciated effectiveness of their role for mutual benefit.
Conclusions: Use of nursing students as SPs in 1st year medical exam is cost effective and mutually beneficial.
Take-home messages: Interdisciplinary use of simulated patients in performance assessment is cost effective and mutually beneficial in a resource constrained environment.

10U10

Competing in clinical supervision: Can it be done?
P Kihlberg[1], M Perzon[1], P Blomqvist*[1] and J Johansson[2] (Uppsala University, [1]Medical Student Council; [2]Institution of Surgical Sciences, Uppsala, Sweden)

Background: Swedish Medical Education contains a lot of clinical practice. In order to provide feedback and highlight the importance of competent teaching, a need was identified to evaluate the clinical supervision.
Summary of work: A web questionnaire, with ten questions reflecting different aspects of clinical supervision based on a concept from Stanford University, was used. The average grades were used to rate the clinics and appoint a winner. The evaluation continues in order to study change over time.
Summary of results: The response rate was 67%. Twenty clinics were evaluated with an average of 30 replies per clinic. The rating varied between 3.4 and 5.5 with an average of 4.2 (six graded scale). The average difference between the highest and lowest rating of an individual clinic was 1.7.
Conclusions: The spread in grades within and between clinics indicate that students have answered the questionnaire with care. The specified feedback to each clinic and the rating provides incitements for improvements. Future results will be used for comparison over time, where a higher rating may indicate that the project resulted in improved clinical supervision.
Take-home messages: The introduction of an evaluation of clinical supervision and a competition between clinics has resulted in strong commitment from students, providing specific feedback to the clinics.

10U11

Students' evaluation for the obstetrics and gynecology teaching course in the College of Medicine at Taibah University in Al Madinah, KSA
F Habib, M Fath Elbab, M Laban, A Essam A and A Fayomy (Taibah University, College of Medicine, Al Madinah Al Munawaraha, Kingdom of Saudi Arabia)

Background: Teaching in the clinical environment is a demanding and complex task. Evaluating an educational program is a core responsibility for any course. Feed back is a crucial step in teaching and learning process. Without feedback, mistakes are uncorrected and good performance is not reinforced.
Summary of work: To measure the fifth year undergraduate medical student's views about the obstetrics and gynaecology teaching course. Using a 5-point Likert scale self administered questionnaire, was distributed to (42) males and (53) females. The first part of the questionnaire covered the lectures and the clinical sessions, while the second part covered the educational resources, and the third reflects the student opinion about the assessment methods.
Summary of results: The response rate was (78.9%). The male students best score (82%) was given to the first part of the questionnaire, and the lowest score was given to the second, while the third part was given (80%). The female students best score (87.5%) was given to the third part, and the second and the first part were given (58%) and (74.4%) respectively.
Conclusions: We should develop an action plan for improving the course especially our educational resources level.
Take-home messages: Monitor the quality of your curricula in order to fulfill the professional teaching requirements.

10U12

Student evaluation of clinical teaching sessions: questionnaire based quantitative analysis
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Background: To quantitatively evaluate student satisfaction of various types of teaching sessions based on anonymous feedback questionnaire.

Summary of work: Twenty-two 3rd year medical students were allocated in 5 blocks of 7 weeks each, to our department. Teaching rota was based on 4 consultants and 3 specialist registrars with medical students attending ward rounds, outpatient clinics, (Opportunistic Sessions - OS) or bedside teaching and lectures (Dedicated Sessions – DS). A formatted feedback questionnaire, filled out at the end of each session was used to device a scoring system to assess effectiveness and student satisfaction.

Summary of results: 321 feedback forms reflecting 127 teaching sessions were received. DS scored better with 'level' (99.6% vs 93.7%, 'content' (97.3% vs 85.3%) and 'quality' 1.47 vs 0.46, range -2 to +2) of teaching. Overall performance score, based on student selection of pre-marked attributes, showed significant satisfaction with DS (7.42 vs 5.41, max 14). This pattern of preference was consistently observed irrespective of the grade of the clinical tutor leading the session.

Conclusions: Retrospective analysis demonstrates better student satisfaction and preference for dedicated teaching sessions. Quality of teaching offered, with respect to content and depth, is better in dedicated sessions.

Take-home messages: Dedicated sessions should be preferentially incorporated to attain better learning outcomes.

10U13

Student attitudes to teaching on clinical attachments

A M Higton and Y E Ong (Dept Respiratory Medicine, St George's Hospital, London, UK)*

Background: We sought to clarify which modes of clinical teaching students found most helpful, and what deterred them from attending.

Summary of work: We surveyed 696 medical students regarding their attitudes towards clinical teaching.

Summary of results: We analysed 294 replies (42% response). Of these, 68% felt welcome in clinical areas. 96% thought patients were usually willing to discuss their medical problems with students and 91% felt patients were willing to be examined. 50% and 64% respectively felt consultants and junior doctors were willing to teach. Students ranked bedside teaching, tutorials and clerking acute admissions most useful, and ranked clinical PBL, clinics and ward rounds least valuable. 94% said they attend most available clinical teaching opportunities. The most common deterrents were administrative.

Conclusions: Students ranked bedside teaching, tutorials and clerking acute admissions the most useful activities. Most found patients were willing to interact with them. A significant minority did not feel welcome in clinical areas and found clinicians unwilling to teach.

Take-home messages: Students and clinicians find teaching in protected times highly beneficial and relatively easy to achieve. Teaching within busy clinical settings (clinics and ward rounds) is often more challenging and clinicians need to learn different skills to be able to teach effectively whilst maintaining service to patients.

10U14

A theoretical framework to describe development of expertise in clinical teaching

J Breckwoldt, C Lingemann and K Lingemann (Department of Anaesthesiology and Perioperative Intensive Care, Benjamin Franklin Medical Center, Charité – University Medicine Berlin, Germany)*

Background: Empirically based criteria to describe quality of clinical teaching have not been reported [Steinert]. Furthermore, a theoretical framework based on respective criteria does not exist. However, a model might be of value as a basis to develop didactical expertise.

Summary of work: Empirically based criteria for teaching quality have been defined for school education. We transferred them to medical teaching and added criteria which are proven to be important for patient-physician relationship.

Summary of results: On a basic level of competence two fields of criteria were distinguished: (a) structural aspects of teaching and (b) interaction between student and teacher, and patient. Criteria related to (a) are: 'amount of true learning time', 'clarity of content', 'clear structure', 'variation of methods', 'prepared environment'. Criteria related to (b) were: 'climate facilitating learning', 'meaningful communication', 'individual promotion', 'intelligent practicing', 'transparent expectations', 'identification' (role modelling). On a higher skill's level (for which the basic level competences are prerequisites) were allocated the competencies of 'feedback', 'moderation of learning', and 'metacognition'. On the higher level structural teaching aspects (a) are linked to interaction (b).

Conclusions/Take-home messages: The described model might serve as a theoretical framework for training in clinical teaching. It needs to be proven by empirical data.

10U15

Self-perceived progress in clinical skills performance of medical students and interns during coursework and internship in Osijek, Croatia

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Background: Clinical skills performance is important for preparedness and competence in standalone work of graduated medical students. Traditionally in Croatia medical education involves 6 years of undergraduate study and one year internship. However, there is a proposal for internship's cancellation after Croatia joins EU.

Summary of work: A pilot study, self-grading survey on clinical skill performance on fourth to sixth (177) year medical students at Medical Faculty Osijek and interns (20) at Clinical Hospital Osijek, was carried out to determine their level of qualification and how the internship affects the same. The query examined basic surgical skills, intravenous access, airway management, BTLS, BLS and ALS related skills.

Summary of results: The results have showed increase in competence with the duration of study, but also some faint facts, such that 12% sixth year students have never seen a urinary catheter been placed, 46% of the same have never seen a primary wound management, just 30% of them have placed a intravenous catheter into a patient. A significant self-perceived improvement occurs in all skills after internship.

Conclusions: Our results showed that internship is important in preparation for standalone medical practice. It provides time for development of practical skills. If canceled, other teaching tools should be introduced in the medical curriculum to substitute it.

Take-home messages: Cancellation of the internship should be carefully reconsidered and some changes are necessary in undergraduate teaching. When it comes to that, mannequins and high-fidelity medical simulations could be appropriate teaching tools.

10U16

How to train and quality assure simulated patients

A Khan[1], D Russell*[2] and R G Simpson[2] ([1]London Deanery; [2]Royal College of General Practitioners, UK)*

Background: Since 2007 the MRCGP Clinical Skills Assessment has been part of the licensing exam required for General Practitioners completing their training. The CSA exam is based on patient simulation, using trained role-players to simulate consultations in General Practice. Because the CSA is such a high-stakes exam, it must be seen to be fair to candidates, and trustworthy in the eyes of governing bodies and patients. Such attributes could be compromised by inadequate role-player performance. The presentation will demonstrate some of the methods we use to train our simulated patients to role-play in a clinical assessment, to ensure the highest possible standards of performance and the observation procedures used for quality assurance.

10V   Posters: Humanities/Public Health and Health Promotion

10V1

Medical Humanities: A patient-based approach

Z Playdon and J Winning (University of London Postgraduate Deanery for Kent, Surrey and Sussex and Birkbeck College, London, UK)*

Background: KSS Deanery and Birkbeck College have collaborated to develop a new, two year, part-time MA Medical Humanities that focuses on improving patient care through a deeper understanding of the humanities.

Summary of work: The programme draws together the emergent fields of medical humanities and integrated medicine to explore and develop the daily practice of individual doctors in their interactions with patients and cultures. This focus on 'the art of medicine' meets new national requirements from the NHS Next Stages Review and new directions signposted by the Crisp Report on Global Health Partnerships, as well as local needs for a more plural medicine in UK's diverse society.

Summary of results: Analysis of the field identified opportunities to focus on the 'third space' created between physician and patient, extending Michael Balint's work, and on processes for developing a new community of practice which integrates different medical practices to improve patient care. Prior research made available an optional placement working with the fusion of western and traditional medicine currently practised by the First Nations and settled communities in the Yukon Territory, Canada.

Conclusions: A novel contribution to an emergent field of practice.

Take-home messages: New horizons in patient care are emerging.

10V2

Students' perceptions of a medical humanities course delivered in a problem-based learning format

S Zhou[1], R D Cohen[2], J Kong[2], R Holden[2], R Mathias[2] and J Bates[3] ([1]Fudan University, Shanghai, China; [2]Faculty of Medicine; [3]Centre for Health Education Scholarship, University of British Columbia, Vancouver, Canada)*

Background: Problem-based learning (PBL) is well described as a format for delivery of science-based knowledge in undergraduate medical curricula, but does it work for the humanities? This research investigated students' perspectives on the delivery of a medical humanities course in a PBL format.

Summary of work: In 2008, the UBC Faculty of Medicine conducted a trial of PBL for delivery of part of its medical humanities course to medical students. The course directors designed a questionnaire exploring students' perceptions of PBL as a format for delivering the medical humanities. This questionnaire was sent to all the medical students (n=111) who attended the course.

Summary of results: There was a 52% student response rate. 90% of these opposed the future use of a PBL format for delivering medical humanities content. PBL was perceived as too closed-ended to allow free discussion of often controversial topics that had provoked students' interest and passions. This was especially evident when these topics were perceived as relevant to their future clinical practice. Learning objectives were perceived as essential to guide discussions.

Conclusions: PBL provides too structured a format for useful delivery of the medical humanities.

Take-home messages: Delivery format must be tailored to content. Objectives remain essential to guide learning.

10V3

From volunteer project to general education course: Learning through activities

Ronnaphob Uaphanthasath (Chiang Mai University, Chiang Mai, Thailand)*

Background: In 2009, the pilot study of volunteer projects was assigned to 1st year medical students, to develop professional and life skills for the making of the ideal Thai medical students. The goals of this project are to build good relationship between the students and the community, to increase morality of medical students and to create opportunity for students to be able to understand the problems happening in the society and how to deal with them.

Summary of work: Our concept is to do volunteer activity named "50 for SCI" (Social, Community and disadvantaged people), which aimed to improve and encourage medical students to be moral, voluntary, develop the community and help the underprivileged group of the society, students have to participate in this activity for student's quality development (no less than 50 hours). We divided 1st medical students into ten groups and assigned them to do various activities in social, community, such as a voluntary camp, natural and environmental conservation, public health service, working with disabled, elderly and disadvantaged children etc.

Summary of results: The result of this project comprises of 10 activities: four activities in social, three activities in community and three activities in inferior people. In this year, we integrate this project to curricular named General Education Course: Learning through Activities

Conclusions/Take-home messages: Take home message: we can teach humanism in medical students by using a volunteer project as curricular or extracurricular program.

10V4

Narrative based medicine in clinical medical education: A qualitative study of the experience of history taking

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Background: Autobiographical narratives are considered an effective strategy for a deeper understanding of the clinical experience. The patient history is traditionally discussed to assess the clinical information and students are rarely expected to narrate their own experience of history taking.

Summary of work: In the academic years 2008-2009/2009-2010 at Humanitas Teaching Hospital - School of Medicine of the University of Milan, 83 students attending the second semester of the 3rd year were invited to narrate in a written form their first experience of history taking. Written narratives were analysed following the Grounded Theory method.

Summary of results: Students experience of the first medical interview revealed the following meanings: (i) to acknowledge numerous events, (ii) to understand the patient illness, (iii) to shift from a theoretical model to a practical experience of history taking, (iv) to understand the complexity of the clinical relationship, and (v) to build a new medical identity.

Conclusions: Written narratives were an effective strategy to provide experience and increase student awareness of the complexity of the medical interview. These can be considered a successful strategy to learn how to manage medical interviews.

Take-home messages: Narratives facilitate students in recognizing the complexity of both patient illness perception and clinical relationship.

10V5

Death and dignity: Teaching medical humanities

M Phillips, R Pilkington*, A Patterson and M Hennessy (School of Medicine, Trinity College, Dublin, Ireland)*

Background: In 2010 The School of Medicine, Trinity College Dublin saw the roll out of its medical humanities programme. First year medical students were offered Student Selected Components (SSCs) in a range of humanities connected to Medicine. These were delivered on a small group basis (up to 12 students), over 10-12 contact hours.

Summary of work: The module on bioethics took the form of, 'Death and Dignity'. This saw the students examining the components of a good death through poetry, media and scientific articles. The students had two field trips, one was to a local hospice where they could talk to clinicians about their work, and see a venue where people chose to spend their last days. The second field trip was to the museum to see mummified bog bodies on display, which allowed them to explore the role and impact of death in society, and to consider the ethics of displaying human remains. The assessment for this module was based on a debate and the production of Haiku poetry.

Summary of results: Overall, the students found this a very positive and worthwhile experience.

Conclusions: Themes of bioethics do not have to be explored solely through material designed for health care professionals, nor legal material, to be effective.

Take-home messages: Death in medical ethics is often approached by considering medico-legal aspects, through using a variety of media, students can be guided to explore the concept of death

10V6

A new department to promote healthy lifestyles in medical students

Myrna Leticia Montemayor-Flores, Donato Saldívar-Rodríguez, Norberto López-Serna, Jessica Ortiz Huerta and Amanda Catalina Torres-Ramos (Universidad Autónoma de Nuevo León, Monterrey, México)*

Background: In Mexico, the prevalence of cardiovascular diseases at younger ages has been increasing because of three main factors: obesity, smoking and sedentariness. The young people who attend universities are not excluded from this situation. This leads us to ask ourselves the following question: How can our medical students work in health promotion, if they themselves belong to the same risk factor group?

Summary of work: With the mission of designing and putting into practice programs, which are opportunities for our students to adopt healthy lifestyles, the "Coordination of Programs for Healthy Lifestyles" was created. The fundamental idea consists in that the future physicians embody values related with prevention, health and well-being in such a way that they become living examples of the preventive practices of their professional practice. This would be done through programs, such as "100% smoke free spaces" "Correct use of a condom", as well as "You 2.0, a new version of you program". All of the directed towards the prevention of diseases, such as pulmonary cardiovascular, sexually transmitted, obesity and diabetes mellitus.

Conclusions: Adopting healthy lifestyles constitute a guarantee so that the physician assumes responsibility of his clinical practice professional competences. These would mainly be those related with health promotion and disease prevention.

Take-home messages: Offering a healthy environment, which promotes the formation of healthy life-styles and habits, also is a responsibility of the universities.

10V7

Health promotion in medical curriculum

*W Aekplakorn*and S Wanvarie (Ramathibodi Hospital, Mahidol University, Bangkok, Thailand)*

Background: Health promotion is a crucial topic in Thai medical curriculum. The development and providing training activities on health promotion for medical students is essential.

Summary of work: To describe the health promotion training approach for the final (6th) year medical students at the community medicine rotation of the faculty of medicine, Ramathibodi Hospital. During one-month 'on the job' training in a community hospital, each student is assigned to pick up a health problem to be studied in details on health promotion. Choosing of topic considered high priority of the local and related to clinical practice is encouraged. Students spent time in the afternoon of some working days to work on their project. Each student was evaluated based on individual's 3-page report focusing on recommendation of health promotion strategy based on Ottawa charter concept.

Summary of results: After one year of training, one hundred twenty health promotion reports were produced. Over thirty health problems were covered and reported. Among the most reported issues include: tobacco control, alcohol control, health promotion for diabetes and hypertension patients etc. All the papers were graded. More than half of the students were relatively satisfied with the assignment.

Conclusions: Exposing students to activities of a health promotion project enhanced their experience in the application of a health promotion concept.

Take-home messages: Assignment of health promotion project related to high priority, health problem and clinical work provided the opportunity for students to gain more experience in heath promotion practice.

10V8

A review of undergraduate public health-related course syllabi in Thai Medical Schools

R Tansirisithikul and S Wanvarie (Community Medicine Center, Ramathibodi Hospital, Mahidol University, Thailand)

Background: Many public health-related courses have been introduced into the medical curriculum to deepen understanding of community health and to inspire medical students to pursue such career options.

Summary of work: We reviewed the 2009 course syllabi of 11 Thai medical schools (61.1% of all schools), focusing on public health-related courses, credits, lectures and practice hours. Our review concentrated on current public health related subjects and credit taught by these medical schools.

Summary of results: All 11 medical schools required students to attend public health courses commencing in 1st through 6th year. The total credits in undergraduate medicine curricula ranged between 11-25 (mean=18, SD=4.9). The preclinical credit was between 3-11 (6.8, SD=3.0) compared to a range of 3-20 (12, SD=5.12) in clinical clerkship curricula. The proportion of practice to lecture hours in pre-clinical years ranged from 0-4.5 (1.98, SD=1.4) and the proportion in clinical years was between 2-7 (4.6, SD=1.73). We found preclinical credits, including preclinical practice credits in Bangkok and similar municipalities significantly lower than regional universities (p<0.05).

Conclusions/Take-home messages: A public health curricula is required in all Thai medical schools with varying degrees of emphasis depending on area, time and resource. These curricula are mainly developed by the social and preventive medicine / community medicine / community health department. The universities in regional areas tended to have more course credit especially for practice credit in preclinical years than those in Bangkok and similar municipalities.

10V9

A curriculum aimed at improving attitudes towards advocacy for individuals with disabilities

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Background: In 2008, approximately 36 million people in the US had a disability, a prevalence of about 20%. This study was designed to develop and evaluate the impact of a curriculum intended to improve attitudes towards advocacy in health care for individuals with disabilities, and to illustrate the need and opportunities for advocacy in health care through informed discussions.

Summary of work: The one hour educational session, part of an undergraduate course about women's health, used active and reflective learning methods in response to our DVD developed from semi-structured written and oral narratives from persons with disabilities. The Attitude Toward Patient Advocacy – Microsocial Advocacy (AMIA, a = .92) subscale was administered before and after the session.

Summary of results: Fifty four participants (18.1%) completed the pre or post-class AMIA. The pre-class mean on the AMIA was 220.43 (SD=14.50) and the post-class mean was 231.88 (SD=15.89). The increase in the post-class mean was statistically significant, $t(35) = -2.28$, $p < .05$.

Conclusions: Brief focused instruction using active and reflective learning can positively influence attitudes towards patient advocacy.

Take-home messages: Education promoting amelioration of disparities involving persons with disabilities can incorporate advocacy attitudes.

10V10
Educating tomorrow's doctors on health inequalities within disadvantaged groups
C Wilson* and P Cotton (University of Glasgow, UK)

Background: Health inequalities occur for disadvantaged groups due to inadequate provision of healthcare services or difficulties accessing these services. Thus, there are many barriers to accessing healthcare and inequalities can only be addressed when these are appreciated and understood by professionals.

Summary of work: Whilst studying the healthcare of prisoners, prostitutes, asylum seekers, refugees and homeless people, I grew to appreciate the perpetual cycle of deprivation, psychological trauma and substance misuse. One way of reducing health inequalities is through the education of medical students on the needs of marginalised sections of society.

Summary of results: I have outlined how these barriers can be taught in a practical and sustainable way within the undergraduate medical curriculum in the following areas: 1) Communication with disadvantaged patients. 2) Social and cultural differences in those from disadvantaged groups. 3) Holistic care. 4) Student selected components. 5) The influential role of tomorrow's doctors.

Conclusions: Health inequalities can only be addressed if health professionals are aware of the needs of disadvantaged groups. This awareness comes from making sustainable changes to curricula to ensure that there is a more universal and inclusive approach to the topics covered.

Take-home messages: Tomorrow's doctors must be able to care for all members of society to ensure equitable healthcare access for all.

10V11
Introduction of a health advocacy module into an emergency curriculum
A Lalani* (University of Toronto, Division of Pediatric Emergency Medicine, Toronto, Canada)

Background: The Royal College of Physicians and Surgeons of Canada have developed 7 CanMEDS roles including the Health Advocate role. This is a role that many specialties have found challenging to incorporate into their curriculum.

Summary of work: The Health Advocacy module in the pediatric emergency program at the Hospital for Sick Children includes different strategies to highlight this role. First the program director attended a Train the Trainer Health Advocacy workshop. Secondly, a Health Advocacy Day was introduced into the curriculum. This included an introduction to health advocacy session, grand rounds and local guest speakers who presented on different health advocacy programs. The day concluded with a workshop to develop a fellows' advocacy project. Another strategy was to make the health adovcate role more visible and explicit in the program. Therefore, the rounds schedule was annotated to label the Health Advocate role where applicable. Assessment was performed by developing an OSCE station on Health Advocacy, and by evaluating this role on the fellow ITER.

Summary of results: Fellows were more aware of the Health Advocate role, following implementation of the module.

Conclusions: This review details the manner in which one program successfully introduced a Health Advocacy module into its curriculum.

Take-home messages: Health Advocacy is an essential role for physicians. Development of a curriculum module on health advocacy can be successful in teaching and bringing awareness of this role.

10V12
Competency of the number 15 medical coordinator

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Background: In France, it is the doctors who respond to emergency medical calls through a free phone number – 15.

Summary of work: Interviews of doctors in practice and of doctors in post doctoral training aimed to identify the required competency needed in order to practice this function of telemedicine specific to France.

Summary of results: The resulting competency combines inter-disciplinary medical expertise, communication, collaboration, humanism, organization, leadership.

Conclusions: Competency attained by professionals permits the building of the formation of scenarios of simulated calls with virtual patients: the training does not however permit the reproduction of psychological and cultural interferences in the professional context.

Take-home messages: Qualitative study of interviews of the expressed competency by professionals demonstrate the complexity of decisional factors in telemedicine and shows that only a doctor can fill this role.

10V13
The need for DVT prophylaxis education in an Asian setting

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Background: Deep Vein Thrombosis (DVT) has a high morbidity and mortality but there are variations in implementation and practices. Studies have suggested that Asians are at a much lower risk of DVT than Caucasians, hence an apparent downplay for routine DVT prophylaxis in Asians. The aim of our study is to assess clinicians' awareness and perceptions towards DVT prophylaxis in a Singapore Hospital.

Summary of work: We performed a randomized prospective survey of clinicians' attitudes and perceptions towards DVT at the National University Hospital, Singapore. A visual analogue scale was used in conjunction with white-space questions.

Summary of results: A total of 179 questionnaires were filled in appropriately. 48.6% (n=87) of the respondents did not have any guidelines advocated by the department for DVT prophylaxis, 30.7% (n=55) were unsure if there were any guidelines, and 20.7% (n=37) reported having guidelines in the department to refer to. 50 doctors (27.9%) said that they would never use prophylaxis guidelines. The mean score for perception of good management in the hospital was significantly lower in the junior doctors (5.9 ± 1.3) compared to consultants (6.9 ± 1.4) (p<0.001).

Conclusions: It will be prudent to incorporate rigorous DVT prophylaxis education in order to equip junior doctors with the necessary skills in providing prophylaxis.

Take-home messages: DVT Prophylaxis education must be emphasized in the Asian setting.

10V14
Developing teamworking skills: Medical students perceptions

S V Merrifield, C L Ward*, L Fraser, A Alcosie and M Marshall (Academic Unit of Medical Education, University of Sheffield, UK)*

Background: Team working is considered a key aspect of working as a doctor. This study aimed to explore what aspects both within and outside of the curriculum contribute to the development of team working skills, as part of a 2nd year medical student research project.

Summary of work: Qualitative focus groups were undertaken with fourth year medical students at one UK medical school. An interview guide was developed following a review of the literature. Discussions were recorded and transcribed verbatim. Data was then subjected to a thematic analysis.

Summary of results: Five key themes emerged: understanding of team work, small group work, placement experiences, roles and responsibility, experience and maturity. Participants identified the key characteristics of team working and indicated small group work as providing insight and development of team working skills in a relaxed environment, this provides a foundation for future work. Placement experiences either enhance team working skills or hinder them, with lack of role clarity being a barrier to students and the clinical team. Participants indicated that team working skills are learnt through experience rather than formal teaching.
Conclusions/Take-home messages: Team working skills are developed through a range of experiential activities, but clear roles and responsibility during placement are required to enhance the development of skills.

10V15
Do medical students develop an appreciation of healthcare structure and policy in the absence of a properly designed formal teaching programme?
F Martin[1], J Crane*[1] and R Jacoby*[2] ([1]Core Medical Trainees Year One; [2]Acute Care Common Stem Trainee, London Deanery, UK)*

Background: The GMC requires that medical students have a working knowledge of the NHS, healthcare policies and health economics, yet this remains a neglected area in many British medical schools.
Summary of work: We undertook a questionnaire-based survey to assess whether medical students' awareness improves as they progress through their training. They were compared with a similar cohort of architecture students. Both student bodies were also quizzed on the education sector to look for medical student and healthcare specific improvements in performance.
Summary of results: We found a small trend of improvement in healthcare sector awareness across the medical school year groups, with years one and two performing significantly less well than year five, and a non-significant trend elsewhere. This was not found with education sector knowledge, nor amongst the architecture students. The media were perceived to be their primary source for their knowledge.
Conclusions: While medical students do gain a specific and greater than average understanding of the healthcare sector without formal teaching, they primarily use the media as their source with all their inherent bias.
Take-home messages: More can and should be done to formally teach medical students about the healthcare sector to ensure a broad and unbiased awareness of these issues and enable their future engagement in clinical leadership.

10V16
Clinical breastfeeding teaching by a nurse: New model of an extracurricular educational program for last year medical students
J Achalapong, V Neeyalavera, A Natrae and C Thanapaisal (Chiangrai Medical Education Centre, Chiangrai Hospital, Chiangrai, Thailand)*

Background: In Thailand, breastfeeding has not been successfully implemented. Therefore, there was an idea of introducing medical team to stimulate breastfeeding rate, by developing curriculum for medical students.
Summary of work: Sixteen sixth-year medical students participated in breastfeeding course in breast feeding clinic teaching by nurse for 3 days. The course comprised of 1 hour lecture, 2 days on-the-job training in the clinic and 1day of breastfeeding round at post-partum ward.   The evaluations were in 2 parts, the first part was the Pre and Post test of MEQ and MCQ and the second part was the evaluation of medical students to the lecturers and the lecturers to the medical students.
Summary of results: Average scores of MCQ was higher after the class, but not significant (paired t-test, $p=0.33$). The average scores of MEQ was higher after the class with statistical significance (paired t-test, $p=0.00$). Medical students evaluated the quality of the class in the rate of good to excellent. The lecturers evaluated interest of medical students at good to excellent.
Conclusions: Most of medical students were be able to improve their knowledge after attending the breastfeeding class, taught by a nurse. They were interested in the class and had close participation. Therefore, the implementation of breastfeeding class for the 6th-year medical students should be well established.
Take-home messages: Teaching breastfeeding by a nurse is very effective teaching method which should be covered in last year medical student curriculum in Thailand.

10V17
A study of how the Cuban health system integrates public health into community-based clinical practice
C Mactier (University College London, UK)*

Background: Cuba's world-renowned health system focuses on prevention and early detection of disease. This has potential relevance to healthcare provision in other countries, including the UK where at present an inexplicable division exists between public health and clinical medicine.
Summary of work: A 6-week placement in primary care in Cuba (2009) enabled participation in the work of: Family doctors, in surgeries and on home visits, Polyclinic Moncada, with comprehensive community-based specialist services, including 'Health Promotion', Community activities, including exercise classes and informal health promotion. The Vice Director of Hygiene and Epidemiology was interviewed and the local Statistics Centre was visited.
Summary of results: Intensive medical monitoring of the whole population, regardless of health status, facilitates prevention and early detection of disease. This assessment incorporates both individual and environmental risk factors. Widespread health promotion extends from individual patient care to community-based work in schools and work centres, coordinated by a 'Health Promotion' doctor. Decentralisation of epidemiological surveillance, collected first-hand by family doctors, tailors limited resources to the population.
Conclusions: The work of the Polyclinic, with its large team of community-based doctors, community participation and local epidemiological surveillance facilitates integration of Public Health into community-based medicine.
Take-home messages: Simple measures, focusing on health promotion, can have a great impact on population health.

10W   Posters: OSCE

10W1
Digital video recording improves inter-examiner variation in OSCEs
P Cooles and C Jacobus (Ross University Medical School, Dominica, West Indies)*

Background: Inter-examiner variability is a major problem in clinical skills exams such as OSCEs especially when multiple examiners are used.
Summary of work: A training session was set up to improve consistency between examiners using digital video technology. In round 1, 16 faculty examiners independently graded recordings of 6 stations from a recent OSCE exam using standardized marking forms. They then discussed the performance of the students. In round 2 they independently graded 6 recordings of different students at the same stations.
Summary of results: Average variance between examiners fell from 4.68 in round 1 to 2.98 in round 2.
Conclusions: Digital video technology promises to be a valuable tool in reducing inter-examiner variability and improving consistency in OSCEs.
Take-home messages: Variability between examiners in OSCEs can be reduced by training.

10W2
The introduction of an OSCE in Years 1 and 2 improves OSCE performance in Year 3 of the MBBS programme
D Kennedy and P Bradley (Newcastle University, Faculty of Medical Sciences, Newcastle upon Tyne, UK)*

Background: Teachers reported poor Clinical Skills performance in students entering year 3 of Medicine despite Clinical Skills being taught in years 1 and 2. Prior to 2008 Clinical Skills were primarily assessed in written assessments and demonstration of 1 Clinical Skill.
Summary of work: To address the issue of student preparedness for year 3, reinforce Clinical Skills teaching and better align assessment to learning outcomes relating to skills, we introduced a 7 station OSCE at the end of years 1 and 2 which students had to pass to progress to the next year of the course.
Summary of results: From 2004 to 2008, the mean OSCE result in year 3 was 76.15 ± 6.14% (n=1693) which was significantly (P<0.001) improved in 2009 and 2010 (82.48 ± 4.92% [n=672]) when students had been exposed to the year 1 and 2 OSCE. In addition, Stage 3 teachers reported improved skills at entry and Clinical Skills teachers in years 1 and 2 reported significantly higher demand for access to the Clinical Skills department, particularly leading up to examinations.

Conclusions: The introduction of an OSCE to reinforce Clinical Skills teaching in years 1 and 2 significantly improves examination performance in an established year 3 OSCE.
Take-home messages: Assessment drives learning of Clinical Skills.

10W3

OSCE in Taiwan: Physicians' perceptions on the transition from a "low-" to "high-stake" examination

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Background: OSCEs have been used as a part of medical licensure examination in many countries but are at its infancy stage in many Asian countries. As a licensure requirement the examination raises many concerns for candidates, school administrators, and certifying bodies. This study investigated the willingness, feasibility, and availability of resources to create a certifying OSCE in Taiwan.
Summary of work: Representative physicians/medical educators from 23 teaching hospitals were invited to attend a 2-day workshop on the issues of creating and administering a high-stake OSCE. At the end of the workshop, interactive keypads were used to collect participants' opinions regarding whether, why, when, what, and how the high-stake OSCE could be used in Taiwan.
Summary of results: 117 participants, including 87 physicians, responded to the questions. It was decided that the goal of the high-stake OSCE was to ensure competency in basic skills prior to entering residency training. Preference was expressed for a centralized "headquarter" with multiple testing-sites using a mixture of short and long cases. Each track should contain 10-12 stations that measured core skills. Examiner and SP training were seen to be essential in order to standardize assessment at various sites. At the startup, pilot testing of cases, scoring and administrative procedures were deemed essential.
Conclusions/Take-home messages: Significant efforts are required before using a licensure OSCE. Finding sites with suitable facility is the least of the problems and challenges.

10W4

Development and validation of an OSCE to assess medical students' competence in evidence-based medicine skills

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Background: The appropriate use of clinically updated evidence is a crucial competence in modern practice. However, objectively measuring this competence remains a tough issue. The goal of this study was to develop an OSCE that assesses medical students' competence in EBM skills.
Summary of work: The OSCE was conceptualized as having 3 distinct components relating to: formulating a question, searching databases and critical appraisal. The checklist items were generated following a conceptual framework that incorporated the PICO format, seven items for searching specified databases, and three items for critical appraisal of a selected result. The measure was pilot-tested using standardized video by faculties who are experienced in teaching EBM. Item response theory models guided item refinement, selection, and provided evidence of instrument reliability. Upon revision, a larger scale validation study was performed in 47 medical trainees (25 interns and 22 junior residents).
Summary of results: Following pilot testing, 12 items were retained that demonstrated acceptable reliability (Cronbach's alpha =0.718). The convergent validity was supported by item analysis that demonstrated higher scores (83.04 vs 76.36) and pass rate (100% vs 88%) in students who had previous EBM exposure.
Conclusions: This psychometrically developed measure supports its use in assessing students' competence in EBM skills. Further validation to evaluate performance and quality assurance is recommended.
Take-home messages: OSCE could be a valid instrument in assessing competence in EBM skills.

10W5

Analysis of patient-physician interaction scores from annual OSCEs in Korea

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Background: In Korea, we have started OSCE as a summative assessment for the large group of medical students since 2006. This study aims to examine the educational outcomes according to the items of Patient-Physician Interaction (PPI) domain for the period of 2006 to 2009.

Summary of work: OSCE scores of the final-year students (total n=5314, 1342(2006, 1263(2007, 1283(2008, 1426(2009)) from 18 medical schools were analyzed. PPI items consist of 1) Intimacy, 2) Questioning and Listening, 3) Empathy, 4) Nonverbal communication, 5) Respectfulness, 6) Explaining and 7) Professional behavior. Each item was rated by 6-point Likert scale. Year-to-year variations of PPI scores were analyzed by One-Way ANOVA.

Summary of results: For 3 years, mean percentile-scores of all PPI domains were 62.12(2006, 61.27(2007) and 65.39(2008) respectively. Among the 7 items of PPI domain, the scores of "Intimacy", "Questioning and Listening", "Respectfulness" and "Explaining" showed significant improvement. Among the above 4 items, "Questioning and Listening" scores showed more significant increment compared to other items, mean scores were 2.8(2006, 3.09(2007, 3.20(2008) and 3.19(2009) points out of 5(P<0.0001).

Conclusions/Take-home messages: Compared with other skills in PPI, 'Questioning and Listening' skill seemed to be more significantly improved for the short term of so-called 'test-driven education' at clinical skills.

10W6

Practice OSCEs

F Cottingham, M Britton and A Lewington (Leeds Teaching Hospitals NHS Trust, Leeds, UK)

Background: This poster presents the work undertaken by the St. James's University Hospital Clinical Teachers to provide practice OSCEs for third year medical students on the MBChB at the University of Leeds.

Summary of work: Included on the poster are: 1) The rationale behind the exercise (pre summative OSCE interviews with 36 3rd year medical students revealed high self reported stress levels caused by "fear of the unknown"). 2) The process of preparing, running and administrating the practice OSCEs (pOSCEs). 3) The method of feedback on performance to the students.

Summary of results: Self reported improvements in psychological preparation for the summative OSCE.

Conclusions: It is feasible to provide practice OSCEs for undergraduate medical students using limited resources that leave students feeling better prepared for their summative OSCE.

Take-home messages: Undergraduate medical students benefit from a practice OSCE before undertaking their first summative OSCE and they are not particularly difficult to provide.

10W7

Order effects in third-year students' OSCE performance

J Park and J Ko (University of Kyung Hee School of Medicine Medical Education, Seoul, Korea)*

Background: The purpose of the study was to investigate whether there was evidence for order effects on third-year medical student performance in an OSCE.

Summary of work: Archival OSCE performance data (in the form of a 15-item binary content checklist) from one class of third-year medical students (n = 120) at Kyung Hee School of Medicine (2008) were aggregated and analyzed.

Summary of results: When students' scores were arranged in the order in which they encountered the 6 different cases, there was a gradual increase in average scores from the first case encountered to the last. Secondly, mean case scores were arrayed by encounter sequence in a 6 X 6. A Two-way analysis of variance showed significant main effects for case difficulty (F=65.25, p<.05) and encounter sequence (F=7.54, p<.05, but no significant interaction (F=.92, p= NS).

Conclusions: The results show that there is a practice effects in OSCE, but the leakage of station information could be a major cause of the score increase.

Take-home messages: It is clear that the presence of order effects in OSCE. We need to figure out what to do about them when they threaten the reliability of OSCE.

10W8

The validity of OSCE using standardized patients in occupational therapy education

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Background: There is very little enforcement of OSCE which used standardized patients (SP) in the occupational therapy education in Japan. At our university, OSCE before training has been carried out from last year. This time, the validity of OSCE in occupational therapy education is reported from the questionnaire result after OSCE enforcement.

Summary of work: Objects are 39 university students belonging to the 3rd grade. The questionnaire using Visual Analogue Scale was carried out. Carrying out three booths of subjects about occupational therapy evaluation, the time of each subject was for 7 minutes.

Summary of results: The validity of a check of the clinical skill before clinical practice is high. An effect is high at the point of making an own subject understanding about a student's clinical skill. The feedback from SP showed the tendency for validity to be higher than the feedback from a university teacher.

Conclusions: It was suggested that enforcement of OSCE using SP is useful in occupational therapy education.

Take-home messages: OSCE, standardized patients (SP), occupational therapy education in Japan

10W9

How to enhance physical diagnosis skills: Usefulness of teacher´s feedback in trauma Objective Structured Clinical Examination (OSCE)

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Background: Medical students were being evaluated with OSCEs from 2004, including a trauma section. Physical examination skills are essential to the decision- making process but evidence suggests that the quality and frequency of clinical examinations in teaching institutions have declined. In 2006, trauma teachers decide to introduce intensive instruction in physical examination after OSCEs.

Summary of work: To determine if intensive instruction in physical examination enhances student skills and evaluate those skills using specific trauma stations. Trauma OSCE stations were designed to test psychomotor skills with a combinations of history taking/physical examinations and problem solving skills with SP cases. Performance in the trauma section of a summative OSCE was compared before and after 2006. Data were analyzed using t-tests.

Summary of results: 428 5th year students (157 before (Control group)/271 after 2006 (study group)) were evaluated at the end of the year. The marks of study group (7,5 +/-1,6) were significantly higher (p< 0,001) than control group in physical examination skills. There was no significant difference (p) in marks obtained by both groups in history taking and problem solving skills. Both group performed significantly better in one of history taking and problem solving skills when compared with physical examinations stations.

Conclusions: Intensive physical diagnosis instruction enhances physical examination skills. To analyze OSCEs scores permit modify students learning.

Take-home messages: OSCE´s impact can change the way of teaching after its implementation in a University.

10W10

Raters' reliability and consistency on the objective structured exam video for orthopaedic training: Using a fracture scenario

Alvin Chao-Yu Chen*[1,2], Jau-Wen Huang*[1,2], Wen-Jer Chen[1,2], Shih-Tseng Lee[2,3] and Jeng-Yi Wang [2,4] (Chang Gung Memorial Hospital, Chang Gung University College of Medicine, [1]Department of Orthopedic Surgery; [2]Department of Medical Education; [3]Neurospinal Section, Department of Neurosurgery; [4]Section of Colon and Rectal Surgery and Department of Surgery, Taiwan)

Background: 1) to design a new, quick and efficient method for rater's evaluation using a pre-validated video tape in Objective Structured Clinical Examination (OSCE), 2) to evaluate rater's consistency from different subspecialties and from different level of seniority.

Summary of work: A scenario was videotaped including communication skills assessment of the students using pre-validated checklists. All the Orthopedic attending staff, fellows and senior residents were involved to evaluate the student's performance in the video tape at three different time points. Cronbach's Alpha coefficient was calculated to evaluate the internal consistency of the OSCE checklist construct. Kuder-Richardson-20 coefficient (KR-20) was used to investigate the raters' agreement. Expert validity was calculated by comparing the OSCE experts and other raters using independent t-test.

Summary of results: Cronbach's α for the entire 23-item scale was 0.932 for pre-test and 0.926 for post-test, and confirmed construct validity. KR-20 was 0.96 in pre-test and 0.968 in post-test, and revealed high internal

consistency. P-value in expert validity was 0.626 (independent t-test). The difference was not statistically significant.

Conclusions: A new video-based rater's assessment that is efficient and quick to administer was shown to be reliable, and to demonstrate raters' consistency and some evidence for validity.

Take-home messages: Rater's evaluation was performed using a pre-taped OSCE video to improve rating consistency in OSCE yet retain validity.

10W11

Consistency between the global ratings and checklists in OSCE station scores

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Background: This study assessed the construct validity of analytic global rating and checklists in OSCE.

Summary of work: A 2-hour, 14-station standard OSCE was administered to 120 examiners and 56 qualified raters. There were 30 interns scored on content checklists and these global ratings during a 11-station OSCE. Linear regression was used to assess differences between groups for overall checklist and global scores, and for each of the 5 fields.

Summary of results: The mean global rating correlated well to the checklist system in all 5 different catalog examinations. The correlation between global rating and checklist system was good. There were no differences between interns/junior residents (Year 1) and senior residents. However, higher failure rate was demonstrated by checklist than global rating scale (19.7 vs 9.8%, and the discrepancy was obvious in decision making (p=<.01) and procedure scale catalogs (p=<.05).

Conclusions: Analytic global rating demonstrated good consistency with checklists in OSCE stations, except in decision-making and procedures skill scores. Acknowledgement: The work was supported by Chang Gung Memorial Hospital grant, CMRPG390371.

Take-home messages: There is good correlation between global rating and checklist evaluation.

10W12

The application of objective structured assessment for the essential skills of junior surgical residency

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Background: In Taiwan, surgeons' training was divided into two-year general training, and three to four-year subspecialty training. For the first stage, residents were rotated in different subspecialty, they can obtain the essential surgical skills as well. However, the definition of essential surgical skills and related assessment were not clarified. We setup the essential surgical skills and proposed Objective Structured Assessment of Technical Skills (OSATS) to evaluate our residents.

Summary of work: The program has been underway since 2007. We defined the essential surgical skills for junior residents and evaluated those through a large animal surgery annually. Our faculty performed the OSATS after consciences meeting on porcine model. Two teachers scored same residency. The test takers filled in a questionnaire after test as well.

Summary of results: All the residents passed the assessment. The mean scores was 4.1, fulfilled the teachers' expectation. All the residents were more concentrated on assisting the operation before test. They satisfied the examination and results. They thought the feedback from the examiners such as the weak and the strong part of performance was very helpful.

Conclusions: Through OSATS cannot only examine the essential surgical skills but also provide more clear learning objects on this fragmented rotation residentship.

Take-home messages: OSATS can help junior surgical residents to obtain their essential surgical skills.

10W13

Discrimination of neurology OSCE among different levels of trainees

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Background: To establish high-stake OSCEs and to clarify the validity and reliability of a Neurology Station (NS).

Summary of work: The blueprint included 14 OSCE stations and covered 7 different fields of clinical medicine. The enrolled examinees were divided into three groups, including 29 interns, and residents from fields of Medicine (48) and Surgery (43). The goal of the NS is to test the ability of performance and interpretation of neurological examinations for trainees who have completed medical education.

Summary of results: 119 examinees performed the NS and the mean global rating score was 69.3 with 94 (79%) passed. The discrimination index was 0.381. The mean scores were statistically different ($p = 0.010$) between residents from Surgery (64.8) and Medicine (73.5). The scores among 8 examiners were also statistically different ($p < 0.001$). The difference in the examiners ($p = 0.001$) was independent after adjustment for factors from trainees and examiners.

Conclusions: Our neurological station differentiated well among different examinees. The training of examiners is our first priority to improve the reliability of future high-stake OSCEs.

Take-home messages: A station with well-organized neurological examinations is feasible to discriminate among different levels of trainees and can be used as a high-stake OSCE.

10W14

OSCE assessment analysis for surgical techniques and aseptic concepts before and after surgical training

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Background: Objective Structured Clinical Examination (OSCE) has become a definitive tool in assessing skills and basic competency in medical techniques. Medical interns can be regularly evaluated to ensure that their training and comprehension steadily improves and are thus prepared for future more invasive technical skills application.

Summary of work: The technical skills, namely suturing ability and aseptic concepts of Taiwanese medical interns were assessed and recorded. Scores were based on performance and knowledge before and after a three-month training program: a global rating score of 1-100 and a checklist liker/overall rating score of 1-5.Interns were presented with 6-9 items for assessment and results of their second OSCE determined the best way to evaluate overall comprehension.

Summary of results: Results showed a better, thorough assessment with nine items: Cronbach's Alpha was 0.747.Interns' skill and competency was more clearly defined by their checklist liker score: differentiation r=0.75. A paired-T test was also used to compare their scores before and after assessment, showing significant statistical differentiation ($p<0.05$).

Conclusions/Take-home messages: The OSCE can accurately ensure proper evaluation of medical interns' technical skills, such as suturing ability and aseptic concepts.

10W15

Comparison of the Objective Structured Clinical Examination with the performance of internal medicine and surgery residents in internal medicine problem

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Background: The purpose of this study was to use objective structured clinical examinations (OSCEs) to investigate the difference in performance of undergraduate medical students (UGY) with the performance of year 1 to 6 residents.

Summary of work: 29 medical students and 91 residents participated in this study. They were asked to take a history and diagnose a standardized patient with an internal medicine problem. Medical knowledge, communication skills and clinical findings were evaluated. A sum of the scores from the OSCE performance was used as an overall rating score.

Summary of results: Residents who trained in internal medicine showed significantly higher overall scores than those who trained in surgery, and other division, (including radiology, pathology etc) (83±11 vs 77±11 vs 72±11, respectively, P<0.05). The second-year residents obtained significantly higher scores than third, fourth, and fifth-year residents (81±10 vs 73±10, P<0.05).

Conclusions: Integrating OSCE into different years of resident training is useful and powerful to uncover the deficits of general practice in individuals who have received sub-speciality division training, especial in senior resident groups.

Take-home messages: OSCE is a useful tool to disclose the short comings in resident training.

The work was supported by Chang Gung Memorial Hospital grant, CMRPG390371.

10W16

Factors contributed to postgraduate residents' performance on pediatric Objective Structured Clinical Examination (OSCE)

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Background: The Objective Structured Clinical Examination (OSCE) has become a widely used tool for the assessment of clinical competence in medical education. We want to explore different residents' factors which might contribute to the pediatric OSCE performance.

Summary of work: A 2-station pediatric OSCE was given in 2009 for 90 residents (including 28 first-year, 36 second-year, 15 third-year, and 11 more than third-year residents) from pediatric and the other departments. Each station assessed the residents' history-taking, communication skills and medical counseling with one or two standardized patients.

Summary of results: Twenty-seven residents with first-year postgraduate pediatric training course have better performance than the others. It is not surprising that 11 pediatric residents have higher scoring than the other residents. The senior residents' scores were significantly (P < .05) higher than the first-year and second-year residents' scores. 15 married residents' scores (4 residents with a single child) were significantly (P < .05) higher than the other residents' scores. There was similar performance between the genders.

Conclusions: Postgraduate pediatric training may improve the residents' performance of pediatric OSCE. Married residents, with or without children, performed better on pediatric OSCE than the others.

Take-home messages: Postgraduate year-one pediatric training and marriage status can contribute to higher pediatric OSCE performance.

10W17

Comparison of the Objective Structured Clinical Examination performance in chest X –ray reading in the different years of residency

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Background: The aim of this study was to compare the objective structured clinical examination (OSCE) performance in reading chest X-rays in the undergraduate students (UGY, first- (R1, second- (R2, and third- to fifth-year residents (R3-5).

Summary of work: 120 subjects (29 UGY, 29 R1, 36 R2, and 26 R3-5) read ten standard chest X-ray films and were scored from 1-5. The scores were combined giving an overall score of 1-100.

Summary of results: A significantly higher score was observed in the R1, R2, and R3-5 than in UGY (mean ± SD, 50.05 ± 13.16, 48.58 ± 13.28, 46.69 ± 12.58 for R1, R2, R3-5 and 39.88 ± 11.73 for UGY, p<0.05). In contrast, there were no significant differences among residents from years 1 to 5 (p>0.05).

Conclusions: The OSCE performance in chest X-ray readings was significantly improved after resident training but there was no significant difference between junior (R1-R2) and senior (R3-5) residents.

Take-home messages: Residents performed better in chest X-ray OSCE than UGY.

Supported by Chang Gung Memorial Hospital grant, CMRPG390371.

10W18

Enhancing learning in resident physician sign-out communication through an Objective Structured Clinical Examination (OSCE)

S Larsen and M Lee* (Mayo Clinic, Division of General Internal Medicine, Rochester, MN, USA)*

Background: Reduction in resident physician work hours led directly to an increase in transitions of patient care during hospitalization. Studies demonstrate that residents are not adequately trained in sign-out and poor quality communications have been linked to adverse patient outcomes. Regulations require healthcare organizations to implement standardized handoff communications.

Summary of work: To characterize our current sign-out procedure, we used direct observations and survey of resident physicians. Based on these findings, we developed an objective structured clinical exam (OSCE) and an interactive curriculum to evaluate and train sign-out techniques.

Summary of results: Sign-out duration varied from 4-19 minutes. Our resident survey (N=87) evaluating sign-out perceptions demonstrated that 56% had not had any prior training and 60% had experienced an adverse patient event during training which they felt could have been prevented by improved sign-out. These adverse events varied in severity from missed laboratory values to patient death. The sign-out OSCE and curriculum implemented was perceived as a helpful process learning experience.

Conclusions: Congruent with prior studies, our residents lacked formal sign-out training. Our sign-out OSCE and interactive curriculum was an effective training technique.

Take-home messages: A sign-out OSCE is a novel method for training physicians in sign-out technique, with the ultimate goal of decreasing errors during transfers of patient care.

10W19

Differentiating general medical ability for interns and residents with gynecologic case in a large scale Objective Structured Clinical Examination (OSCE) test

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Background: Chang Gung Memorial Hospital holds a large scale OSCE including clinical-rotating medical students and residents of various disciplines to assess the general medical ability of doctors of different grades.

Summary of work: In December 2009, 119 medics attended a 14-station OSCE test. We set a passing score of 60 points in the Angoff method. Checklist and global rating were used simultaneously.

Summary of results: The mean scores for intern (n=29, 1st year resident (n=28, 2nd year residents (n=36, 3rd year residents (n=16, 4th year residents (n=6) and fellows (n=4) were 75.5+_11.2, 72.7+_11.3, 72.1+_14.1, 71.6+_14.9, 74.2+_13.2, 62.5+-17.6, respectively. The score of fellows was significantly lower than intern (P < 0.05).

Conclusions: Ectopic pregnancy is a common disease in gynecologic emergency, and knowledge of this is required for differential diagnosis for acute abdomen. The low mean score for fellows from non-gynecologic departments might be due to unfamiliarity. Continuing education with a core curriculum containing common cases of different disciplines might be helpful for residents to maintain ability on general medicine.

Take-home messages: OSCE is helpful in assessing general medical ability.

10X   Posters: Postgraduate Training in the Early Years

10X1

Mentoring F1 and F2 trainees - A new concept

Zoe Morris Williams and David Brigden (School of Medical Sciences, Bangor, UK)*

Background: In medical training there is currently no formal mentoring system. This leaves medical education trailing behind colleagues in nursing and teaching. Traditionally medicine has been an apprenticeship, tutored by consultants.

Summary of work: This work reviews the challenges of more junior trainees and less senior support available.

Summary of results: This gulf in support will have the greatest impact on the most junior members (F1 trainees). The first few months in work are the most stressful in any doctor's career and also leave a lasting impression which can impact on job satisfaction, retention and future career choices for some time to come. Offering peer led support at this stage has the potential to greatly enhance job satisfaction, acquisition of professional skills and educational advancement of the Foundation doctor. Using F2 doctors to be voluntary mentors to their F1 colleagues would be an effective way of providing peer led support. There is also the potential for the F2s to benefit from a symbiotic educational relationship with a colleague and enhance their own teaching and training skills for the future.

Conclusions: This provides opportunities for trainees to take responsibility for their own education and become self-directed, reflective and responsible practitioners – skills essential for a continuing career in medicine.

Take-home messages: Mentoring, F1/F2 trainees, Support, Becoming self directed/reflective learners.

10X2

Foundation programme doctors teaching medical students: Who's it for? Them or us?

Susan Kennedy* (East Kent Hospitals University Foundation NHS Trust and KSS Deanery, London, UK)

Background: Doctors must develop the skills, attitudes, behaviours and practices of a competent teacher (FP Curriculum 2007). Learners who prepare to teach others can learn more than learners who prepare only to take assessments or tests (Biswas et al, 2001). A learner-teacher who provides explanations learns more than learners receiving that explanation (Webb, 1989).

Summary of work: The Recognition of Teaching Programme was advertised in a large Trust to all FPDs: each participant was required to undertake three sessions teaching medical students, of which at least one was observed by the local Education Adviser (EA) with written or verbal feedback to the FPD. Evidence of planning and preparation, three pieces of reflective writing, and student feedback/evaluation of their teaching was submitted to the EA. Successful completion of the programme resulted in a letter to the doctor from the DME thanking them for their commitment to excellence in teaching.

Summary of results: Initial programme evaluation suggests participants gained confidence, and gave thought to improving their teaching. They felt they learned more about the subject being taught. Feedback from medical students was enthusiastic, recognising the time, energy and thought committed to FPD teaching sessions.

Conclusions: A programme which helps develop FPDs in their teaching skills will also help their learning.

Take-home messages: Developing teaching skills in FPDs should produce enthusiastic, committed educationalists amongst senior doctors.

10X3

Competency evaluation of clinical forensic medicine during the first year internship program

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Background: Thai general practitioners are legally assigned to co-investigate crime scenes with the police system. With various consequences of the Thai Medical Council Regulation for medical practitioners (2002), medicolegal workloads and relevant competencies have never been studied.

Summary of work: To accomplish the plan-do-check-act loop of curricular development, questionnaires were sent to 87 interns, who graduated from MEDSWU in 2008.

Summary of results: With 93.1% (81/87) return, most responders work in public hospitals and are satisfied with clinical experiences of forensic medicine. Most frequent medicolegal workloads (expressed as monthly frequency, with self-confidence of score 5 in clinical performance [P] and competency [C]) include writing medical records (58, 3.77), medical certificates (40, 4.09), death certificates (4.9, 3.61), wound investigation records (1.7, 3.77) and on-site body investigation (0.87, 2.95). The average self-assessment P+C is 2.9. The most frequently needed forensic reviews (score > 3.5 out of 5) prior to graduation are body assault, blunt/sharp/gunfire injury, traffic accident, rape, fall, toxicants and electrocution.

Conclusions: Based on practical medicolegal workloads, course syllabus in the last two years of clinical clerkships should be designed to enhance clinical P+C.

Take-home messages: According to inadequate cross-country forensic services, requirements of interns' competency should be relevant to knowledge, skill and clinical experiences within the first year internship.

10X4
To establish a framework for teaching program in the community
N Furugaki* and A Hirai (Togane Prefectural Hospital, Chiba, Japan)

Background: In Japan, many postgraduate residents have worked for, not only the Hospitals of the University but also the Hospitals in the community. To establish a framework for clinical education as a continuum from undergraduate clinical clerkships to postgraduate residency programs is an enormous challenge for Japanese medical education.
Summary of work: In Japan, some physicians are requested to seek a new model of postgraduate residency programs in the community.
Summary of results: In the postgraduate residency programs in the community, undergraduate clinical clerkships and postgraduate residents achieved most attitude objectives and performed well on the medical interview and basic physical examinations. They could also observe major symptoms and diseases.
Conclusions: Undergraduate clinical clerkships and postgraduate residents recognized the importance of postgraduate residency programs in the community. This program was suggested to be effective for postgraduate clinical education. It is important for some physicians to establish a framework for clinical education of the hospitals in the community.
Take-home messages: Community-based education (learning) is very important for undergraduate students and postgraduate residents.

10X5
Delirium: An interactive case for foundation year two (FY2) doctors
R Parikh* (The Royal Oldham Hospital, Department of Geriatric Medicine, Oldham, UK)

Background: Delirium is important and under-recognised. As the population ages, increasing numbers of frail patients will be at risk of developing this "Geriatric Syndrome". Thus, all doctors dealing with elders need to appreciate how to prevent or curtail episodes of delirium.
Summary of work: Two consecutive cohorts of FY2 doctors at a district general hospital were asked to consider a written case of a common "call" - an elderly lady with a fractured neck of femur who had become "confused". They analysed and interpreted the case before suggesting actions. A guidebook and interactive presentation helped them complete the task. Feedback was sought using a 6-point Likert scale including whether learners felt better equipped to look after such patients. Learners were asked to answer the question "what will you change in your practice?"
Summary of results: 1) 23 learners participated. 2) All felt better equipped to manage a patient with delirium. 3) Practice changes: a) Consider diagnosis, b) Search for reversible causes, c) Promotion of "conservative" treatment, d) - Need to explain diagnosis to nursing staff.
Conclusions: Using a realistic "call" is a useful vehicle to teach learners about delirium and prompt them to reflect.
Take-home messages: Realistic cases can engage trainees to meet the complex challenges of the "Geriatric Syndromes".

10X6
Embedding safe prescribing in F1 practice
N Walton, S Lord, L Clark and A Williamson (Newcastle Upon Tyne Hospitals NHS Foundation Trust, Royal Victoria Hospital, Newcastle, UK)

Background: Safe Prescribing is a vital F1 competence. Training should bridge the gap between theoretical knowledge and practical application.
Summary of work: F1 trainees undertake a regional Prescribing Assessment at the start of the year. Pharmacists provide written feedback which the trainee discusses with their Educational Supervisor for inclusion in their personal development plan. Pharmacists assess trainees ward prescribing at the end of the placement using a standardised checklist. Trainees attend 3 theoretical sessions, 1 practical injectables and 1 practical insulin session in addition to 2 anticoagulation BMJ online modules.
Summary of results: 1)100% of F1 trainees completed the Module. 2) 54% completed the checklist with the Ward Pharmacist. 3) 99% of trainees completed the Injectable assessment and 98% passed. 4) 97% of F1 completed the Insulin practical session and 100% passed.

Conclusions: A module which uses multiple teaching methods delivered by a multi-professional team is key to success and trainee engagement has been high.

Take-home messages: 1) The module allows trainees to proactively self direct their training within F1. 2) The prescribing checklist completed alongside Pharmacists promotes multidisciplinary working and respect amongst other professionals. 3) Assessed objective evidence of clinical practice is critical and it is important to involve Pharmacists in the design and application of this process.

10X7

Paediatrics during the first foundation year: Help or hindrance
A Moran and E Panayiotou* (William Harvey Hospital, Ashford, UK)*

Background: Traditionally, specialities such as paediatrics, A&E and ITU have been confined to FY2 doctors and above but, an increasing number of trusts now offer these specialities in the initial foundation year. With the introduction of Modernising Medical Careers, FY1 doctors need to make important career decisions at an increasingly earlier stage in their training.

Summary of work: Two doctors undertaking paediatrics in FY1 looked at the relevance of such specialist rotations and its benefits to career planning. The study looked at the views of the staff in the paediatric department and medical students' opinions on the subject were sought.

Summary of results: Initial results indicate that medical students are attracted to jobs that offer the more specialist rotations in FY1. Staff in the paediatric department found it useful to have a consistent extra member of staff but the educational aspect of the role was occasionally lost, with more senior colleagues allocated clinic and on call time ahead of the FY1.

Conclusions/ Take-home messages: Undertaking the more specialist rotations in the initial foundation year can be a good way to help tomorrow's doctors to make informed career choices. It provides practical experience of working the job and offers insight into the lifestyle available at senior level within the speciality.

10X8

A new 12 month Danish postgraduate basic training programme: The doctor's acceptance of the new programme
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Background: Until 2008, Danish postgraduate basic training programme consisted of 18 months mandatory training made up of six months internal medicine, six months surgery/orthopaedic surgery and six months general practice. In August 2008 this Danish 18 month internship training (Turnus) was replaced by a 12 months postgraduate basic training (KBU) with six months employment at a hospital ward (internal medicine or surgery) and 6 months in general practice/hospital ward. The intension was to ensure focus on few essential competences in a strong feedback culture, in order to make specialization faster and ensure the accession of specialists.

Summary of work: Acceptance of the new KBU was evaluated with questionnaires to 1034 doctors. Of these approximately two third followed Turnus and one third KBU programme. The response rate was 66%.

Summary of results: 82% who followed Turnus and 53% who followed the KBU programme felt that the basic training led them to feel ready to continue the specialist training. 0% thought that internal medicine should be spared.

Conclusions: Both Turnus and KBU doctors found the change from a homogenous 18 months programme to a more heterogeneous 12 months programme problematic.

Take-home messages: Further studies of the new KBU basic postgraduate training program in Denmark are recommended.

10X9

Preparation for professional practice for F1 trainees
Alys Burns and Adrian Jennings (East of England Multi-professional Deanery, Cambridge, UK)*

Background: Preparation for professional practice (PfPP) combines the concept of shadowing with a structured induction to working in the NHS, in a context that is both timely and relevant to the new doctor. Potential benefits include new doctors who are better prepared and reduction in clinical risk and improved

patient safety. The East of England Multi-Professional Deanery has introduced a fully funded PfPP week for all new F1 trainees.

Summary of work: Implementation of PfPP included Deanery funding of the basic F1 salary for one week, communications, programme guidance and development, and employment issues including contracts, GMC registration and medical indemnity. PfPP has been evaluated through programme review, and questionnaires for trainees and Trusts.

Summary of results: Positive feedback from Trusts in relation to programme development, organisational and employment induction, educational induction, and preparing new doctors for their role. Positive feedback from F1 trainees with trends suggesting improvement in confidence, reduction in concerns, with expectations of their role changing in a positive sense. They valued shadowing and establishing a support network.

Conclusions: PfPP that is fully funded and developed through a collaborative approach has been shown to benefit both new doctors and Trusts, with the potential to enhance patient safety enhanced and reduce clinical risk.

Take-home messages: PfPP should be introduced as a national initiative for all new F1 trainees in the NHS.

10X10

Promoting the principles of adult learning through small group, self-directed learning to deliver the foundation year 2 curriculum

M Todd (NES, Centre for Health Sciences, Inverness, UK)*

Background: Foundation trainees are asked to sign an Educational Agreement committing to the use of principles of adult learning. In order to promote adult learning and better meet trainees' learning needs whilst delivering the Foundation curriculum, a small group, self-directed learning approach was introduced for FY2 trainees in Inverness, North of Scotland Deanery.

Summary of work: Trainees had one teaching day per month. Groups used the mornings to cover curriculum topics and the afternoons to discuss cases in depth and plan for the following teaching session. One facilitator per group was provided for the afternoon sessions. Questionnaires were completed with every trainee after each teaching session.

Summary of results: Each group missed one topic from the curriculum over the course of the year but covered a number of additional topics pertinent to their group's specific learning needs. Using rating scales, confidence in the learning method and self-rated competence in contributing to the group's learning remained high throughout FY2. Confidence in the topics covered increased and work performance during FY2 was felt to be enhanced.

Conclusions: Self directed learning in FY2 has allowed trainees freedom to cover the curriculum in a flexible manner that matched their learning needs.

Take-home messages: Small group self directed learning has been well received by trainees.

10X11

What is the impact of remote and rural training during the Foundation Programme?

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Background: Foundation Programmes in the North of Scotland Deanery include a remote and rural placement. Each year, around 60 Foundation Doctors spend four months in a remote location and a further six spend one year.

Summary of work: Trainees' expectations of remote working were sought by postal questionnaire prior to the start of their placement/year. Their experiences and long-term career plans were explored by interview at the end. Educational Supervisors were also interviewed to ascertain if additional support was required.

Summary of results: Most trainees approached their placement with a positive attitude but some were ambivalent. All valued the experience and training they had been given. Very few who had not previously considered a career in remote and rural medicine had changed their minds as a result. Educational Supervisors thought benefits for trainees included: close supervision, a wide variety of different cases, cross-speciality working, and greater development of decision making abilities.

Conclusions: Early exposure during postgraduate training may result in some trainees considering a long-term career in remote and rural medicine.

Take-home messages: Whilst all trainees had found these posts to be a rewarding, enjoyable and valuable part of their training programme, only a small number thought they might pursue a career in remote and rural medicine.

10X12

The effect of residency training in internal medicine on quality of life and happiness

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Background: The sequential follow up of quality of life (QOL) and happiness has never been performed. We aimed to study the effect of residency training on QOL and happiness.

Summary of work: Thirty-nine first-year residents in internal medicine program were enrolled. At the beginning, at day 100 and at the second year, the residents answered the questionnaires: WHOQOL-BREF, Subjective Happiness Scale (SHS) and Happiness Measures. Repeated measures and analysis of variance was used to test the equality of means.

Summary of results: One resident resigned, 38 residents completed the study. Fourteen (36.8%) residents were male. Thirty-four (89.5%) were single. Sixteen (42.1%) reported financial problems. There was no change in confidence, expectation and anxiety during the study period. On the contrary, the significant decreasing of general health, SHS, Happiness Measure, all domains of WHOQOL-BREF (physical, psychological, social and environment) was found. The greatest reduction occurred at day 100.

Conclusions: After entering the program, general health, happiness and QOL were deteriorating. Although general health, happiness and environment domain of WHOQOL-BREF showed some improvement at the second year, they are still far lower than at the beginning. What is more worrisome is the continued worsening of psychological domain of WHOQOL-BREF.

Take-home messages: Residency training diminishes happiness and QOL

10X13

Reconstruction of the assessment of physical therapy residents of Hospital Universitário Pedro Ernesto: searching for formative assessment

A I Joia, D Dieguez*, D Afonso and M Araujo (State University of Rio de Janeiro and Pedro Ernesto Universitary Hospital , Rio de Janeiro, Brazil)

Background: This Residency in Physical Therapy is a pioneer in Brazil started in 1992. The new model, based on the concept of formative assessment, was implemented in 2007 after three years of reconstruction.

Summary of work: The process of professionals' educational development began with preceptors aware of the need for changes, participation in institutional regular activities of management and capacity building residence related and integration in external forums. These preceptors ensure the sustainability of these changes as multipliers of these practices.

Summary of results: We achieved knowledge of National Curriculum Guidelines for Physical Therapist graduation facilitating its implementation, building profiles of egress from the residency and candidate to be selected, reconfiguration of the selection process, reconstruction of the assessment model and instruments used, continuing education of preceptor team, strengthening of educational and care practices and institutional paradigm shift.

Conclusions: This process led to questions about the fundamentals, comprehension and organization of education in service leading to conceptual changes, redefinition of theoretical, practical and theoretical and practical concepts, competences and responsibilities of coordinators, preceptors and residents.

Take-home messages: This reconstruction is a powerful tool refining residency, allowing improvements in pedagogical practices of preceptors, in implementation of formative assessment and integral development of resident and qualifying health care.

10X14

Career and advice support at NHS Trusts in Mersey Deanery: More or less?

Alistair P J Thomson* and Jeremy M Brown (Mersey Postgraduate Deanery, Liverpool, UK)

Background: Mersey Postgraduate Deanery is responsible for careers advice and support (CAS) provision for all postgraduate trainees. Foundation Year (FY) trainees need focussed support before application to specialist

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training (ST) posts in year 2 (FY2). To inform a Deanery Careers Support Strategy we identified CAS activity already offered in the deanery.

Summary of work: Open and closed questions on surveymonkey were emailed to Postgraduate Education Centre Managers (PECMs) and GP Course Organisers (GPCOs), who co-ordinated responses by NHS Trust/geographical area.

Summary of results: 10 PECMs and 6 GPCOs replied. All 10 Trusts provided CAS to FY2s, but only 9/10 to FY1s. Post career choice STs and GPTs received considerable CAS (70%, 66%), but Fixed Term Specialist Trainees and Staff and Associate Specialist Grades were offered CAS in only 5 Trusts (50%). Trusts also provided CAS to local sixth formers (60%), preclinical undergraduate (40%) and clinical undergraduates (70%). Types of CAS included: workshops, protected teaching sessions, weekly CAS 'clinics', ad hoc guidance for STs, one-to-one meetings and careers fairs. There was minimal inter-provider coordination.

Conclusions: Trusts are offering differing levels of CAS, but underprovide for target groups.

Take-home messages: A Deanery Strategy should standardise CAS provision by experienced staff.

10X15

Maximising medical meetings as educational opportunities for doctors in training

*Louise Bundock*and Janek Nawrocki (Brighton and Sussex University Hospitals, Dept of Medical Education, Brighton, UK)*

Background: With the recent overhaul of medical training in the UK under Modernising Medical Careers, learning in the hospital environment needs to be increasingly efficient if it is to accommodate shorter foundation training alongside increasing service demands. As imaging meetings and MDMs are commonly cited as learning opportunities for trainees we conducted a small study to assess their effectiveness in this regard.

Summary of work: Twelve clinical meetings within the Royal Sussex County Hospital in Brighton were analysed in terms of their effectiveness as team-wide educational opportunities. Common patterns and simple means for maximising their educational potential were identified.

Summary of results: Meetings to discuss patient management are overwhelmingly dominated by senior team members. Junior members of the medical team are rarely included in discussions, despite having important contributions to make. The physical space within which these meetings take place can potentiate or impede dialogue with the wider team.

Conclusions: The potential for these meetings as educational opportunities for trainees is not being met. Relatively simple strategies could be adopted to maximise these encounters, which need not create added time demands and which would both benefit trainees and improve patient management.

Take-home messages: Senior staff members need to be aware of opportunities to involve trainees during team-wide medical meetings.

10X16

Quality managing the delivery of the foundation curriculum to foundation doctors (FD) in the London Foundation Schools

D M McGuinness, M Adel-Singh, R Lee, I Hastie and A H Frankel (London Deanery, London, UK)*

Background: Foundation training is based on a defined curriculum and training providers are required to demonstrate that all of the curriculum can be delivered to trainees through direct patient contact or formal teaching sessions.

Summary of work: The London Deanery developed an automated Curriculum Mapping Matrix, dividing the curriculum into 59 sections. Supervisors and FDs within all Foundation Training Providers rated the ability of their post to deliver the competencies for each section of the curriculum on a four point scale, ranging from no opportunities to plenty of opportunities.

Summary of results: There was an 86% response rate from supervisors accounting for 2105 foundation programmes. Of these, 1721 (82%) programmes could access all the competencies, with 384 (18%) unable to access components of the curriculum. The commonest deficit was in the Epidemiology and Screening component of the curriculum where 205 (10%) programmes had inadequate exposure, other gaps were less frequent, but common across providers. FD responses suggested access to curriculum competencies within their posts was less than identified by their supervisors.

Conclusions: This curriculum mapping process revealed access to all parts of the curriculum may not be universal for all programmes.

Take-home messages: This process provides a method to meet the regulator requirement to quality manage curriculum delivery.

10X17

Computerized physician order entry systems and medical education: Balancing educational safety and opportunity

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Background: Computerized Physician Order Entry (CPOE) for medication ordering is increasingly recognized as having unanticipated negative consequences. The overall impact of CPOE on medical education has received relatively little attention.

Summary of work: We conducted semi-structured interviews of postgraduate trainees and attending physicians at a large University's medical school. Trainees rotate through its five affiliated teaching hospitals, two of which have implemented CPOE. Data collection and analysis used Grounded Theory methods. We sampled purposively until we reached theoretical saturation.

Summary of results: Our study included 11 trainees and 7 attending physicians. CPOE had positive and negative impacts on five aspects of postgraduate training: learning (better for medication interactions and availability of learning resources, worse for medication dosing and rationale of medication use), teaching (more medication information available for case discussions, less face-to-face teaching), feedback (improved observation of behaviours to inform feedback), clinical supervision (facilitated supervision from a distance and enabled safer patient care, may impede trainee independence), and trainee assessment (better for assessment of clinical decision-making and organizational skills).

Conclusions: CPOE potentially enhances and harms the educational experience for postgraduate medical trainees.

Take-home messages: Educators should capitalize on the educational opportunities associated with CPOE and mitigate aspects of CPOE that potentially threaten the educational safety of postgraduate training.

10X18

What are the educational and pastoral needs of ST1 and ST2 trainees working in general practice? A focus group study

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Background: In recent years GP trainees have been able to extend the time spent in general practice as part of their 3 year training, by the inclusion of posts in the early years (ST1 and ST2). This project will explore the educational and pastoral needs of these trainees, in order to identify the nature of the support required during such attachments.

Summary of work: Working with a group of trainees over 6 weeks, the researcher will explore their perceptions about their learning and development needs, and the role of the clinical tutor/educational supervisor during GP attachments. Areas such as clinical supervision, educational support and peer learning opportunities will be discussed, and consideration will be given to how this differs to their hospital experience.

Summary of results: The presentation will report the findings of the study in the context of the research questions.

Conclusions/Take-home messages: The research will consider the impact of GP posts in the early years of training on the educational and pastoral development of trainees, and the implications for GP educators.

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SESSION 11

11A   Short Communications: Transition from Student to Doctor

11A1
"They didn't teach us this in medical school". How best can junior doctors prepare new foundation trainees for professional practice?
J Williamson, J Pesic-Smith* and K Sritharan*(Basildon and Thurock University Hospital Trust, UK)*

Background: The progression from medical student to junior doctor is well documented as being a time of great educational, professional and emotional change. With the recent Dr Foster report looking at hospital mortality during this changeover period, questions relating to patient safety have also been raised.
Summary of work: A questionnaire to all current FY1 trainees working at an outer London DGH assessed key aspects of the hospital induction process; 1) How well informed the trainees felt for common ward based and on-call duties? 2) How well prepared they felt regarding certain key professional skills? 3) Evaluating areas of success and development of the junior doctors role in the current induction program. 4) Which learning methods were most effective at this time.
Summary of results: We identified a number of key areas in which the role of the junior doctors might have improved the process of induction to the hospital.
Conclusions: Delivery of a structured, topic focused and interactive teaching session to maximize the benefit of the induction period.
Take-home messages: How best can junior doctors help with the induction of new foundation trainees into professional practice? The results of an intervention looking at this question with a view to making this transition more efficient and effective.

11A2
Facilitating the transition from medical student to competent intern: How can the assessment of collaborative competencies help?
A M Olupeliyawa[1,2], C D Balasooriya[1] and C Hughes[1] ([1]School of Public Health and Community Medicine, University of New South Wales, Australia; [2]Medical Education Development and Research Centre, University of Colombo, Sri Lanka)*
Background: Preparedness to collaborate effectively with the healthcare team is essential for the transition from student to competent intern. Assessment strategies to improve competence in collaboration need to be explored.
Summary of work: Literature on collaborative competencies in healthcare and their assessment was reviewed. Semi-structured interviews with clinical supervisors and focus group discussions with final year students were conducted in Australia and Sri Lanka to explore the critical contexts and competencies for an intern, and related assessment needs. Purposive sampling and thematic analysis was pursued till data saturation through 14 interviews and 8 focus group discussions.
Summary of results: The competencies identified as critical, especially in the contexts of patient handovers, consults, emergency situations and seeking support after hours were: knowing own limitations; communicating with clarity and urgency; respectfully liaising with other professions; role adaptability and leadership in emergencies; and proactive decision making within limitations. Students valued assessment in clinical settings, especially when opportunities for feedback and reflection were included.
Conclusions: Performance-based assessments adapted to focus on these critical competencies in these contexts, and embedded within a process of feedback and reflection, may have a significant impact.
Take-home messages: Contextualised assessment of critical collaborative competencies, with support for feedback and reflection, may better prepare students for their role as interns.

11A3
Designing, evaluating and optimising an induction week for foundation year one doctors
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Background: An effective induction programme is essential to ensure safe practice. The information delivered can vary and must take into account the administrative obligations and clinical duties of the doctor. In 2009, Medway Maritime Hospital introduced an 'induction week' for the new intake of foundation doctors. The programme included clinical sessions, workshops, shadowing and administrative instruction.

Summary of work: After commencing work, the new foundation doctors were asked to complete an online questionnaire using 'surveymonkey.com' to rate the usefulness of the week. The responses (61.9%) were analysed, and changes proposed.

Summary of results: Some components were more favourably received than others. The clinical courses and workshops were highly rated, while administrative and lecture based talks less so. Information from 'peers' was enthusiastically received.

Conclusions: This study shows how hospitals can maximise the short time available to provide FY1 doctors with the skills and information helpful in making a smooth transition from final year student to junior clinician. It also illustrates a survey method for gaining feedback, used to ensure the induction programme is responsive, stimulating and well designed.

Take-home messages: Induction week for new doctors needs to fulfill certain criteria but also be relevant and tightly focused on the practicalities of starting work in a new environment.

11A4

Transition from undergraduate to postgraduate training: Views of trainees and supervisors on growth of trainee competence

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Background: Medical trainees face, during their training, several transitions with increasing responsibility. The focus of this study is how competency levels at different stages of training are perceived by trainees and supervisors.

Summary of work: We carried out a mixed method questionnaire and interview study. Questionnaires were completed by final year medical students (n=41), trainees of the first (n=44) and second (n=25) year of the Foundation Programme (FY1 and FY2) and their supervisors (n=45). They were asked to assess the trainees' ability to carry out 16 medical activities. We interviewed 10 final year medical students to explore their perceptions about the transition from student to doctor.

Summary of results: Mean scores for self-perceived competence of trainees are significantly higher on all activities than mean scores given by supervisors for expected competence. Both trainees' and supervisors' scores significantly differ between final year medical school and FY1, but between FY1 and FY2 they do not.

Conclusions/ Take-home messages: It is important to know whether trainees are ready to make the transition to the next educational level. Do trainees overestimate their competence, or do staff underestimate them? Further research is necessary to understand these findings, and relate them to education and patient safety issues.

11A5

Using the job demands-resources model to predict performance in veterinary professionals: The role of personal resources

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Background: Recently graduated veterinary practitioners in the Netherlands have difficulties with the transition from university to practice. We investigated how job and personal characteristics, related to wellbeing and (subjective and objective) performance.

Summary of work: The present study uses the Job Demands-Resources model (Bakker & Demerouti, 2007) to examine these relationships. A total of 865 professionals (73% females and 27% males) and 179 of their colleagues returned a tailor-made theory-based questionnaire.

Summary of results: The results of structural equation modelling did not support the hypothesis that exhaustion mediates the relationship between job demands and in-role performance, but confirmed that work engagement mediates the relationship between job resources and extra-role performance. It also confirmed

the hypothesis that job resources had a positive relationship with personal resources and that those personal resources had a positive relationship with in-role and extra role performance. This direct effect could be confirmed with other ratings.

Conclusions: Job resources influence extra-role performance through mediation of work engagement, while personal resources, powered by job resources, influence particularly in-role performance.

Take-home messages: To improve in-role and extra role performance of young veterinarians, we must focus on improving personal resources during education, but it is equally important to teach employers how to improve working conditions, especially job resources.

11A6

The residency practice-based small group learning program - applying a proven approach from CME

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Background: An important aspect of postgraduate training is to support the transition of trainees to professionals with the skills and commitment necessary for continuing professional development.

Summary of work: The Residency Practice-Based Small Group Learning Program began in 1997, using the approach and materials of its parent CME program with the goal of introducing concepts of effective CPD. Groups of 4-10 postgraduate trainees meet with a trained facilitator on an ongoing basis to discuss evidence-based modules of common interest. The facilitator focuses discussion on case-based experience, encourages active reflection on practice, and promotes practical ways to integrate new information into practice.

Summary of results: Membership has grown to 2300 family medicine residents from 16 Canadian and 3 US sites, and 200 Ontario Nurse Practitioner students. A pilot project is underway in Scotland.

Surveys reveal that the program is highly valued and enjoyed by participants and facilitators. 87% of residents feel it promotes lifelong learning skills, and 91% plan to use a similar CME approach upon graduation.

Conclusions: The Residency PBSG program is an example of a highly successful adaptation of a CME approach and introduces postgraduates to elements known to support practice change.

Take-home messages: Introduction of strategies and skills integral to effective CME is achievable in postgraduate training.

11B   Short Communications: Training for Teamwork

11B1

Effects of high-fidelity team training

T P F M Klaassen, C R M G Fluit, S M Bolhuis, E H A J Coolen and J L C M Loeffen (Radboud University Medical Centre, Nijmegen, The Netherlands)*

Background: High-fidelity team training is considered to be a tool to improve individual technical and non-technical skills as well as team effectiveness. Overall goal is to optimize the recognition and treatment of children with severe illness by paediatric nurses and physicians. Literature suggests that realism of team training and learners' motives for participation, expectations, and self-efficacy may influence the results.

Summary of work: The purpose of this study is to determine changes that high-fidelity team training may bring to the attitudes, motives for participation, and self-efficacy concerning technical and non- technical skills of nurses, residents, and physicians in a pediatric department, and the importance of training realism. Three online questionnaires were constructed.

Summary of results: Data collection from about 150 participants from March - June 2010. Data analysis will take place in July 2010.

Conclusions: The questions will be answered whether participating in high-fidelity team training results in 1) more positive attitudes towards and motives for the training, 2) an increase in self-efficacy for the trained skills. We also conclude 3) how important realism is for this type of training.

Take-home messages: High-fidelity team training is challenging, fun, more useful and effective with an optimal realism level (to be specified after data analysis).

11B2
Adapt collaborative learning to a flexible and interactive (computer based) learning environment through the use of 'Belbin roles'
M Lauwers (University college Arteveldehogeschool, Gent, Belgium)*

Background: If we want to computerize collaborative learning then we must find a way to measure competences such as communication and cooperation.
Summary of work: The Belbin team roles model identifies and explains why some people work together better than others. The students were asked to complete the 'Belbin Self-Perception Inventory' test. This allows the student to identify what team role is most suitable for him/her.
During the sessions of cooperative learning, students are assigned a specific Belbin role which he/she has to use in a correct way at a correct time during the communication process. The qualitative value of this teaching method was investigated through interviews with student focus groups and supervisors.
Summary of results: The quality of the debate improves during the face to face as well as the on-line sessions. By being assigned a team role and having to act within that role, students become aware of different team roles. The problem of hitch hiking is countered. This in turn makes the assessment of the competences such communication and collaboration more transparent.
Conclusions /Take-home messages: Both students and supervisors agree that the Belbin roles help in achieving better collaboration in a flexible and computer based learning environment. Competences like communication and cooperation can be visualized.

11B3
Learning teamwork skills in medical school
A van der Markt, M Hartman* and P de Roos, (Vrije Universiteit Medical Center, Amsterdam, Netherlands)*

Background: Problem Based Learning claims to improve students' teamwork skills, yet the complexity of team tasks in hospital reality is of an entirely different magnitude than what students learn in medical school and practice during their internships.
Summary of work: Observations in the world of "active students" (students engaged in NGO work) showed that students are able to organise large events which require complex and high levels of teamwork skills. We created an elective course which aims to create an optimal learning environment to facilitate learning of teamwork skills in context of student led projects.
Summary of results: 1 team of students organised a national Leadership Summer School for healthcare students, another team organised an international summer School on the bridges between psychiatry and neurology in children and adolescents. Through different assessment methods (e.g. Multi Source Feedback) the teamwork process and outcomes were captured. Each group received 16 hours of skills trainings, to support the project development and teamwork skill development.
Conclusions: The robust assessment appeared to be both fun and demanding. Students appreciated the experience posed by this elective course pilot project. During the pilot one of our academic departments embraced the concept and support was obtained to continue for another academic year.
Take-home messages: Students are up to a challenge as big as they dare to dream. If passing the exam is the biggest dream, we miss out on quite some potential in our students.

11B4
Psychological factors affecting students' engagement with teamwork
J Carroll, J Hart, C Boggis, and I Braidman (The University of Manchester Medical School, Manchester, UK)*

Background: Teamworking is important in modern healthcare and students perceive it as significant in professional behaviour, but what influences their participation in teamworking activities is unclear.
Summary of work: We investigated students' intentions, attitudes and involvement in a teamworking activity, namely production of an assessed poster presentation. A Theory of Planned Behaviour questionnaire was devised investigating students' intentions and beliefs about teamworking, which was completed by 126 second year medical students before and after poster production. Students' reflections on their teamworking experiences were analysed thematically.
Summary of results: Intention and attitudes towards engaging with the teamwork activity significantly increased over the study ($p \leq .05$). The more positive the attitude, the more students contributed to the

activity. Factors concerning social and control beliefs remain unchanged. Students' beliefs did not relate to their overall assessment mark. Analysis of students' journals revealed that several themes such as work management and responsibility for themselves and others were encountered during the teamwork activity.
Conclusions: Students' engagement with teamwork appears related to their intention and attitudes but not to any social influences or perceived confidence. Engaging in teamwork challenges students' professional behaviour.
Take-home messages: Psychological factors are related to teamwork and more research into the area may provide insights into preparing students for teamwork activities.

11C   Short Communications: Staff/Faculty Development 2

11C1
Institutional co-location and professional development among health professions education fellowship graduates
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Background: Factors contributing to professional development after medical education fellowships include a community of peers and mentors (Lown et al., 2009). A related question is whether institutional co-location is associated with professional development.
Summary of work: Forty-eight of 70 graduates (69%) from FAIMER Institute 2001-2006 classes responded to a post-fellowship survey. Questions addressed involvement in the FAIMER community and professional accomplishments.
Summary of results: Twenty (42%) were the only Fellow at their school, and remaining respondents were from schools with multiple Fellows. Almost all indicated they had applied skills/knowledge gained through the fellowship to projects and been asked to serve as educational advisers/consultants. Number of Fellows at the school was significantly correlated with number of FAIMER listserv postings read monthly (r=.36,p<.05) but not number of listserv contributions or number of Fellows or program faculty communicated with monthly. Number of Fellows at the school was not significantly correlated with number of respondents' publications, presentations, or conferences organized.
Conclusions: These preliminary data suggest that institutional co-location alone is not related in the short term to professional activities of fellowship graduates, except possibly listserv reading. Other/additional factors may differentially predict engagement in professional activities.
Take-home messages: While support networks may facilitate professional development, factors other than institutional co-location may determine network effectiveness.

11C2
Ten years of experience in faculty development as a National Center for Medical Education in Japan
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Background: Medical Education Development Center (MEDC), a national centre for medical education in Japan, was established in 2001 with the mission to promote faculty development (FD). Here we report our experience in FD.
Summary of work: We organized nationwide conferences every 3 months. Each of them was 2 to 3 days long and consisted of several workshops and seminars with different themes.
Summary of results: Thirty-five conferences including 157 workshops and 53 seminars were held since 2001, of those, 13 conferences were jointly organized with other medical schools in Japan. Total number of participants was over 4,000. Major participants were medical teachers, however, simulated patients, administrative staffs, and students also participated. Major themes were PBL, communication/behavioral science, community-based education, simulation, portfolio, clinical teaching, assessment, and so on. Organizers and task forces were not only from MEDC but also from all over Japan and from abroad. Visiting professors of MEDC greatly contributed. Over 50% of total participants strongly agreed that the theme and contents of these workshops met their needs.
Conclusions: MEDC served as a national FD center for 10 years and promoted medical education in Japan.
Take-home messages: National teacher training center is essential for the advancement of medical education.

11C3

Findings of a consensus conference on faculty development

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Background: More than 70 national and international leaders in medical education participated in a conference hosted by Baylor College of Medicine February 26-28, 2010. The goal of the conference was to develop recommendations for training faculty who prepare future physicians.

Summary of work: Participants at "A 2020 Vision of Faculty Development across the Medical Education Continuum" conference worked in small groups on topics important in the field of faculty medical educational development including: the biology of learning, the hidden faculty agenda, barriers to effective teaching, teaching skills and attitudes, patient/relationship-centered care, CME, e-learning, bioinformatics, evaluation, and faculty development research. Thought-leaders in each area prepared papers prior to the conference as a starting point for each working group. Recommendations determined by each group were incorporated into the papers and will be published this year.

Summary of results: Preliminary recommendations include a call for centers of excellence in training for medical teachers, the development of a cadre of teachers whose primary mission is teaching, and possible changes to accreditations standards incorporating more training for and support of medical teachers.

Conclusions: A modified Delphi technique is currently being undertaken by the participants to achieve consensus concerning all of the recommendations.

Take-home messages: Final recommendations will be presented at the session.

11C4

Evaluation of a tailor-made postgraduate course in medical education for surgeons

Maha Iqbal, Madawa Chandratilake and Margery Davis (Centre for Medical Education, University of Dundee, UK)

Background: The Centre for Medical Education, University of Dundee, Scotland, UK and the Association of Surgeons of Great Britain and Ireland collaboratively offer a paper-based, distance-learning Postgraduate Certificate Course in Medical Education with tailor-made units for surgeons. Individual participants select 20 out of 70 options for the course. The effectiveness of the course was evaluated two years after implementation.

Summary of work: A questionnaire survey was administered online/post to 201 course participants. The questions focused on funding sources, reasons for enrollment, course content, delivery and overall satisfaction. Issues identified in the questionnaire were explored with telephone interviews.

Summary of results: Fifty-nine participants (29%) responded to the survey and out of them 15 took part in telephone interviews. The course is self-funded by 86%. Respondents felt the course was value-for-money. For the majority, the course was useful for personal/professional development; meeting the needs of surgical education; and self-reflection. Most of them preferred the printed material to e-learning and the flexibility of completion to imposed deadlines. They wished to have more interaction with peers and tutors.

Conclusions: The customized course met respondents' needs except those for interaction. The print-based delivery method and learner- controlled pace of learning seemed to be attractive to surgeons.

Take-home messages: Tailor-made units delivered appropriately enhance the utility of medical education courses.

11C5

Development and implementation of a medical education scholars program for house officers

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Background: We saw a need for preparing residents and fellows for clinical faculty positions involving medical education (ME) or healthcare administration (HCA), and developed a new program to meet this need.

Summary of work: Our ME curriculum covers education broadly, including theory of education, teaching skills, assessment, and educational research. The HCA track includes sessions on healthcare economics, law and regulations, hospital administration, human resources, and information technology. We recruited speakers from the Medical, Business, and Law Schools, as well as the School of Public Health, the IT Department, and

international contacts. Each track provides a 20-month fellowship-like experience, with prerequisite readings, seminars and scholarly projects.

Summary of results: Participation is very broad, including surgery, radiology, emergency medicine, pediatrics, cardiology, neurology, anesthesia, and psychiatry. Average attendance to date is 73%. Self-assessments of knowledge and confidence in applying key concepts showed significant improvement (mean effect size = 1.36 +/- 0.56), as did objective pre-post knowledge assessments (paired t-tests yield effect sizes ranging from 0.7 to 1.6).

Conclusions: We have successfully implemented a scholars program that can accommodate HOs from a range of specialty training programs with varying clinical scheduling challenges.

Take-home messages: A medical education scholars program is attractive to house officers and helps them prepare for future positions of leadership.

11D   Short Communications: Communication Skills

11D1
The impact of communication training on communication skills in real practice: Peer role-playing vs. standardised patients

Claudia Schlegel[1] and Ulrich Woermann[2] ([1]Berner Bildungszentrum Pflege; [2]University of Berne, IML, Berne, Switzerland)*

Background: A used method proven to be effective in communication skills training (CST) is peer role-playing. CST with Standardized Patients (SP), is effective too but more complex and expensive. The comparative effectiveness of these methods has not been investigated extensively. The aim of our study was to determine if the students' perception of self-efficacy, the patients' perception of the students' communication skills and the clinical supervisors' observation of the students' communication differed according to the CST method with which students had been trained.

Summary of work: Subjects were 55 first-year students at the Educational Center of Nursing in Berne, Switzerland. A randomized post-test-only control group design was used. The intervention group underwent a CST with an SP. The CST consisted of one-to-one training with direct oral feedback by the SP. The control group practiced communication skills with peer role-playing and mutual feedback. For the post-test, students rated their self-efficacy, whereas real patients and clinical supervisors evaluated the students` communication skills with instruments established in the literature. The post-tests were scheduled at the beginning of the students' clerkship.

Summary of results: Our results showed no significant difference between the intervention and control groups regarding students' evaluation of self-efficacy and rating by real patients. However, the clinical supervisors rated the communication skills of the students in the intervention group as being significantly (p<0.0001) superior to those of the control group.

Conclusions/Take-home messages: In summary, the results of our study show that CST with SPs is superior to CST with peer role-playing when measured by clinical supervisors

11D2
The transfer of communication skills: From undergraduate medical training to post-qualification practice

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Background: Studies have recognised that communication skills' learning is not always transferred to the workplace. Experiential communication training has been shown to be more effective in improving doctor's skills in longitudinal work. This study investigated the skills of junior doctors and related their competencies retrospectively to their undergraduate training, to ascertain whether any particular method of communication skills training facilitated transfer more effectively than others. Does amount and type of undergraduate communication training have an effect on quality of consultation with patients post-qualification?

Summary of work: 105 real patient consultations (35 doctors providing 3 consultations each) were rated (by communication experts trained to reach inter-rater reliability) for the doctors' abilities to use key skills, gather/share information and respond to patient concerns (using a validated scale).

Summary of results: The majority of the samples were competent communicators. Undergraduate training had a significant effect upon postgraduate competence. Comprehensive, regular, small group teaching sessions correspond to the highest scores on all sections of communication, Informal and lecture based methods of undergraduate teaching correlated to less good communication.

Conclusions: Interactive comprehensive training of 8-12 hours per year, transfers most effectively to higher rated communication, confirming the benefits of training in communication at an undergraduate level.

Take-home messages: This study has shown that comprehensive training at the undergraduate level enhances skills displayed post qualification communication training post-qualification may be of worth, to increase and maintain skill level.

11D3

Initial evaluation of EPSCALE, a rating scale that assesses the process of explanation and planning in the medical interview

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Background: Explanation and planning is important for a successful medical interview. There are few instruments available that objectively assess skills in this area.

Summary of work: Objective: to evaluate the content validity, internal consistency and generalisability of EPSCALE, a rating scale to measure communication skills in explanation and planning. Content validity: consensus exercise and expert review. Internal consistency and generalisability: estimated (with124 clinical students at 4 OSCE stations with simulated patients, during finals examinations) by coefficient alpha, generalisability coefficient and variance components.

Summary of results: Content validity was supported by consensus exercise and expert review. Internal consistency was high: coefficient alpha > 0.8 for all 4 OSCE stations. Generalisability coefficient for 4 OSCE stations was 0.50.

Conclusions: EPSCALE has content validity and high internal consistency when used to assess explanation and planning skills in the consultation. It achieves reliability, in a 4 OSCE station examination setting, comparable to that of other assessments. Further work will explore the scale's validity by other measures.

Take-home messages: EPSCALE has content validity for assessing skills in explanation and planning with acceptable reliability. Subject to further work on its validity, EPSCALE holds promise as a practical tool for assessing explanation and planning in both formative and summative situations.

11D4

Teaching communication to medical students by a role-playing simulation of the digestive physiology

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Background: Spanish medical students are highly motivated. However, their communication skills have been pretty much unattended. To improve these skills, we carried out a role playing simulation about the digestive physiology.

Summary of work: Students were randomly distributed in small groups (4-5 students) (n=100) ascribed to one of the digestive functions (motility, secretion, absorption, nervous control and endocrine control), and several groups shared the same function. They discussed the physiological function and decided how to represent it. Furthermore, they communicated with other function groups that interact with their function. Three sessions of 1 hour each distributed in 15 days allowed to create the rules and the staging. All of the groups worked together in the definitive representation, after 2 rehearsals.

Summary of results: After the experience, the students completed a survey about their satisfaction. Most of them stated that it was positive for several items related to the group dynamic (70%) and the role playing staging (88%). Moreover, the students considered that both the appreciation for their classmates (73%) and the understanding of the physiology (69%) increased.

Conclusions: We found that the organization of a role-playing simulation of the digestive physiology, for the first grade medical students, was a motivated task to improve communication.

Take-home messages: A role-playing simulation about digestive physiology improves communication in medical students.

11D5
Improving the quality of patient care: Communication skills curriculum in training of anesthesiology residents
Arif Marsaban, Endang Basuki and Ratna Soenarto (University of Indonesia, Jakarta, Indonesia)*

Background: Communication skills mostly are taught to medical students, but in most resident training, these skills are no longer given. Observation in Anesthesiology Residency Training at Faculty of Medicine University of Indonesia showed that several ethical issues were occurred related to ineffective communication. Ineffective communication between doctors and patients and or the family could happen during the medical counseling, breaking bad news, or during preoperative period between health providers. Those problems could induce patient's dissatisfaction or health providers' inconvenience.
Summary of work: To achieve optimal results, communication skills should be taught along with the basic knowledge of humanities and bioethics. In our residency training, this subject is given one credit and spread throughout 7 semesters, with the concentration in the first semester.
Summary of results: The communication skills are given in 700 minutes, humanities 450 minutes and bioethics 500 minutes. The subject is given by interactive lectures, case discussion, role play, video demonstration, doctor-patient communication using simulated patient. Videotaping is also done for the purpose of learning process.
Conclusions/Take-home messages: With the combine knowledge of humanities, bioethics and communication skill, it is expected that anesthesiology trainees would become good anesthesiologists that administer a high quality of patient care and eventually will assure patients' safety.

11D6
Knowledge of medical interns and residents regarding skills of patient-physician communication: a gap in medical curriculum
Amir Ziaee Hadi Zamanian[1], Leila Bahramkhani[2], Leila Sabzmakan[3] and Alireza Molaee[2] ([1]Tehran University of Medical Sciences; [2]Ghazvin University of Medical Sciences; [3]Yazd University of Medical Sciences, Iran)*

Background: The aim of this study is to assess the knowledge of residents and interns about patient-physician communication skills because of its important role in diagnosis and patient satisfaction which result in treatment.
Summary of work: A 15 item questionnaire was completed by 47 interns and residents in educational hospitals of Ghazvin University of Medical Sciences. This tool had two dimensions of basic communication skills and patient specific skills such as interview strategies, patient-physician communication models and etc.
Summary of results: The mean score was 7.14 (SD=2.51) from total score 15 with mean score 3.02 in patient-doctor communication skills and 4.14 in basic communication skills.
Conclusions/Take-home messages: These results show a remarkable gap in medical curriculum in Iran regarding communication skills in medical practice. It is suggested integrating some communication issues into the medical curriculum to remove this important deficit which leads to patient satisfaction and help doctors to reduce and prevent medical errors resulting from poor patient-physician communication.

11E   Short Communications: Educational Research

11E1
BEME Review of the evidence linking conditions, processes, and outcomes of clinical workplace learning
N Tan[1], B Woolley[1], HPA Boshuizen[2], R Gick[5], R Isba[1], K Mann[3], A Scherpbier[4], J Spencer[6] and T Dornan[1,4] ([1]University of Manchester, UK; [2]Open University of the Netherlands; [3]Dalhousie University, Halifax, Canada; [4]Institute for Medical Education Maastricht University, The Netherlands; [5]Keele University; [6]Newcastle University, Newcastle, UK)*

Background: We set out to synthesis an interpretation of how medical students learn in workplaces, how education and practice interrelate, what learning outcomes ensue, and how workplace learning environments foster outcomes.

Summary of work: A search covering 6 databases identified 72,000 articles in the period 1982-2006, which were hand-screened to identify informative English language articles. From the 2000-2006 subset, a final set was selected that fulfilled the criteria: Workplace learning; undergraduate medical education; empirical research. Causal relationships predicted by a model of 'experience based learning' were sought and coded to a web-based database, structured to represent the components of the model. Coding by 7 members of a multidisciplinary, international team preceded a qualitative evidence synthesis.

Summary of results: This review illustrates the strength of constructivist evidence synthesis, which allows conclusions to be drawn from a massive, mixed methods dataset. Of the many conclusions that can be drawn from it, one interesting example is that many learning outcomes are described in affective terms, whilst affective features of learning environments are not so often highlighted.

Conclusions: This review provides an example of constructivist evidence synthesis and illuminates how medical students learn in workplaces.

Take-home messages: Methodological developments in evidence synthesis provide rich insights into educational processes.

11E2

Phenomenology as research approach in medical education: Characteristics and empirical examples

S Edelbring*[1] and L O Dahlgren[2] ([1]Dept of Learning, Informatics, Management and Ethics, Karolinska Institutet; [2]Dept of Behavioural Science and learning, Linköping University, Sweden)

Background: In contemporary educational research learning is not necessarily determined by outcomes measured by scales or prefabricated instruments. Student learning is rather looked upon as a process where individuals learn in relation to what is meaningful to him or her (Marton & Booth). This implies that the students' perception of their learning environment is of importance for the researcher. Phenomenology is a research approach focusing on how individuals experience their environment and thus, suitable for such investigations.

Summary of work: The empirical phenomenological approach has been investigated regarding its aim and procedures. Elements of this approach will be presented illustrated by a recent study.

Summary of results: Phenomenology has characteristic core elements that the researcher must acknowledge.

Conclusions: Husserl's phenomenological philosophy constitutes an excellent base for a research approach that aims at taking a subjects standpoint as a foundation for the research. A medical education researcher can be overwhelmed by philosophical literature, but contemporary psychologists have worked out empirical methods making the philosophy feasible to carry out in practice.

Take-home messages: Empirical phenomenology is a research methodology highlighting individuals' experiences, adapted from Husserl's philosophical method. There are guidelines that break down the approach into practical procedures that make the approach possible to carry through in a medical education context.

11E3

Considering the 'trustworthiness' of taking an ethnographic approach to educational research

C Mann* (University of Nottingham, School of Veterinary and Medical Sciences, Nottingham, UK)

Background: This research reports on the implications of taking an ethnographic approach to educational research and of presenting this work to a Science based community.

Summary of work: The researcher is undertaking a PhD in 'The Student Experience of Learning to be a vet in a new Vet School'. At various times presenting the work to a scientific audience has raised unanticipated questions of the validity and reliability of the work. This paper reports on the methodological justification for the approach and the importance of describing this work in a voice relevant to the scientific community.

Summary of results: The research reports that validity and reliability are less suitable measures of 'trustworthiness' in educational research than translatability. Generalisability cannot be an aim in a context which is not replicable but findings can be useful if they can be transferred to other contexts.

Conclusions: The value of ethnographic educational research is through thick description in presenting findings to provide an understanding of learning in context which may then be transferable to other contexts.

Take-home messages: Presenting educational ethnography to a scientific audience requires an understanding of the audience. Ethnography may not be valid, reliable or generalisable but can demonstrate rigour using other constructs and add value through transferability.

11E4

Obser-view seen as a data-generating method and a learning space

Linda Kragelund (National Centre of Competence Development, The Danish School of Education, Aarhus University, Copenhagen NV, Denmark)*

Background: Different types of qualitative interviews are described in publications about methods for generating data in qualitative research. Different types of observation are also described. Both interviews and observation are acknowledged and used tools for generating data in qualitative research.

Summary of work: Obser-view is a method of generating data, which is almost not described in literature about methodology, even though it is a tool which provides a link between observation and interview. The obser-view process is offering the researcher a deeper understanding of the empirical data than can be gained from observation and interview alone. Following the researcher's observation of the participant at work, both parties meet to reflect on, and discuss, the situation and the participant's approach to it. The researcher serves as a catalyst for reflection. In this way, the obser-view also becomes a learning space.

Summary of results: I will explain how I developed the obser-view process and illustrate how three methods, namely observation, obser-view and interview, were combined for a qualitative research project. Finally, I will argue that this integrated approach improves the internal validity of qualitative research, because each method brings a different perspective to the data obtained.

Conclusions: Combining observation, obser-view and interview in qualitative research improves the internal validity of the research, because each method brings a different perspective to the data obtained.

Take-home messages: Obser-view can be seen as a data-generating method and a learning space. Combining observation, obser-view and interview in qualitative research improves the internal validity of the research.

11E5

Applying developmental evaluation design to continuing health education

Rahim Vaani, Kathryn Parker, Ann Russell, Abi Srihanan, Ivan Silver and Jane Tipping* (Office of Continuing Education and Professional Development, University of Toronto, Canada)*

Background: A method of evaluation will be described that can capture the complexities of learning as well as serve as a tool for enhancing learning "in the moment".

Summary of work: The Continuing Education Leadership Program (University of Toronto) was used as our field employing a Utilization-Focused framework (Patton, 2007). This framework allows for a blended approach that provides useful information for program development and contributes to the scholarship of curriculum development and evaluation. Appreciative inquiry (Preskill & Catsambas, 2004) sessions with primary intended users of the evaluation was conducted identifying questions that then provided the direction of the research. Learners, program planners and faculty are involved in the creation of questions, data collection, analysis and future action plans. This is a novel method for CHE program evaluation and will provide much sought after information on evidence-informed curriculum design and improvement.

Summary of results: This is work at early stages. The CELP program will begin mid March 2010 therefore at the point of writing this abstract no results are available. Preliminary results will be presented. The process of designing the evaluation plan including obstacles encountered will be discussed along with results.

Conclusions: To be determined.

Take-home messages: Education research needs to shift from a focus on linear outcomes to one that encompasses the complexities of effective learning.

11F   Short Communications: Progress Test

11F1

Clinical exposure helps medical students develop higher order thinking

A Boles, K Sunger, F Ahmed, A Owen and G Byrne (Education and Research Centre, University Hospital of South Manchester, Manchester, UK)*

Background: Complex (or higher order) thinking skills are essential for medical practice. Assessments such as the Progress Test (PT) act to assess this through multiple choice questions (MCQs). This study aims to measure the rate of students' acquisition of knowledge, and to assess the development of their higher order thinking by analysing longitudinal PT results.

Summary of work: The performance of students in the PT demonstrated a step-wise improvement. Performance in higher order cognitive difficulty MCQs showed a steep improvement at the start of clinical training, whereas lower order cognitive difficulty MCQs showed a monotonous increase. These differences were statistically significant.

Summary of results: Three student-raters independently tagged the cognitive difficulty level of eight consecutive PT papers (1000 MCQs) according to a modified Bloom taxonomy. Anonymised PT result data for a single cohort was obtained and repeated measures ANOVA and paired t-tests performed to analyse these results over time and by cognitive difficulty.

Conclusions: The results of the study corroborate those of previous studies. The steep improvement in higher-cognitive difficulty MCQs suggests that students rapidly develop higher order cognitive skills at the beginning of clinical training.

Take-home messages: These results seem to support the implementation of integrated early clinical exposure in undergraduate medical curricula.

11F2

Progress on progress testing: Barts and the London's initial experience of the UK Multi-School Progress Testing Project

J A Patterson[1], P A Revest*[1], D B Swanson[2], K Holtzman[2], M V Nelson[2] and M M Langer[2] ([1]Barts and the London School of Medicine and Dentistry, Queen Mary, University of London, UK; [2]The National Board of Medical Examiners (NBME), Philadelphia, USA)

Background: Since 2007 Barts and the London (BL) have collaborated with the NBME and three other UK medical schools to pilot the use of web-based progress testing. Details of test administration and psychometrics will be published elsewhere.

Summary of work: BL began testing in autumn 2008. Tests are based on 960 single best answer questions recently retired from the USLME Step 2 question bank and edited into UK format by academic staff of the collaborating UK schools. Questions were carefully matched to provide several 'forms' of the test to minimise repetition of test material in each successive test. Secure web based tests for cohorts of 300+ students ran without administrative problems. The 120-item tests were equated and the results provided prompt and detailed personalised feedback (covering 21 test blueprint domains) to each individual student.

Summary of results: The tests, used formatively twice each year at BL, perform well. When several cohorts are tested simultaneously, results show clear performance increments with developmental stage. The expected stepwise progression of scores is also clearly seen as a single cohort progresses through the course. The data for Year 5 students also show a good correlation with our MTAS academic ranking scores.

Conclusions/Take-home messages: Sub-cohort differences (e.g. graduate entrants' performance) are measurable.

11F3

Progress Testing in postgraduate dental education

C Woffindale*[1], L Coombes[1], E Kay[2], C Ricketts[1] and J Bennett[1] ([1]Peninsula College of Medicine and Dentistry, University of Plymouth Campus; [2]Peninsula College of Medicine and Dentistry, Tamar Science Park, Plymouth UK)

Background: Progress testing (PT) has seldom been applied to student evaluation in postgraduate (PG) settings. Yet it is an ideal tool to study knowledge change during the transitional period from university to independent professional practice. UK dentistry provides a good model. After graduation practitioners enter a year of vocational training when they meet regularly and are accessible for PT. We studied this transition and used PT to compare the performance of vocational trainees (VDPs) to that of UGs.

Summary of work: PTs, comprising 30 questions drawn from the Peninsula Dental School question bank, were delivered to 64 VDPs from 3 UK regions. Prior to use, all questions were subjected to internal review. VDPs were invited to provide feedback regarding their PT experience.

Summary of results: VDP scores were normally distributed (range from 38-75%). VDPs from different regions generated comparable performance profiles, scoring significantly higher than UGs. VDPs found the test useful for self-evaluation.

Conclusions: VDPs from different parts of the UK performed equivalently suggesting equivalence in their training, and their scores represent a stepwise increase on those achieved by UGs. Nevertheless, the range of scores achieved is worrying.

Take-home messages: PT has great potential as an assessment and evaluation tool within postgraduate dental education. Financial support from COPDEND is gratefully acknowledged.

11F4

Comparison of single best answer and true-false items in testing students' knowledge accumulation

K Hakkarainen[1], N Hutri-Kähönen, J Jääskeläinen, K Kaukinen, T Koskela and E Leinonen (University of Tampere, Medical School, Tampere, Finland)*

Background: Tampere Medical School has used Progress test of true-false (TF) items in formative assessment. In January 2010 a study was performed comparing Single Best Answer (SBA) and TF format.

Summary of work: Teachers wrote SBA items with three to five alternative answers and corresponding TF items. SBA test was scored either right answer 1 point, wrong answer minus ½ point or wrong answer 0 points, the TF test right answer 1 point, wrong answer minus 1 point. Tests consisted of 220 items. 184 students performed a TF test, 203 students SBA with no wrong answer penalty and 207 SBA with penalty. Fifty two per cent of them took part in web-based voluntary evaluation.

Summary of results: The mean scores rose steadily according to year in all formats, achieving in the sixth year 63,6 % of maximal score in the SBA with no penalty, 41,6 % in SBA with penalty points and 43,6 % in the TF. The error rate in SBA without penalty peaked at third year and declined sharply in the fourth year. SBA format led to higher scores in basic sciences in all years.

Conclusions: Clinical relevance can be better achieved with SBA items.

Take-home messages: Balance between reward and penalty is important for successful testing.

11F5

Progress testing at St George's, University of London: Initial experience of the UK Multi-School Progress Testing Project

J W M Chow[1], D B Swanson[2], K Holtzman[2], M V Nelson[2] and M M Langer[2] ([1]St George's, University of London, London, UK; [2]The National Board of Medical Examiners (NBME), Philadelphia, USA)*

Background: St George's, University of London (SGUL), in collaboration with the NBME and three other UK medical schools, is piloting the use of jointly developed web-based progress tests built from recently retired USMLE material.

Summary of work: Since the test is done three times a year, it allows longitudinal tracking of performance of the students and provides feedback to students, tutors and the institution. Prompt and detailed personalised feedback covering 21 test blueprint domains is given to each student. This provides additional information to enhance the personal tutor system, adds a dimension to career guidance and highlights students who need extra support. Among the UK schools, SGUL is the only one that is using the test summatively. We have applied the Cohen method to set a pass mark for each test. This, together with algorithms of performance at each of the three tests determines academic progression to the following year of study.

Summary of results: Results of these tests also correlate with other SGUL tests.

Conclusions/Take-home messages: Progress testing plays a role in summative testing while providing regular feedback to staff and students. It also provides information for curriculum development and evaluation.

11G   Short Communications: Problem Based Learning 2

11G1
Effective block coordination in a PBL curriculum
M Magzoub and N Ahmed (Department of Medical Education, College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia)*

Background: Block coordination is one of the most important activities in a PBL curriculum. A lot of research has been carried out on the effectiveness of tutor, whereas little is known about the effectiveness of a block coordinator. The College of Medicine, King Saud bin Abdulaziz University for Health Sciences, is a newly established college adopting a strong PBL and web-based curriculum. The aim of this study is to identify the characteristics of a qualified coordinator, define the roles of the coordinator, and highlight the activities that should be conducted before, during, and after the block.

Summary of work: Focus group discussions were conducted with block coordinators in addition to direct observation and records review were used.

Summary of results: Results Six qualifications were identified for the block coordinator, such as participation in block planning group and familiarity with academic regulations. Thirteen roles were identified for the block coordinator, for instance monitoring the progress of activities in the block. Finally, nineteen activities were identified for the block coordinator before, during and after the block, such as conducting assessment items review meeting.

Conclusions: Identifying the role and activities of the block coordinator were found helpful in planning, implementation, and evaluation of the block.

Take-home messages: Active involvement of coordinators in identifying their roles was found to be helpful in setting policy and procedures which will be used for planning and evaluation purposes. This policy contributed a lot to the improvement of the different blocks implementation.

11G2
Introductory sessions enhance students' acceptance of PBL curriculum
A S Malik and R H Malik (Universiti Teknologi MARA, Selangor, Malaysia)*

Background: Faculty of Medicine, UiTM follows a hybrid PBL curriculum since its inception in 2003. The school leavers joining the Faculty not only have to cope with the challenging university life but also grapple with the change in teaching/learning approaches from a traditional to PBL curriculum.

Summary of work: To familiarise the students with the PBL curriculum, the Faculty introduced an interactive lecture and a PBL session in the orientation week of the MBBS course. Students' feedback about these sessions was analysed by using GraphPad QuickCalcs online software.

Summary of results: Interactive lecture: 1.8% students before and 13.6% after introduction of interactive lecture found PBL as MOST useful method of learning ($P = 0.0101$). PBL package: 8% students before and 13.8% after introduction of PBL package found PBL as MOST useful method of learning ($P = 0.1357$). Abolishing the PBL package: After abolishing the introductory PBL session, the students' acceptance of PBL as a useful method of learning dropped from 78% to 75% ($P = 0.6220$).

Conclusions: An interactive lecture enhanced students' acceptance of PBL curriculum significantly. A PBL session further enhanced students' acceptance but did not make a statistically significant additional difference.

Take-home messages: Introductory interventions in the beginning of a course enhance students' acceptance of PBL curriculum.

11G3
Innovative veterinary education at Western University of Health Sciences; A summary of the inaugural seven years
J Tegzes (Western University of Health Sciences, College of Veterinary Medicine, Pomona California, USA)*

Background: Western University of Health Science's College of Veterinary Medicine (WU CVM) admitted its charter class in 2003, becoming the newest veterinary program in the USA. Fully accredited in 2010, its successful and ground breaking program is based on its problem-based learning (PBL) and distributive model for clinical training, being the first American veterinary school without a teaching hospital.

Summary of work: The curriculum has been thoroughly planned and closely monitored for the past 7 years. Many internal and external measures have been used to evaluate the effectiveness of the curriculum, and to ensure the success of the graduates. Through continuous monitoring and improvements, our PBL curriculum is unique among veterinary curricula, and we have successfully delivered a dynamic and challenging clinical curriculum without a teaching hospital.

Summary of results: Measures of successful graduates, including pass rates on both the PAVE and NAVLE, have steadily increased in each successive year.

Conclusions: WU CVM has proved that PBL and distributive clinical training leads to successful veterinary graduates.

Take-home messages: Veterinary education can succeed without lectures, and without a teaching hospital, using a distributive clinical model.

11H Workshop: Measurement of clinical skills: Advanced topics
K Swygert[1] and A Jobe[2] ([1]National Board of Medical Examiners, Philadelphia; [2]Clinical Skills Evaluation Collaboration (jointly NBME/ECFMG), Philadelphia, PA, USA)*

Background: Assessment of clinical skills is a crucial part of undergraduate medical education, and the use of clinical skills examinations for both formative and summative assessment is now widespread. The United States Medical Licensure Examination (USMLE) series has included a clinical skills assessment since 2004, and there is a great deal of literature summarizing the psychometric properties of these types of examinations. A thorough understanding of these properties is essential, especially in a high-stakes environment.

Intended outcomes: This workshop will provide an overview of the advanced quantitative measures for clinical skills assessments using standardized patients, including potential equating/scoring processes for rating scales, comprehensive rater/score quality control measures, validity evidence for scores and outcomes, and generalizability theory applications (reliability and standard errors).

Structure: The workshop will open with an overview of scoring considerations, with time allotted for audience discussion of scoring concerns. Breakouts into small groups to discuss specific assessment examples will be used, with a final reconvening to share small group work.

Who should attend: Medical school faculty and assessment administrators who have a firm understanding of the basic quantitative issues surrounding clinical skills measurement and would like to advance their knowledge.

Level of workshop: Advanced.

11I Workshop: The wealth in silence - communication beyond conversation
Amy Flanagan Risdal (Assistant Professor, School of Medicine, Uniformed Services University, Bethesda, Maryland, USA)*

Background: Can you read someone's thoughts just by looking at their facial expressions? Common opinion would say No, and common opinion is correct... to a point. While specific thoughts can't be decoded by watching facial expressions, specific emotions play across the face constantly. Dr. Paul Ekman began researching facial expressions in the late 1960s, and through years of work created the Micro Expression Training Tool (METT). This tool has been proven to teach people with no previous experience how to recognize very brief (less than 1/4 second) facial expressions - a powerful tool that provides detailed insight into what a person may be feeling, even if he or she is unaware of the emotion.

Intended outcomes: Through individual, hands-on training, participants will learn: (1) The seven emotions with universally recognized facial expressions (Happiness, Sadness, Fear, Anger, Disgust, Contempt, and Surprise); (2) Micro Expressions (those that appear on the face for 1/4 of a second or less), and will practice their new skills by watching video clips and receiving immediate feedback.

Structure: 10 minutes: Introduction; 60 minutes: Training; 20 minutes: Applications and Discussion.

Who should attend: Those who are interested in enhancing interpersonal skills training for medical students, residents and beyond, or simply augmenting their own interpersonal skills.

Level of workshop: Intermediate.

11J Short Communications: Entry to Medicine and Graduate Entry Programmes

11J1

The present state and problems in graduate entry program (GEP) in Japanese medical schools
N Nara[1], T Suzuki[1] and Y Nitta[1,2] ([1]Tokyo Medical and Dental University, Center for Education Research in Medicine and Dentistry; [2]Common Achievement Tests Organization, Tokyo, Japan)*

Background: There are 80 medical schools in Japan which regularly educate 18-19 years old high school graduates in 6 years programme. Forty-four schools are national, 8 are provincial or city, and 28 are private. Twenty-eight national schools and 8 private schools have partly introduced 4-5 years graduate entry programme (GEP) which accept graduates from non-medical colleges. GEP students are 5-40, while the regular course students are 80-120 per class in each school. It is of interest to compare which programme is better to foster medical doctors.

Summary of work: We visited 27 national medical schools which have partly introduced GEP and discussed about the state and problems in GEP with the deans and administration affairs.

Summary of results: GEP students are older and usually study harder than the regular course students. Therefore, they get the higher score at 1-2 year class than the regular course students. However, there was no definite difference at the graduation.

Conclusions: GEP has some advantages in medical education; the students with higher motivation can be educated, and they learn harder than younger students. However, there is no significant difference at the graduation between both courses.

Take-home messages: We should be careful to introduce GEP in all Japanese medical schools.

11J2

Do graduate and non-graduate medical students have different learning preferences?
Shihab Khogali (University of Dundee, School of Medicine, Dundee, UK)*

Background: There has been an increasing interest in graduate entry medicine programmes. It is important to discover if there are any differences in learning preferences between graduate medical students and students entering medicine directly from school.

Summary of work: Learning preferences of graduate and non-graduate Year 1 medical students were studied in the context of a problem-based learning (PBL) programme, involving the use of interactive learning resources. Students completed a questionnaire with 5-point (from strongly disagree to strongly agree) Likert-type items.

Summary of results: 160 responses were received from a possible 166 Year 1 students at Dundee Medical School. Of these 77.5% were school leavers and 22.5% were graduates. 88% thought the PBL programme provided opportunities to apply basic principles to patient scenarios. Graduates placed more value on PBL sessions which incorporated interactive learning resources (e.g. illustration boards, pictures, animations, videos, anatomical models). Graduates found such sessions more useful in helping them integrate biomedical principles (4.0 versus 3.5, $P < 0.01$) and principles of anatomy (4.1 versus 3.8, $P < 0.05$) into the context of patient scenarios.

Conclusions: Graduates valued, more than non-graduates, sessions during which interactive learning resources were used.

Take-home messages: Learning preferences should be taken into account in curriculum planning and instructional material design to maximise learning potential.

11J3

An investigation into the professional behaviours of medical students on graduate-entry vs. non-graduate-entry courses in the UK
Laura Wark and Helen O'Sullivan (CEDP, School of Medical Education, University of Liverpool, UK)*

Background: Medical professionalism is an important component of undergraduate curriculae.
Hilton and Slotnick (2005) describe professionalism as "an acquired state, rather than a trait…that takes a number of years to attain". It is proposed that graduate-entrants to medical school poses different levels of moral and psychosocial development than school-leaving-entrants, which may be evident in their professional behaviours. This investigation will explore the professional behaviours of graduate and non-graduate entry medical students in both first and final years of study.

Summary of work: A multi-institutional study running in four UK medical schools with recruitment ongoing (currently n=500). The study is a comparison-between-group design, based upon a validated and piloted questionnaire. Quantitative questions examine a variety of professional behaviours, encompassing themes of ethical/moral values, behaviours, relationships, technical/scientific skills, personal attributes and responsibilities.

Summary of results: Preliminary results suggest differences between groups. The presentation will discuss significant findings in detail. Independent samples t-tests will identify significant differences between graduate vs non-graduate participants within and between year groups, with consideration of further variables e.g. degree type.

Conclusions: This research will discuss the differences and similarities between the professional behaviours of graduate-entry and non-graduate entry students.

Take-home messages: Differences in the development of professionalism in graduate and non-graduate entry students.

11J4

Predicting progress and attainment in a graduate-entry medicine programme

Paul Garrud* and Gillian Manning (University of Nottingham, The Medical School, Royal Derby Hospital, Derby, UK)

Background: The GEM (graduate-entry medicine) programme at Nottingham recruits students with degrees in any subject. After 18-months, they merge with students taking the 5-year undergraduate programme for the last 2.5 years. It's important to assess the success of this broad recruitment policy by establishing how success is related to educational background, demographic and selection measures, and comparing attainment between GEM and 5-year programmes.

Summary of work: Attainment of the first five cohorts of GEM students (n=450) and the comparable cohorts of 5-year students (n=500) on summative assessments throughout the course were analysed using multivariate techniques.

Summary of results: Progress and success on the GEM course is strongly related to GAMSAT score, more weakly related to interview grade, prior degree subject and class, and inconsistently with gender, but not age. In comparison with the 5-year programme, completion rates are higher for GEM, but attainment in some later knowledge-based exams is weaker.

Conclusions: The results provide empirical support for the GEM admissions policy: students from non-science backgrounds succeed; selection measures have significant predictive validity; attainment is broadly comparable with the 5-year undergraduate students.

Take-home messages: A broad entry gate and student profile in graduate-entry medicine is both feasible and justified by attainment at each phase of the programme.

11J5

The influence of gender and culture on clinical practice - Perceptions of final year medical undergraduates

J van Wyk[1], K Moodley[1], S S Naidoo[2] and S Higgins-Opitz*[3] (Nelson R Mandela School of Medicine, University of KwaZulu Natal, [1]Department of Medical Education; [2]Department of Family Medicine; [3]Department of Physiology, Faculty of Health Science, Durban, South Africa)

Background: Aligned with provincial demographics, the Nelson R. Mandela School of Medicine adjusted its student admission policy to improve equity and social transformation. Female enrolments have outnumbered males resulting in debates around the impact of feminisation on clinical practice. This study explored whether a diverse student population perceived gender and/or culture as obstacles to future practice.

Summary of work: In 2008, a cross-sectional descriptive study was conducted by means of a semi-structured interview. Eighty two interviews were conducted with final year medical graduates. Excel was used for quantitative data analysis while qualitative data were coded using QSR Nvivo 8 software.

Summary of results: Female and African Blacks accounted for 70% and 65% of the sample, respectively. Most of the participants perceived South African practice as male-dominated. Both genders thought females faced more obstacles to practice. The majority identified fluency in isiZulu as a problem while cultural obstacles included family and peer pressures and social stigmas.

Conclusions: Female graduates fear that cultural values and attitudes of senior staff and patients would greatly impact on their clinical practice and interactions. These factors may influence future decisions towards public practice and choice of residency.

Take-home messages: Social redress policies should be accompanied by patient and staff education in the teaching and clinical environment to improve effective policy implementation.

11J6

Entry requirements as predictors of future performance in an Undergraduate Medical Course

P Cacciottolo[1], J Vassallo[2], N Calleja[3] and J Cacciottolo[2] (University of Malta, [1]Faculty of Medicine and Surgery; [2]Department of Medicine; [3]Department of Public Health, Malta)*

Background: The University of Malta undergraduate course in medicine accepts A-level results as sole criteria for admission. Debate to increase course input suggests lowering requirements to admit greater numbers. We propose to compare performance on admission to performance throughout the course.

Summary of work: Examination results of 94.1% (n=384) of students qualifying between 2001 and 2008 were analysed, excluding students admitted with foreign examination board results for ease of comparability. Entry requirement exam results were compared to non-clinical and clinical finals results. Possession of a previous degree was taken into account. Grades were converted to integers and analysed using SPSS.

Summary of results: Entry qualifications correlated well with both non-clinical ($p<0.001$) and clinical ($p<0.001$) exam results. Both Biology and Chemistry A-level results positively correlated, with Chemistry being a stronger predictor (Pearson Correlation = 0.25 vs. 0.23) of future performance. Holding a previous degree did not predict future performance ($p=0.440$).

Conclusions: Performance at admission is positively correlated with future performance throughout the undergraduate course. We postulate that lowered entry requirements may lead to course candidates who perform at a poorer level in course exams.

Take-home messages: Alterations to entry requirements should not be driven by logistical exigencies, but should be instituted following careful assessment, to ensure maintained quality and not quantity of graduates.

11K   Short Communications: The Student as Author of Teaching Resources

11K1

Students as primary virtual patient case authors: The University of British Columbia model

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Background: Virtual patient (VP) cases are rich, multi-layered, self-directed and dynamic teaching resources. They standardize and address disparities in educational experiences, and support schools with distributed multi-campus programs. VP case authoring can be challenging for educators. Faculty with content expertise lack time, proficiency with authoring applications, and familiarity with the development process.

Summary of work: A team consisting of faculty, fellows and residents as content experts; instructional designers and technical experts; and first and second year medical students as primary authors, was constituted to develop each VP case.

Summary of results: Over 3 years, during a summer program, 30 students, supported by residents and faculty, created 80 VP cases in urology and paediatric surgery for a first-year curriculum in a geographically distributed program. Assigned clinical presentations based on scripts addressed: (a) presenting complaint, (b) patient history, physical exam, and differential diagnosis and treatment options. Cases included pre and post case quizzes, patient narrative, radiology imagery, hyperlinks, videos and expert commentary. Each case required approximately 100 student hours to create.

Conclusions: A collaborative approach utilizing students as primary case authors is a time and cost-efficient way to support peer-reviewed VP case development.

Take-home messages: Faculty interested in VP case authoring should explore different approaches to the process and utilize all available resources.

11K2

Video-based online tutorial developed from the students' insider perspective – A Students' Project at Heidelberg Medical School

H Hudalla[1], J Lübbert*[1], R Pjontek*[1], P Riedmaier*[1], F Scheibe*[1] and M Kadmon[2] (University of Heidelberg [1]Faculty of Medicine; [2]Department of General, Visceral and Transplantation Surgery, Heidelberg, Germany)*

Background: Imparting complex skills and examination techniques benefits from audiovisual teaching aids including videos for good illustration. Five medical students developed an online tutorial including checklists

and videos. The students focused on skill training from the greenhorn/insider perspective and anticipated possible difficulties in achievement of new skills. The correct medical standard of the tutorial was assured through cooperation with experts from the various surgical disciplines. Some films were given a humorous spirit.

Summary of work: 424 medical students evaluated the tutorial for its content and relevance for preparation of an OSCE (Objective Structured Clinical Evaluation) in a study based on a Likert scaled questionnaire and free comments.

Summary of results: 247 students had used the tutorial for OSCE preparation, and 57,2% found it very helpful. 67,2% ranked films with humorous spirit as very good. Free text comments expressed mainly high acceptance, though with technical difficulties.

Conclusions: We found a wide acceptance and positive response to our video-based online tutorial. The influence of this complementary learning tool on student's performance in the OSCE will be subject of future studies.

Take-home messages: We consider the video-based skills online tutorial developed from the students' perspective a useful learning tool for fostering the internalisation of medical skills and for OSCE preparation.

11K3
Multiple choice question writing by students is useful for formative assessment
R Towers*, C Ditchfield, M A Flynn and J Burke (Medical Education Unit, University of Glasgow, UK)

Background: Multiple-choice questions (MCQs) are reliable, objective and cost effective means of assessment. They can assess higher order cognitive skills if constructed well and are useful for formative assessment in medical education. As part of a Year 2 student selected component (SSC) at Glasgow University, 4 students constructed MCQs using guidelines from the literature, based on knowledge of the curriculum.

Summary of work: We aimed to investigate the effectiveness of using these MCQs for formative assessment using peer group volunteers. Using rules from the literature, the four students formulated individual questions. Following review, 34 MCQs were selected. The year group was then invited to answer these questions.

Summary of results: A total of 59 students out of 236 sat the test on one of two consecutive days. No significant difference was found between results obtained from each day, topic or tester. Analysis of the results showed the MCQs were well constructed and feedback from evaluation suggested students found them useful for formative feedback.

Conclusions: Formulating and completing MCQs for formative assessment is a useful revision tool for students. This study supports MCQs for formative assessments in medical education, allowing consolidation of students' knowledge.

Take-home messages: Involving students in the development and implementation of MCQs is a useful formative assessment exercise.

11K4
Leaving a legacy: Supporting student innovations to enhance engagement
C Elam*, M Swadley, J Romond, E Erlandson, J Thomas and A Papoy (University of Kentucky College of Medicine, Lexington, KY, USA)

Background: Student satisfaction with their education can be enhanced by engagement that expands opportunities to shape their academic, interpersonal, and extracurricular experiences.

Summary of work: Medical students were offered the opportunity to work with a medical school administrator over the summer on self-identified projects that they thought would improve outreach and recruitment, and enhance the educational environment. Project proposals were solicited, with those judged to be soundly planned and likely to be completed during the work-study period accepted.

 Summary of results: Recent exemplar projects that have been designed and implemented include: Lexfinder: a Google-based system of maps and photographs of favorite medical student locales in our city; Leadership Legacy: an interprofessional course promoting team-building, collaboration, vision, communication, and problem-solving; Ambassadors: an outreach program targeting school-aged children from medically underserved communities; and Rural Medicine Lectureship: a series on rural medical careers. Data from the different project evaluations will be presented to demonstrate outcomes.

Conclusions: Medical students were pleased to be offered the opportunity to work with and be mentored by an administrator, and leave a program in place that could be continued as a legacy of their engagement in and contributions to the school.

Take-home messages: Medical student engagement in mentored program development can enrich an institution and leave a legacy.

11K5
Creating an online peer-reviewed medical student journal: barriers and opportunities
D Robinson*, M Moneypenny and H O'Sullivan (University of Liverpool, School of Medical Education, Liverpool, UK)

Background: In "Tomorrow's Doctors" the General Medical Council (GMC) recognises the role of the doctor as a scholar and a scientist. The GMC expects the graduate to be able to: appreciate the ethical issues surrounding research, critically appraise the literature, and design studies to answer relevant research questions. In order to assist in achieving these outcomes we created an online peer-reviewed medical student journal.

Summary of work: We created a management structure including an editor-in-chief and an editorial board. We interviewed for two student editor posts and selected an additional four associate editors and 20 student reviewers, based on their ability to write a short article on reviewing. Lastly we recruited a student webmaster.

Summary of results: Obstacles overcome included defining the roles and responsibilities of the medical undergraduates and ensuring the reliability and security of the site. The Liverpool Student Medical Journal (LSMJ) is now live and accessible at www.lsmj.org. The first edition will be available in June.

Conclusions: Although the creation of an online peer-reviewed medical student journal is a demanding process, the rewards in terms of increasing student participation in publishing, reviewing and submitting articles is worth the effort.

Take-home messages: A peer-reviewed online student medical journal is a useful addition to any medical school.

11L   Workshop: Dealing with more difficult doctors in difficulty
Alistair Thomson* and Peter Harrison* (National Association of Clinical Tutors UK (NACT UK), Milton Keynes, United Kingdom)

Background: NACT UK represents Directors of Medical Education (DMEs) who coordinate Postgraduate Medical Education in UK hospitals. Previous workshops have explored the role educational supervisors have in managing trainees in difficulty. With improving supervision and assessment a wider and more complex range of difficulties are being identified. This workshop will explore these more difficult scenarios and identify strategies for management and remediation.

Intended outcomes: Issues of professional competence are often the most common presenting feature, but may indicate more serious problems. These may involve issues for the employer and the regulator. They require a systematic and multidisciplinary approach and require DMEs to have the knowledge and skills to lead the management of the process and facilitate a successful outcome.

Structure: After a brief introduction, delegates will have the opportunity to explore the scenarios in small groups and present strategies for discussion in a plenary feedback session.

Who should attend: All clinical and educational supervisors with responsibility for trainees and those with a role (or considering a role) as DMEs.

Level of workshop: Intermediate.

11M   Workshop: Organising Open Educational Resources (OOER): the UK Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine (MEDEV)
Suzanne Hardy*, Megan Quentin-Baxter* and Lindsay Wood (Newcastle University, Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine, UK)

Background: A Subject Strand project led by MEDEV was awarded to a consortium of 18 UK Higher Education Institutions (HEIs) as part of a one-year £5M OER pilot programme, funded by the Higher Education Funding Council for England and administered by the Joint Information Systems Committee and the Higher Education Academy.

Intended outcomes: This non-technical workshop will explore policies, challenges, barriers and solutions to releasing teaching materials as Open Educational Resources (OER) on the Internet. These include copyright and IPR, patient consent, institutional policy, quality and pedagogy status, and resource discovery and re-use. You will explore and evaluate the practical interactive toolkits, in relation to your own situation, contribute advice and expertise to enhance these free tools, and become part of a community interested in releasing teaching materials as OER in an international discipline specific context. You will receive these toolkits, plus a pack of teaching resources, contributed by consortium partners which can be freely used in your own teaching.

Structure: After introducing the context, small group work will explore key issues, plus short toolkit presentations, discussion, sharing of good practice and networking.

Who should attend: Academic, clinical and support staff interested in releasing teaching materials as OER.

Level of workshop: Beginner.

11N   Workshop: How to plan and run effective workshops
C Savage and Salmaan Sana* (Medical Management Centre, Institutet for Learning, Informatics, Management and Ethics, Karolinska Institutet, Stockholm, Sweden)*

Background: Ever been to one of those workshops where someone talks shop and then throws in a little collaborative work at the end? There are a lot of different forms of workshops and facilitation techniques that can help us avoid this common trap. Many of them can be used not only at conferences, but also in the classroom, such as World Café (and related spin-offs), Open Source Technology, Adaptive Reflection, and Appreciative Inquiry. Welcome to a workshop where you will work hands-on with different types of methods to facilitate successful workshops and learning.

Intended outcomes: After the workshop, you should be able to: 1. Choose a method that suits your and the group's aim. 2. Explain, based on first-hand experience, the principles behind at least three common workshop techniques and how they can be used in different settings. 3. Feel comfortable facilitating a workshop.

Structure: Orientation; Short introduction; Workshop planning; Host your workshop; Wrap-up - Went well/Do differently; Examples of how we've used the techniques.

Who should attend: Anyone who plans to hold a workshop.

Level of workshop: Beginner.

11O   Workshop: Portfolios in medical education: Design decisions for competency-based training
J R Frank and L Snell (The Royal College of Physicians and Surgeons of Canada, Ottawa, Ontario, Canada)

Background: This session is designed for academic teachers, program designers and anyone interested in physician competence. Portfolios are increasingly popular in clinical education around the world, but they are not useful for every program. This session will guide beginners in developing and using portfolios in medical education, with a special focus on competency-based education using the CanMEDS framework.

Intended outcomes: By the end of this session, participants will be able to: 1. Define portfolios as they are used in medicine; 2. Describe the steps in designing a portfolio in medicine; 3. Describe how portfolios could be used to assess the CanMEDS competencies; 4. begin to design a portfolio to use in a medical education program.

Structure: This 1.5 hour workshop is a practical, interactive session which will involve several discussions and exercises. Principles of portfolio design will be introduced using a step-by-step model. Each participant will then work through a formula for developing their own portfolio.

Who should attend: Medical educators with an interest in competence assessment and competency-based education Clinician Teachers Program Directors Directors of Education Associate Deans of Education Department Chairs.

Level of workshop: Beginner.

11R   Workshop: The patient voice as a means to improve validity and reliability in clinical assessment

A McGoverin, R Fuller*, M Homer, R Lane, P Morris*, G Pell* and J Symons (University of Leeds, Leeds Institute of Medical Education, Leeds, UK)*

Background: In the quest for increased levels of validity, the input of patients, carers and communities to assessment and feedback in professional learning is desirable. Given changing roles and responsibilities for patient and clinician alike, the development of high validity together with reliable methods of formative and summative assessment is imperative. We have been working with diverse groups of patients and carers, building their and our own capacity, to ensure an authentic patient perspective and voice in assessment. We expanded their role in the final year medical student OSCE towards true co-production of stations and developed, with them, cross-professional competencies for the assessment of work-based learning of students and practitioners.

Intended outcomes: Participants will be supported to review their own practice or possibilities for working with the patient voice, while recognising the challenges they face.

Structure: We will share the effects of this engagement and our understanding of the processes needed to ensure success: the protocols of working together, reinforced by mixed media support materials; illustrate the learning identified through our action research of these processes, including the 'patient learning journey', as well as the evidence for improved reliability of OSCE stations; underpin the theory through interactive, modelling exercises and reflection.

Who should attend: Developers of assessment.

Level of workshop: Intermediate.

11S   Workshop: Using action research to improve practice in medical education

T Bindal[1], D Wall*[2] and H Goodyear*[2] ([1]Alexandra Hospital, Department of Paediatrics, Worcestershire; [2]West Midlands Deanery, Birmingham, UK)*

Background: Action research is a well established methodology where action (implementing changes) and research (process of enquiry for problem understanding) can be achieved simultaneously in order to improve practice. Its unique feature is that participants of a study are turned into the co-researchers through communities of enquiry who are engaged in working with the principal researcher. In medical education, Action research is used to close the theory-practice gap. Examples include curriculum change, improving training programmes, teaching of professionalism and addressing the needs of clinical teachers. This workshop is designed to increase knowledge of action research as a qualitative research tool.

Intended outcomes: This workshop will provide 1) understanding of the basic principles of action research, 2) help participants know how to design an action research project and 3) give useful hints and tips on avoiding pitfalls in conducting action research.

Structure: After an introduction to action research methodology, participants will work in small groups putting methodology in practice for given topics. This will be followed by plenary discussion including hints and tips to improve research.

Who should attend: This workshop is designed for both clinicians and researchers interested in qualitative research as a means of improving practice.

Level of workshop: Beginner.

11U   Posters: Student Challenges and Student Support

11U1

Impact of remedial courses on the percentage of students who pass the final exam of basic-medicine subjects

A Dominguez-Gonzalez R Rioboo Talayero, J M Rioboo Martin and EI Miranda Peralta* (Westhill University, Mexico City, Mexico)*

Background: The complexity of subjects during the first two years of Medical School, together with the great amount of information, low self-esteem, stress and lack of study methodology causes poor performance and subsequent dropout of students.

Summary of work: We decided to search if remedial courses improve student performance at the final exams of Basic-Medicine Subjects: Development Biology, Biochemistry, Pharmacology, Physiology, Immunology, and Microbiology. The strategies adopted included the identification of underachieving students and reinforcement of their academic knowledge by remedial courses given the previous ten Saturdays prior to final exams. To assess the relationship between the remedial courses and the increase in the number of students that successfully approve the final exams, we statistically analyzed (chi-square) the data of two scholar cycles prior and after to remedial courses.

Summary of results: Remedial courses were successful for Biochemistry (an increase of 14.8%, $p<0.005$), Pharmacology (23%, $p<0.001$), Physiology (21.5%, $p<0.001$) and Microbiology (32.8%, $p<0.001$). Developmental Biology and Immunology did not show a statistically significant increase in student performance.

Conclusions: Results obtained during this investigation suggest that remedial courses are effective in those subjects with high rates of student failure.

Take-home messages: The remedial courses before the final exam are a good strategy to rescue students in difficulty.

11U2

Cleanliness Champions: Is failure to meet deadlines associated with other indicators of academic and professional behaviours?

W Dhaliwal* and A J Gavine* (University of St Andrews, Bute Medical School, St Andrews, UK)

Background: The Cleanliness Champions (CC) programme in infection control is introduced to students in their initial year of study as a compulsory component. Units of the programme are integrated into our curriculum. Deadlines for work submission are defined, and timeliness recorded. We analysed whether the incidence of students who fail to meet deadlines for CC correlates with poor academic performance and other determinants of professional behaviour. We assessed whether intervention by interviewing students failing to meet deadlines is effective in improving student performance.

Summary of work: Students who failed to submit work by CC deadlines were invited for interview(s) to explain reason(s). We correlated the number of deadlines missed with data defining other markers of performance: examination results and recorded instances of unprofessional behaviour. We assessed whether interview affected future performance.

Summary of results: We will present data showing correlation between students' failure to meet deadlines and their academic and professional performances.

Conclusions: The act of intervention, by interviewing students to emphasise the importance of deadlines and to warn against future indiscretions, may be beneficial in improving future compliance and improved performance.

Take-home messages: Implementation of disciplinary interviews may be a valid way of instilling professional values in students thus improving subsequent levels of academic and professional performance.

11U3

Plagiarism and how to avoid it - A study exploring the perceptions of staff and students

S Jeyarajah* and M J Carrier (Institute of Health Sciences Education, Barts and the London School of Medicine and Dentistry, London, UK)

Background: With increasing access to IT, the Internet and other electronic sources of information has come a concomitant increase in the levels of plagiarism. Alongside this, we have seen increasingly more sophisticated methods to detect plagiarism. Despite the efforts of higher education institutions to inform students about plagiarism, many still lack an understanding of it. The aim of this study is to explore staff and students' perceptions and understanding of, 1) what constitutes plagiarism, 2) how to avoid it, and 3 crucially, why it is important to avoid it.

Summary of work: Questionnaires and focus groups explore the perceptions and understanding of students and staff. Our research will help to develop a simple set of practical tools designed to enable students to recognise and understand plagiarism and avoid it.

Summary of results: Our data addresses the key issues surrounding the student perspective of plagiarism, these include what it is, and the institutional support provided to help them avoid it.

Conclusions/Take-home messages: Students appear not to be fully aware of the negative impact that plagiarism can have on learning and professional practice. We anticipate the toolkit we develop as a result of our findings will help to provide the skills needed to avoid plagiarism.

11U4

Changes in the values of medical students of the Universidad Andrés Bello Viña del Mar Chile, before and after the earthquake of February 27, 2010

Peter C McColl* and Dunny Casanova (Escuela de Medicina Universidad Andrés Bello Sede Viña del Mar, Chile)

Background: The objective of this study was to describe the changes in the values of first year medical students of the Universidad Andrés Bello Sede Viña del Mar before and after the earthquake of February 27, 2010, by gender and religious intensity.

Summary of work: A cross sectional study was performed. 45 students answered Schwartz Value Inventory (scale -1 to 7), the religious intensity was measured with the Valenzuela questionnaire (scale: 0 to 13 maximum). The statistics analysis was done with tests of paired data. Study group: 19 men and 26 female, mean age 19 years old.

Summary of results: The values that changed were: Universalism (4,88 to 4,98, $p < 0,015$), Conformity (4,89 to 4,98, $p < 0,012$) and Security (4,42 to 4,56, $p < 0,001$). Power, Achievement, Hedonism, Stimulation, Self Direction, Benevolence and Tradition, did not present significant changes. Females changes: Universalism (4,69 to 4,54, $p < 0,009$), Conformity (4,79 to 4,91, $p < 0,016$) and Security (4,35 to 4,50, $p < 0,006$). Males: Security (4,51 to 4,65, $p < 0,05$). Religious intensity score: low, Conformity (4,67 to 4,84, $p < 0,02$), Security (4,12 to 4,22, $p < 0,04$), medium score: Security (4,30 to 4,55, $p < 0,02$), high score: no changes.

Conclusions/Take-home messages: The earthquake of February 2010, produced changes in the values of medical students, (Universalism, Conformity and Security). These changes include 3 of 10 Schwartz values inventory in females and 1 of 10 in males. No changes were observed in the group with high religious intensity. Gender and religious intensity are important variables in the changes of values.

11U5

Stress and coping among Arab medical students: The need for a research agenda

Margaret A Elzubeir*, Khalifa Elzubeir and Mohi Eldin Magzoub* (King Saud bin Abdulaziz University for Health Sciences, College of Medicine, Riyadh, Saudi Arabia)

Background: Research conducted in the past ten years in the area of stress and coping among Arab medical students has identified some important issues. However, some significant aspects have not yet been explored.

Summary of work: We conducted a systematic review of studies reporting on stress, anxiety and coping among Arab medical students and identified implications for future research. Demographic information on respondents, instruments used, prevalence data and statistically significant associations were abstracted from English language sources published between 1998 and 2009.

Summary of results: Eight articles were identified meeting the authors' specified inclusion criteria. Studies indicate students have a high prevalence of perceived stress, depression and anxiety among a limited range of Arab medical students, with levels of perceived psychological stress as high as those reported in the international literature. Limited data were available regarding coping strategies, the impact of stress on academic performance and attrition. No data were available regarding the impact of problem-based learning on stress and coping.

Conclusions: The existing literature identified indicates stress, depression and anxiety are as common among Arab medical students, as for students elsewhere. Little is known about the contribution of different curricula approaches to perceived stress and what coping strategies institutions and students apply to help alleviate stress.

Take-home messages: Large, prospective, multicenter, multi-method studies are needed to identify personal and curricula features that influence stress, depression, anxiety and coping strategies among medical students in this socio-cultural context.

11U6

Undergraduate preclinical and bedside performances are related? A logit model

E Gonçalves*, M Portela and M J Costa (Life and Health Sciences Research Institute, School of Health Sciences, University of Minho, Braga, Portugal)

Background: Prediction of clinical performance based on pre-clinical assessments is commonly feasible in medical schools. We tested the effect of different types of assessment scores and sub-scores in predicting poor clerkship performances.

Summary of work: This study analyzes the clerkship scores of Professionalism and Clinical Competence and looks for associations with sub-scores and aggregate scores in the most extensive preclinical course: "Biopathology and Introduction to Therapeutics" (42 ECTS). Student sex, age and GPA at entrance were also used. A logit binary choice model was used in the quest for predictors.

Summary of results: Lower probabilities of being a "problematic student" are associated with being a female student and obtaining higher preclinical attitudinal scores. The remaining independent variables did not exhibit statistical significance.

Conclusions/Take-home messages: The attitudinal sub-scores of the pre-clinical course were predictors of student clerkship professionalism and clinical competence. "Attitude" sub-scores result from weighing faculty evaluations of student attitudes in multiple encounters with a global rating form. The method should be applicable in other schools as long as a crucial course (or aggregate scores of several key courses) in the early years are identified. Finally, the study provides evidence that GPA at entrance is very weak in predicting professionalism and clinical competence.

11U7

Starting a family during medical education: Results of a pilot study at the University of Ulm

H Liebhardt*[1], K Stolz[1], K Mörtl[3], K Prospero[2], J Niehues[2] and J M Fegert[1,2] ([1]Ulm University, Dean's Office of Medical Faculty; [2]Clinic for Child and Adolescent Psychiatry, Ulm, Germany; [3]York University, Psychology Department, Toronto, Canada)

Background: Work-life-balance is one of the most important issues of modern life. The international comparison shows the time for starting a family depends on regional understandings of family and the financing authority of education: parents or state.

Summary of work: The results constitute the foundation for an evidence-based medical curriculum and a selection of consulting issues for a modern career and family planning. Methods: qualitative problem oriented interviews (37 participants) a paper-pencil questionnaire (98 participants).

Summary of results: The majority of the participants (61%) were convinced that parenthood is more compatible with medical studies than with medical specialist training. The data suggests that the last two years of medical education are especially suitable for child birth since it allows continuing ones course of study without 'losing time' and simplifies later the building of successful career later on.

Conclusions: In most German universities 2/3 of the young doctors are female. Family friendly medical education therefore is an important and yet to be approached topic, providing universities with the challenge to develop new concepts that counteract the increasing childlessness of women in academic career positions.

Take-home messages: Career planning while starting a family should be made possible in medical education considering the benefits of a better work-life-balance in medical professions.

11U8

Building physical environment in dormitory well-being in daily life affects medical students' satisfaction

N Suwanmungkul*, W Aramrussameekul, A Narkwichean, J Sirirattanapan, K Chansiri, K Reimratanakorn and S Wattanasirichaigoon (Srinakharinwirot University (MEDSWU), Nakornnayok, Thailand)

Background: One of the most important factors in students' enjoyment of their studies is living in a dormitory. To fulfill the "Happiness" in one of our 6 H's core competency (Head, Heart, Hand, Health, Happiness and Humanistic), we provided well-equipped technology and also focused on living environments.

Summary of work: Regarding dormitory well-being inquiry, we distributed 200 self-administered questionnaires to medical students. Half of them stayed for 1 year and the remaining for 2 years.

Summary of results: We analyzed 164 questionnaires (82% response rate with 75 males and 89 females). Most were satisfied with the built environment, environmental quality, services and facilities (mean score of

2.49 out of maximum 3). No sex preference was found in all facilities, except wireless provision which was higher in male (p=0.044). Students who stayed longer were higher satisfied with wireless (p=0.001) and television room (p=0.024). Ones who did not have notebooks were not satisfied with wireless and vice versa (p<0.001).

Conclusions: This study found that physical environment affects students' satisfaction and also compromises most of their technology and luxury of living styles.

Take-home messages: Importantly, the more they know the means to live sustainable lives, the more happiness they earn, all in the hopes of providing for a better environment and future.

11U9

Stress in clinical year

C Sujjapongse* and S Phansaksiri (Saraburi Medical Education Center, Saraburi Hospital, Saraburi, Thailand)

Background: The rural medical students studied the first three preclinical years in Thammasat University, in urban environment. The next three clinical years they studied in Saraburi Hospital, in a rural area. They underwent much change and this adaption caused stress.

Summary of work: The crossectional study was done in 4th, 5th, 6th year medical students at Saraburi Hospital. The questionnaire, developed by Department of Mental Health Ministry of Public Health was given to them. The data was analyzed and compared the background of each student.

Summary of results: About 84.6 percents of the student had a mild scale of stress compared to the 13.4 percents student that had moderate stress. The background of the group revealed many different aspects about academic capability and social background.

Conclusions: The ability of the students to cope with change varies from student to student. The factor of good adaptation depends on type of student.

Take-home messages: The early detection of stress and poor adaptation ability can help to plan the appropriate approach for each student, this can help them to succeed in their life.

11U10

Empathy, depression and academic performance

M Maillard*, J Reynaga, G Heinze and M Perez* (National Autonomous University of Mexico, Mexico)

Background: The success of daily medical practice depends greatly on the knowledge, sensitivity and capability of the physician to perceive and comprehend his patients' emotions. It is important to teach medical students to be empathetic, beginning in the first year of medical school. Empathy is a quality that is cultivated since infancy and develops throughout life. The learning process is correlated with a student's empathy and emotional state, as they influence the acquisition and recovery of information from the memory. Recalling a particular emotional state facilitates recalling the information learned while being in that specific mood. The emotional factor is influential to the learning process. Depression can hamper the learning experience.

Summary of work: We explored the empathy levels of 86 first year medical students at UNAM, using Gudykunst's empathy test. We specifically studied the relationship between empathy and academic performance, empathy and depression, and empathy and gender. We also addressed the correlation between depression and scholastic performance, depression and gender.

Summary of results: 60% of the students are empathetic. 17.44% of the students qualify as depressive, 13.3% men and 19.64% women. The incidence of severe depression is 3.33% in men and 8.93% in women.

Conclusions/Take-home messages: Having depression is correlated with a poorer academic performance.

11U11

Mental distress among medical students and university college students: The role of gender

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Background: There is more emotional distress and suicide in physicians than in other academics. Comparisons at an undergraduate level have shown discrepant findings.

Summary of work: In two Norwegian cities (Oslo and Trondheim) medical students (N=531), 61% women, were compared with university college students (e.g. physiotherapy, education, business, engineering, nursing, journalism) (N=1370). Distress was measured by the General Health Questionnaire – 12-item version (GHQ-12). Factors linked to distress were analysed by linear regression.

Summary of results: Response rates were 67% for medical students and 77% for university college students. There were significantly more GHQ-12–cases (cut-off: 3/4) among female medical students (34%) than among female university college students (25%) (p = 0.006), but no such difference was found among men. Adjusted predictors of mental distress in the medical students were higher age (p=0.002), female gender (p<0.001) and living without partner (p=0.044), we found no gender interactions.

Conclusions: Female medical students report more mental distress than other students. Higher age and living without a partner were linked to distress in medical students of both genders.

Take-home messages: 1) One out of three female medical students is considerably emotionally distressed. 2) Female students of higher age and those living alone may be at particular risk.
3) Measures to prevent and counteract such distress should be taken.

11U12

Medical students' identities: Ethnicity, learning and the impact on achievement
S Vaughan[1], T Main[1], J Kerr[1], T Sanders[2] and V Wass[3] ([1]University of Manchester; [2]National Primary Care Centre; [3]School of Medicine, University of Keele, UK)*

Background: Students performing least well academically are more likely to come from an ethnic minority background. This has not been adequately explained.

Summary of work: Using the theoretical framework of Communities of Practice, which places identity as integral to learning, we aimed to investigate how ethnicity impacts on the way students negotiate their identities in practice and the implications for achievement. Qualitative semi-structured interviews were undertaken with 15 4th year medical students. Data were analysed using the constant comparative method.

Summary of results: Three key processes emerged: 1) identity being brought into focus: salient moments in which the emphasis shifts from participation and forces students to renegotiate their identity, 2) identifying and being identified: processes by which students associate themselves with certain identities and how they are labelled by others, 3) negotiation of identity: how social and cultural capital is 'constructed' by individuals.

Conclusions: Medical students have different ways of negotiating their identity that both enable and constrain learning. Ethnicity appears to have a clear impact on these, which may explain differential achievement.

Take-home messages: The identity of ethnic minority medical students may be crucial to understanding why and how these students under perform.

11U13

What's the story with class attendance? Perspectives from first-year health sciences students
S C van Schalkwyk (Stellenbosch University, Centre for Teaching and Learning, Stellenbosch, South Africa)*

Background: The class attendance patterns of undergraduate students are the source of perennial debate in higher education. Much research has focused on this issue and responses from students show a fair amount of congruence across the studies (Friedman et. al. 2001, Webb, Christian and Armitage 2007).

Summary of work: Institutional research in this regard was conducted among first-year students at Stellenbosch University in 2009. Students completed an online survey which explored their perspectives on class attendance. Their responses were analysed in faculty context. This paper shares the findings for the Health Sciences Faculty, highlighting how these compared to those of students in other faculties at the university.

Summary of results: Students rated their class attendance as more regular than any other faculty. Reasons for attending class included the fact that this contributed to their understanding of the work and enhanced their learning. In comparison with other faculties, aspects such as getting 'tips for tests', were less likely to act as motivators.

Conclusions: Students reasons for attending class differ across faculties. These differences appear to be attributable to aspects such as nature of programme and the students' academic standing.

Take-home messages: Facilitating a meaningful learning event encourages good class attendance.

11U14

Personal mentorship for medical students: A space to develop the elusive parts of professional competence

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Background: Previous evaluations at Karolinska Institutet have shown that medical students felt anonymous in the clinical environment and wanted to share experiences with a person from their own profession. In order to meet these needs and facilitate their professional development a mentoring program was set up. All students in four subsequent courses were offered a personal mentor for two years.

Summary of work: Twelve individual student-interviews were analyzed by latent content analysis to get a deeper understanding of the meaning of mentorship for professional development during clinical courses.

Summary of results: The result consists of three themes, Space, Belief in the future and Transition. Having a mentor gave a sense of security and was like a 'free zone' alongside the undergraduate programme. It gave hope about the future and increased the study motivation. The students were introduced to the new community and began to identify themselves as doctors. They became aware of different behaviours and reflected on how they wanted to act as doctors themselves.

Conclusions: Mentorship during clinical courses can facilitate medical students´ development of necessary dimensions of professional competence, dimensions which are elusive and difficult to point out and to integrate in an educational program.

Take-home messages: Mentorship can facilitate development of the elusive parts of professional competence.

11U15

How to easily find a suitable mentor: Matchmaking online

P von der Borch*[1,2], S Störmann[1], K Dimitriadis[1,3], F Meinel[1], M Reincke[2] and M R Fischer[4] ([1]Mentoring Office; [2]Department of Medicine; [3]Department of Neurology, Munich University Hospital, Ludwig-Maximilians-University, Munich; [4]University of Witten-Herdecke, Germany)

Background: One-to-one mentoring relies to a great extent on the quality and durability of its mentor-mentee-relationships. Thus, finding a suitable mentor plays a key role in the success of any mentoring programme. However, classical matching is not feasible at faculties with many mentors and mentees.

Summary of work: We developed a match-making algorithm to automate the matching process. Mentors and mentees complete online matching profiles, which are numerically matched and weighed according to criteria like medical specialty. Mentees can then choose among ten proposed mentors. Each semester we evaluate the resulting mentoring relationships.

Summary of results: 70.5% of mentees considered their proposed mentors a suitable match. Mentees found profile criteria such as medical specialty (89.1%) and free text (90.0%) important in their choice of mentor. Prior acquaintance with the mentor only mattered to 12.5% of the mentees. Two years into the programme, 88.8% of mentees kept their mentors and 87.0% of mentors found their mentees to be good matches.

Conclusions: We have developed a feasible method to match large numbers of mentors and mentees through online-based profiles. Both mentors and mentees were satisfied with the selection of their partners.

Take-home messages: Online matchmaking is an affordable method to facilitate sustainable mentoring relationships at faculties with many mentors and mentees.

11U16

Formal mentoring programs for medical students in Germany – a cross-sectional study

F G Meinel[1], K Dimitriadis[1,2], P von der Borch[1,3], S Störmann[1], S Niedermaier*[1] and M R Fischer ([1]Mentoring Office; [2]Department of Neurology; [3]Department of Medicine, Munich University Hospital, Ludwig-Maximilians-University, Munich, Germany)

Background: Mentoring is increasingly recognised as a key factor contributing to career success in medicine. However, little is known about the prevalence of mentoring for medical students in Germany.

Summary of work: This study assesses the availability and profiles of mentoring programmes for medical students in Germany.

Summary of results: We found that 20 out of 36 medical faculties in Germany offer 22 formal mentoring programmes with a mean of 125 and a total of 5843 medical students (7.4% of all medical students in

Germany) involved as mentees. These programmes have been running for an average of three years, the oldest one existing for 14 years. 14 out of 22 programmes have been established within the last two years. Six out of 22 programmes (27%) offer mentoring in a one-to-one setting. Most programmes 17 programmes, 77%) feature faculty physicians as mentors, nine programmes (41%) involve students as mentors (peer-mentoring).

Conclusions: Most of the mentoring programmes at German medical schools have emerged within the last two years. Their definition of aims is very heterogenous. We have analyzed the status quo of the different mentoring programmes and discuss recent developments as well as basic guidelines for mentoring programmes.

Take-home messages: Mentoring is a key factor for successful careers 22 of 36 medical faculties in Germany offer mentoring. 14 of 22 have developed in the past two years.

11U17
Medical student views on paper handouts and the on-line learning support environment
S Sadasivam* and N Kumar (University Hospital of North Durham, County Durham and Darlington NHS Foundation Trust, Education Centre, Durham, UK)

Background: Providing handouts for a short "Foundations of Clinical Practice" course for third year Newcastle University medical students costs approximately £1,500 and uses around 67,200 sheets of paper. The student learning support environment (LSE) is a web-based service which has the facility for teachers to upload lectures for student access which could avoid paper use.

Summary of work: A questionnaire was distributed to 79 medical students rotating through the hospital to assess views of paper handouts and the LSE.

Summary of results: 68% felt that lecture notes on the LSE were an acceptable alternative to paper handouts. All students had a broadband internet connection at their term time address. 89% of students use the LSE at least once a week. However, there were many free text comments on the difficulty of using the LSE and 38% of students rated the LSE difficult to use or "gave up using".

Conclusions: The free text comments about the LSE have been fed back to the university to facilitate LSE improvement. With improvement, it may be feasible to upload presentations onto the LSE and offer printouts only to those who request them. However, lecturers may be worried about others copying or scrutinising their work and a separate research questionnaire has been designed to survey lecturers in the near future.

Take-home messages: Save paper. Save money. Maybe students don't need paper handouts!

11U18
Poor performance of medicine students, lack of cognitive strategies and previous knowledge
M E Ponce de León*, M Varela and L Diaz (Universidad Nacional Autónoma de México, México)

Background: The deficiency of cognitive strategies and previous knowledge of some students entering medicine school can cause a low performance in the early years of their training.

Summary of work: Application of 406 questionnaires during workshops with medical degree professors, the purpose of knowing their opinion. One of the variables analyzed was the lack of previous knowledge required by students upon entrance, made it harder to learn the subject.

Summary of results: Professor's opinion of the first three years: 78% found lack of learning strategies and previous knowledge in students of first three years, which prevented them from having a significant learning ability. Professors from first, second and third years, 29%, 22% and 10% respectively expressed the lack of previous knowledge in biology, chemistry, statistics, and grammar, 37%, 30% and 14% and deficiency of study strategies and cognitive skills, such as analytical capacity, ability to research for information: reading comprehension and general culture.   50% of the fourth year professors mentioned lack of interest in ethics and humanitarian matters, and 43% of third year professors mentioned that they have forgotten: anatomy, biochemistry, histology, immunology and physiology, knowledge acquired during the first two years of medical education.

Conclusions: It is essential to develop strategies to solve students' deficiencies and avoid future poor performance.

Take-home messages: It is essential to take into consideration these aspects that diminish good performance of the students, and offer them alternatives and solutions.

11V   Posters: Curriculum Evaluation

11V1
Undergraduate skills in ENT: Give us more!
E J R Hill and S Al-Himdani (The University of Manchester, UK)*

Background: Undergraduate skills in ENT are a compulsory part of the curriculum in over 75% of UK medical schools. Average length of exposure to ENT at undergraduate level is 8 days. An intensive ENT skills day was organised to provide students with focussed exposure to relevant skills.
Summary of work: An idiosyncratic questionnaire was administered to 90 medical students in attendance at an ENT study day. Questions assessed students' motivations for attendance at the course and the best and worst aspects of the day. An open question asked students to offer advice to a fictitious medical school about planning ENT in a curriculum.
Summary of results: Students indicated the study day was an important learning resource for ENT skills. Some students reported that it was their only exposure to the specialty. Skills workshops were the best feature of the day for over 70% of attendees. Students would advise medical schools to provide more opportunities for exposure to ENT.
Conclusions: The ENT study day was popular with students who valued the focussed exposure to skills training in the specialty.
Take-home messages: Focussed study days may warrant further investigation as a method to provide undergraduate skills teaching in ENT.

11V2
Evaluation and quality improvement of obstetric skills training at patient level - using routinely collected data
Susanne Schiang[1], Charlotte Holm[2], Jens Langhoff-Roos[2], Astrid Nørgaard[3], Birgitte Rode Diness[4] and Jette Led Sørensen[2] ([1]Dept Anaesthesiology; [2]Dept Obstetrics; [3]Section for Transfusion Medicine, Capital Region Blood Bank; [4]Dept Clinical Genetics, Rigshospitalet, Copenhagen University Hospital, Denmark)*

Background: Evaluation of medical education is a methodological challenge. One outcome parameter at patient level can be the reduction of severe postpartum haemorrhage (PPH), requiring blood transfusion.
Summary of work: A register based study was followed by audit of records before (2003), during (2005), and after (2007) the introduction of training in management of postpartum bleeding. By linkage of local transfusion database and the Danish Medical Birth Registry 171 cases of postpartum transfusion were identified for audit in a total of 10,907 deliveries.
Summary of results: In 2003 the transfusion rate was 1.8%, in 2005 1.7%, and in 2007 1.3% (p=0.09). The number of transfusions, volume of bleeding, pre- and post transfusion haemoglobin values, time lag (30 minutes) from a decision to perform operative intervention and the causes of PPH did not change over time.
Conclusions: There was a non-statistical decrease in the transfusion rate after training, but it was still higher than in other countries. The audit indicated a need for a change to a more proactive postpartum management, appropriate transfusion policy, and improved collaboration with anaesthesiology staff.
Take-home messages: A combination of register-based information and audit of records before, during and after training is needed to evaluate the effect at patient level and to improve training.

11V3
Combination of data for quality assurance and accountability
A P Salgueira, E Magalhães, E Gonçalves, CP Brito, M Portela and M J Costa (Medical Education, Life and Health Sciences Research Institute, School of Health Sciences, University of Minho, Braga, Portugal)*

Background: Quality assurance data is essential for the accountability mandate of medical schools. We report data originating from a combination of testing students with a valid and reliable examination (A) and survey results of recent graduates (B).
Summary of work: (A) We assessed our 1st graduates' knowledge competency with an external examination with standards set by an international faculty – the "International Foundations of Medicine". (B) All alumni (3 entering classes, n=127, 89% response rate) were surveyed on "Global satisfactions" (see categories below) of their undergraduate education.

Summary of results: The combination of approaches generated a wide range of concurrent data. Some highlights are (A) All students met the standard of competence. (B) Students were "satisfied" or "very satisfied" the curriculum (globally and with each individual year, faculty, the teaching and learning approaches, least appreciated were adaptation to medical school, training of interprofessional skills and specific disciplines like nutrition and health economics. Further results will be presented.

Conclusions/Take-home messages: The two types of data were complementary, giving important feedback and contributing to the accountability of our medical school.

11V4
How to create a medical students survey with the aim to address educational shortcomings with empirical data
Maria Ehlin Kolk* and Martin Holmbom* (Swedish Medical Student's Association, Stockholm, Sweden)

Background: The Swedish Medical Students' Association (SMSA) is the largest voluntary organization for medical students in Sweden. When addressing issues regarding the quality of education, we work extensively with producing statistics. SMSA has for several years conducted a survey at the late semesters of the medical education. This survey is the only independent evaluation that allows direct comparisons between the Swedish medical schools. During 2009 SMSA has worked with producing a similar survey concerning the earlier semesters.

Summary of work: Initially the local divisions of SMSA at each medical faculty were asked their opinion regarding what kind of questions those were to be included in a future survey. This resulted in a draft and after feedback the final version was sent out on trial to student groups at each medical faculty. The aim of this first round was to find possible teething troubles but also resulted in significant statistics.

Conclusions: For a student organization to be an important part in the debate regarding medical education, being able to show statistics on the students' opinion is a valuable tool.

Take-home messages: It is not an insurmountable task to create a good survey to measure medical students' opinions and the profits of being able to show statistics are numerous.

11V5
Students' opinions at the end of the internship regarding their undergraduate education
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Background: Medical curriculum takes 6-years, which starts with two years of basic sciences followed by four years of clinical courses. In the sixth year, students carry out the mandatory social service in rural zones of the country. Research has shown students have a wide range of opinions regarding how well prepared they are.

Summary of work: The study aims to determine fifth-year medical student's perception about their undergraduate education at the end of the internship. Method: participants were a total of 1,424: they were 797 from class 2001-2005, 503 women and 294 men. From class 2002-2006 were 327 students, 203 women and 124 men. From class 2003-2007 were 300 students, 192 women and 108 men. Instrument: a 68-multiple-choice questions survey was administered to explore their perception about three main categories of analysis: a) learning, b) teachers, and c) learning environment.

Summary of results: Statistic analysis: reliability was determined with Cronbach alpha coefficient. ANOVA showed differences among the analysis categories and gender, mainly in class 2001-2005.

Conclusions: Results can be used to improve fundamental areas of the students' training programs and teachers' continual education.

Take-home messages: The main objective of undergraduate education is providing knowledge and skills to reach a successful future professional development.

11V6
Evaluation of students' satisfaction with the "Aachener Modellstudiengang Medizin"
S Sudmann, T Forkmann, N Heussen, S Gauggel, R Hilgers, W Dott and M Simon* (RWTH Aachen University, Medical Faculty, Aachen, Germany)

Background: In 2002 the German government created a new Medical Licensure Act. This included the "Modellstudiengangsklausel", which means, that Medical Faculties had the options open to design new

curricula. Medical Faculty of RWTH Aachen University took the chance to develop an organ-centered curriculum with organ-centered modules and implemented it during the last seven years. The novelty was that students were taught in small groups and that the content of teaching was organized interdisciplinary instead of the classic manner. This study was created to evaluate the students' contentment.

Summary of work: Since 2005 students contentment is evaluated continuously via an electronic device "EVAluna". We show the results of the academic year 2007/2008. The items we focused on are: quality of the organ-centered modules, their comprehensibility, structure, communication between teachers and individual learning outcome (6-point scale).

Summary of results: Results of this evaluation show discrepancies: organ-centered modules 2.6 (±0.92), comprehensibility 2.4 (±0.9), structure 2.6 (±1.1), communication of teachers 2.7 (±1.04) and learning outcome 2.4 (±0.98). Altogether the evaluations of all courses range from 1.7 to 3.8.

Conclusions: Within the Aachener Modellstudiengang the contentment of students is evaluated well.

Take-home messages: The communication of teachers and the individual learning outcome should be forced.

11V7

Compulsory questions on University Student Evaluation of Course (SEC) instruments may not be applicable to a graduate entry medical program: The Griffith University experience

R Tedman*, R Loudon and H Pountney (Griffith University, School of Medicine, Gold Coast, Australia)

Background: It is common practice throughout the world for University students to be asked to complete standardised course evaluation instruments as part of the regular curriculum monitoring and staff development processes. However, are standardised instruments that have been designed for stand-alone, semester-long courses appropriate for integrated, year-long courses characteristic of many medical programs?

Summary of work: This paper discusses data collected as part of the University-wide Student Evaluation of Course (SEC) surveys for the four year graduate entry MBBS program during 2008 and 2009 plus data collected through other evaluation systems specifically designed by the School of Medicine for different years of the program.

Summary of results: Student comments reveal 1) some confusion regarding interpretation of questions and 2) in at least the Year 3 and 4 course evaluations, the students' Likert scale ratings appear to be referring to aspects of the whole program not just the course that the SEC instrument is supposed to be rating.

Conclusions: Our data suggest that some of the compulsory, standardised SEC questions are inappropriate for curriculum monitoring and staff development in an integrated MBBS program.

Take-home messages: Care must be taken with the use and interpretation of data collected using standardised University-wide Student Evaluation of Course instruments for integrated medical programs, especially in relation to comparisons with stand-alone semester long courses.

11V8

The development of a questionnaire for 2nd year medical students to provide feedback on clinical skills teaching: Benefits for both the learner and the teacher

Stephen Lloyd-Smart*, Susan McGrath, Diane Fisher, Margaret Ward, Peter Belfield and Andrew Lewington (Leeds Teaching Hospitals Trust, Medical Education Department, Leeds, UK)

Background: Currently, students provide feedback on clinical skills teaching annually. The feedback is not teacher specific and therefore is not meaningful to individual teachers.   Students have previously commented that they do not think their feedback will result in any meaningful change.

Summary of work: A simple questionnaire consisting of six questions using a Likert scale and two, optional free text boxes was developed and intensively promoted. Students gave an overall grade for each teacher. Initially the questionnaire was provided in paper form. Recently it has been made available electronically.

Summary of results: The initial return rate was 52%. We provided individualised feedback to the teachers within four weeks of the session. Feedback from the teachers was that this process was very useful. Poorly performing clinical leads have been offered support to improve their teaching.

After introducing the electronic format the return rate has increased significantly.

Conclusions: The process has been beneficial to both teachers and learners. Students feel they are providing meaningful feedback to specific teachers. Teachers are able to reflect on the medical student's perception of their teaching and have been provided with the opportunity to develop their teaching skills.

Take-home messages: Weekly, learner centred evaluation has become integral to the monitoring and improvement of teaching service provision.

11V9

Evaluation of medical education program, Faculty of Medicine, Srinakharinwirot University, between 2006-2009

Wanchai Buppanharun(Srinakharinwirot University, Medical Education, Thailand)*

Background: The Medical Education, Faculty of Medicine, Srinakharinwirot University aims to produce qualified doctors who work as professionals. To attain this goal, the graduates have been sent to work all over Thailand since 1975, with the main objective of being responsible of the community.

Summary of work: The batches qualification 2006-2009 was analyzed by depth interview and questionnaire.

Summary of results: Analysis findings: a) quality of being a doctor as appraised by the many hospital staff marked quite good under the categories of basic medical knowledge, holistic treatment with professionalism. b) good relevant medical curriculum and clinical practice. c) pride and honor for being a student of Faculty of Medicine, Srinakharinwirot University, for there is no difference in knowledge, ability, communication skills and treatment compared with another Medical Universities. However, they took little time in adapting themselves to thrive in being members of the team. Based on their experiences, the important thing needed would be to add more cases on practical skill treatments to prepare them well before being sent to work in hospitals.

Conclusions: We prepare qualified and ethical doctors for society.

Take-home messages: Continuing graduates' evaluation is needed to improve the medical education curriculum.

11V10

Main teaching strategies for sophomore students in the school of medicine: Comparative, observational study in two generations

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Background: There are changes in the curriculum of the School Medicine of the UNAM, Mexico.
The evolution of the predominant teaching strategy in these two generations of sophomore students is unknown; we don't know whether it is student-centered or teacher-centered.

Summary of work: The SPICES instrument, modified to our context, was used for the evaluation. This instrument identifies the predominant type of teaching strategies and their differences can be evaluated with the Likert scale.

Summary of results: There is little difference between the two generations with a tendency towards the student-centered approach.

Conclusions: This phenomenon is due to the transition the School has been going through over the last three years, the aim of which is to change the curriculum from a traditional one to a student-centered curriculum. The workshops and sessions to support this change are reflected in the answers to the questionnaire.

Take-home messages: We propose to follow up in the following generations.

11V11

Changes: Voices of medical students and curriculum planning

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Background: The 4th year medical students have to attend 10-week internal medicine clerkships in Prapokklao Clinical Medical Education Center. The curriculum and timetable have not been improved or adjusted for a long time despite the student feedback every year.

Summary of work: Student comments and suggestions in the past three years (2007-2009) were reviewed. The issues considered as important and correctable by undergraduate team were discussed for the solution before the year 2010 curriculum and timetable planning. The issues mentioned were also sent as questionnaires to medical students for evaluating their agreement.

Summary of results: There were 8 topics considered as the important and correctable issues. After the discussion based on student feedback, there are many changes in the new curriculum and timetable. The major change is about morning rounds, many students would like to have more time in this learning activity. Instead of a fixed number of lecture topics (about 6 lectures/week) and working times 10 hours/day, students would have more time for morning rounds with their senior doctors, from 48 hours to 110 hours in 10 weeks (time for this activity increase about 129% from the previous year). Other changes would be further discussed.
Conclusions: Considering student feedback should improve the curriculum planning.
Take-home messages: Thinking of the student before planning curriculum.

11V12

Internal evaluation of educational quality: Jahrom University of Medical Sciences, Iran

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Background: Internal evaluation is a suitable method for judgment about educational quality, the achievement rate of educational objectives, and to determine weaknesses and strengths. Evaluation of the educational program quality gives feedback of how the educational process performs at various stages.
Summary of work: This study has been designed as an internal evaluation project by cooperation of internal ward and educational development center of Jahrom Medical School. In this study we have evaluated several educational factors of internal clinical wards by using objective based model, including: clinical setting, manager feature, outcome teaching and learning process and research activity of internal faculty members. Data were obtained by a valid and reliable questionnaire and checklist that were filled out by medical students and internal faculty members. The collected data were analyzed by descriptive statistics.
Summary of results: About 80% of students were satisfied with the educational process in teaching progress note and history taking but only 30% of students stated the clinical teaching in the out-patient center is good. Also 56% of students stated that morning report is desirable. 60% of students indicated educational rounds by faculty members are a good and effective educational activity.
Conclusions: According to the results based on the viewpoint of clerkship and intern students, internal groups in educational and learning process factors have had a semi desirable to desirable effect.
Take-home messages: It seems making a change in the education program is necessary and in developing the clinical setting.

11V13

Educational evaluation of School of Dentistry, Tehran University of Medical Sciences

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Background: Educational evaluation is a process which deals with gathering data and assessment for the improvement of academic activities.
Summary of work: In this research, the efficiency of the department was studied based on the internal self evaluation. For this purpose, pre-determined indices with relative modifications were used. This study was conducted with the collaboration of the 10 departments of the School of Dentistry, faculty members, all of the students (residents, PhD and M S Students) and the graduates. A questionnaire was used covering 9 areas: 1) aims and objectives 2) organizational and management structure 3) faculty members 4) students 5) teaching and learning process 6) educational courses and curriculum 7) graduates 8) research and educational facilities and equipment and 9) research were studied using 61 criteria and 172 indicators. Five-point Likert scale was used for the responses in the questionnaire.
Summary of results: The mean of the areas under study was 70% which was considered as approximately satisfactory.
Conclusions: According to the findings, atmosphere and educational facilities which were identified as the weakest field needing more consideration and investigation.
Take-home messages: Experience at the national and international level show that the process of internal evaluation, especially at the level of academic departments, can play a critical role as an efficient method in warranting high standards.

11V14
Internal evaluation based on basic standards of medical education in Ahvaz University of Medical Sciences, Medical School, 2009
Z Moosavi, M Feghhi and A Olapour (Ahvaz Jundishapoor University of Medical Sciences, Medical School, Ahvaz, Iran)*

Background: Ahvaz University Medical School is currently undertaking a renewal of its Medical Doctor (MD) program. As part of this renewal an assessment was conducted to identify gaps in the current Undergraduate Medical Education program and to make recommendations for changes based on its findings. This study was conducted based on indicators for evaluation extracted from basic standards of medical education.
Summary of work: Based on past indicators for each area, we acquired data on the current situation by identifying data sources and the way of getting data.
Summary of results: In mission and goals area the current situation was good. Educational programming was good in 50%, medium in 30% and unsatisfactory in 20%. Staff and resources area current situation was medium in 20 and 90% respectively and in assessment area in 80% the current situation was medium.
Conclusions: In all areas the situation is less than ideal; this gap is different in different areas.
Take-home messages: Internal evaluations help to study the present situation, find out challenging points and help in planning to improve the situation.

11V15
Comprehensive evaluation of MD program in Tehran University of Medical Sciences: A lever for change
Azim Mirzazadeh, Hamid Emadi, Mohamad Jalili, Ali Jafarian, Fatemeh sadat Nyaeri, Abolfazl Golestani, Ahmad Salimzadeh and Mohsen Nasiri Toosi (Tehran University of Medical Sciences, School of Medicine, Educational Development Office, Tehran, Iran)*

Background: In 2005, the School of Medicine of Tehran University of Medical Sciences decided to conduct a comprehensive review of its MD program for the first time from its inception in 1934. The results of this review would be the foundation for a critical decision for necessity of radical reform in MD program.
Summary of work: During 2006-2008, four major projects were conducted to find the major strengths and weaknesses of our MD program. These included a self-study by the national standards for MD programs, focus group projects for finding out the stakeholders' point of view, a graduation survey and assessing the educational environment by DREEM inventory. The results of these studies have been collated in a single report and have been classified in 13 areas. In each area, strengths, weaknesses and suggestions for improvement have been defined. The results of the review have been discussed in several meetings with faculty members and administrators.
Summary of results: The review documented the strengths and also shows very frankly the deficits of our curriculum to all the stakeholders in a systematic manner. After frank and deliberate discussions the Faculty Council agreed on a radical reform in MD curriculum.
Conclusions/Take-home messages: Evaluation of the current situation can provide the required momentum for change and convince the stakeholders of the need for such a painful experience.

11V16
A study of nursing specialists' and students' views regarding the required revisions and appropriate pattern in B.S. Nursing curriculum
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Background: Nursing curriculum requires an appropriate framework within which a dynamic education can take place. Despite much effort in recent years, we are still far away from the intended objectives. This research study is an attempt to determine the ratio of the need for fundamental revision in the nursing curriculum (in the input, process and outcome) as seen by the experts and students of nursing.
Summary of work: The study was descriptive in which a questionnaire was used. 200 senior nursing students and 100 nursing instructors and professors, randomly selected (cluster random sampling) from Isfahan, Tehran, Shiraz, Mashhad, and Ahwaz Universities answered the questionnaire, whose validity and reliability had been established with a reliability coefficient of .90 arrived at using test-retest method. The data were subjected to SPSS, chi-square and frequency statistics were also obtained.

Summary of results: Cases such as need to revise the curriculum in relation to input, process, and output from the perspectives of teachers and students were investigated.

Conclusions/Take-home messages: The findings of the research study indicate that the nursing curriculum requires revisions in terms of input, process, and output. A new paradigm of change has been suggested and further research studies are recommended to cover the issue more broadly.

11W Posters: The Context and Approaches to Clinical Teaching

11W1

Positive experiences in psychiatry clerkships: Lessons from five years of experience

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Background: Positive experiences in psychiatry clerkships will likely nurture the development of better attitudes toward mental patients.

Summary of work: The aim was the identification of factors underlying a highly rated Psychiatry and Mental Health clerkship, recurrently one of the top student rated clerkship (n=256) in all of its 5 years of experience. We review the educational design of the program.

Summary of results: Students rotate 96 hours through 2 departments in 4 weeks. The ratio of tutor: student is 1:4. Patient encounters are logged in a paper booklet. 14 introductory and case base seminars - each focused on a specific common mental pathology - are presented, in parallel, to the whole class. The whole programs are designed and delivered collaboratively by the same team. Assessment of student achievements involves multiple tools: written MCQ tests with stems of clinical vignettes, rubrics of professionalism and clinical skills, and patient clinical reports. During clerkships, the departments prioritize education as one of the main tasks. The tutors display very positive attitudes towards the students and improve from one edition to the next.

Conclusions/Take-home messages: Positive educational experiences in psychiatry clerkships can be generalized to whole classes. Taking care of multiple educational and organizational dimensions seems to pave the right way.

11W2

Health service organisation and student learning opportunities

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Background: In clinical placements, health service staff supervises students in an environment where service organisation and work priorities are centred around patient care rather than student learning. In this project, the extent to which different health care services could respond to student learning needs was explored.

Summary of work: A business model of leadership development within work teams (Team Management Systems) was used. Members of three health care teams (dental, aged care and rural hospital) completed a suite of profiling tools and workshops to clarify 'who is doing what and why' for student learning, and to develop quality improvement strategies. Evaluation included pre and post intervention questionnaires, interviews and field observations.

Summary of results: Dental team (7 participants): re-oganisation of patient care to improve student learning, increased dental assistant roles in supporting learning. Aged care team (9 participants): improved student orientation and clarification of learning objectives. Rural hospital (8 participants): articulation of a commitment to quality improvement.

Conclusions: The ability of individual clinical teams to make changes varied according to the complexity of the health service. In addition, workload pressures reinforced a strongly discipline based approach to managing student learning.

Take-home messages: The complexity of the health service should be taken into consideration when planning and supporting student clinical placements.

11W3

Spend a week with a surgeon

Victoria Duque Mallen* (University of Zaragoza, Miguel Servet Hospital, Zaragoza, Spain)

Background: The poor exposure of medical students to real-not virtual-clinical scenarios is growing. Focused in trees (diseases and, sometimes, patients) they lost opportunities to see the forest (student's ignorance about the lifestyle of a general surgeon). Besides, surgeons usually involved in teaching residents are not involved in teaching medical students. The consequences are clear: less motivated and uninformed students.

Summary of work: 21 students spent a week in an Endocrine and Morbid Obesity Surgery Unit in Miguel Servet Hospital (Zaragoza, Spain) with an associated professor of surgery in 2008-2009. A 5 days scheduled program was developed with activities classified in three areas: hospitalization unit, outpatient clinic and operating room. Assessment was prospectively established and a final student commentary demanded. Commentaries were analyzed and compared.

Summary of results: Students embedded in a surgical unit with highly motivated staff learn autonomy, cooperation in simple tasks and the ability to think freely about the specialty.

Conclusions: Prejudices about surgery and surgeon´s lifestyle change after one week in a surgical unit. Students become better informed for professional decision making and, if not future surgeons, they understand our work or at least don´t have the impression of a waste of time.

Take-home messages: Direct student-surgeon interaction for a week can change students' surgical exposure.

11W4

Optimising the learning experience on the coronary care unit for medical students

S Din*and A Reid (Warrington District General Hospital, Warrington, UK)

Background: Fourth year medical students at the University of Liverpool are required to provide evidence of attendance at a Coronary Care Unit ward round. Students have an inconsistent experience, and feel the educational aspect of the ward round could be optimised.

Summary of work: To evaluate the educational value of the Coronary Care ward round we obtained feedback from students to identify their learning needs and determine whether they were being met.

Summary of results: Students provided feedback that they would prefer a higher level of interaction on the ward round. They felt interactive sessions facilitated effective learning. It was perceived that the unit could be too busy at times for the cardiology doctors to devote time to teaching. Opportunities to practice cardiovascular clinical examination and obtain feedback were valued. Bedside teaching on acute cardiac care was appreciated.

Conclusions: At busy times students should liaise with the medical team to identify an appropriate time for a "teaching round". Doctors should encourage students to elicit clinical signs, interpret ECGs and discuss imaging. Students are advised to express their personal learning needs to maximise small group learning opportunities.

Take-home messages: Coronary Care Unit ward rounds are a valuable undergraduate learning experience in cardiology.

11W5

Obstetric dictionary

A P Kent* and V Perrott (University of Cape Town, South Africa)

Background: Students embarking on their clinical rotation in obstetrics often feel overwhelmed by the mass of new words, names and abbreviations that they face. We have created an electronic dictionary that they can consult and test their knowledge against.

Summary of work: We collected about 600 words, names and abbreviations that students have to understand and defined them with short explanations. Students are invited to study the words presented then ask the Medical School computer to test their ability to define them correctly.

Summary of results: The new students enjoyed the way the vocabulary was presented and found it useful to test themselves electronically. They were able to take the test as many times as they wished - each time the computer selecting 100 fresh items for them to define.

Conclusions Take-home messages: This electronic self-testing dictionary is a useful adjunct to learning and will be made available to other universities for their adaptation and use.

11W6

Patients' views on student participation in general practice consultation

S S L Mol*, J H Peelen and M M Kuyvenhoven (Julius Centre, University Medical Centre, Utrecht, The Netherlands)

Background: Finding enough general practitioners (GPs) to host students for their clerkship is a problem. Perhaps GPs think patients dislike consulting a student-doctor. The question we studied was: How do patients appreciate the presence/participation of a student during a GP-consultation?

Summary of work: Literature search (Pubmed 1990-2010), studies to fulfill the following criteria:
1) structured questionnaire, 2) concerning patient's opinion on presence/participation of medical Student, 3) in general practice.

Summary of results: Ten articles fulfilled the criteria. The majority of patients gave permission for the presence/participation of a student doctor. Previous experience was a predictor for giving permission. Emotional or sexual problems, and the need for an intimate examination were the main reasons for refusal. Satisfaction was high. Benefits patients experienced were: more time, a more thorough examination, better patient education and getting a second opinion. Besides, altruism played a role.

Conclusions: The attitude of patients towards student-doctors is generally positive. The weakness of some of the studies was a low or unclear response, introducing selection bias, and possibly a too positive result. Future research should go into ways of asking patients permission, and their relation to the degree of acceptance.

Take-home messages: Patients in general practice appreciate consultations with student-doctors!

11W7

Development and preliminary evaluation of a new orthopaedic clinical attachment for medical students

S Grant*[1], M Field[2], S Gibson[1] and D Chanock ([1]Ayr Hospital, Department Trauma and Orthopaedics, Ayr; [2]University Glasgow, Faculty of Medicine, Glasgow, UK)

Background: From previous work we identified medical students perceive a need for more emphasis on orthopaedics in their courses. We present results from an innovative problem based learning (PBL) attachment in orthopaedics for final year students.

Summary of work: Following the introduction of a two-week orthopaedic teaching programme based on PBL scenarios, we prospectively collected details of student confidence using a five-point Likert scale. The PBL scenarios were based on five core topics in orthopaedics (trauma, back pain, painful joints, acute swollen knee and peripheral nerve entrapment). Student confidence was compared with other clinical specialties (cardiology, respiratory, gastrointestinal and neurology). Structured feedback regarding student opinions on the teaching was also collected via questionnaires and focus group discussion.

Summary of results: Nineteen students (79%) completed all feedback forms. At the beginning of the attachment, students were least confident in orthopaedic clinical assessment compared to all other specialties. After completion of the attachment, student confidence improved to a similar level to cardiovascular and respiratory assessment ($p<0.05$). Of the five core topics, students were least confident in the assessment of back pain and of the traumatic patient (2.42 and 2.05). After completion of the attachment, their confidence increased to 3.84 and 3.57 respectively ($p<0.05$).

Conclusions/Take-home messages: Integration of traditional clinical teaching and PBL increases student understanding about orthopaedics and confidence in clinical assessment, particularly trauma patients.

11W8

A new modified 4:1 clinical placement model: A pilot project

A Barrett*[1] and S Slattery[2] ([1]Royal College of Surgeons in Ireland, Dublin; [2]Cork University Hospital, Cork, Ireland)

Background: Clinical placements are a key feature of undergraduate physiotherapy programmes, traditional models of supervisor-to-student ratios have been evaluated (Moore et al, 2003, with no one model having been deemed superior to another (Lekkas et al, 2007). We introduced a new modified 4:1 clinical placement model to meet the challenge of reduced placement capacity.

Summary of work: Four final-year physiotherapy students were placed in a rehabilitation gym supervised by the practice tutor and/or practice educator. Qualitative data were collected by face-to-face interviews with all

participants after the placement. Quantitative data were recorded by Physiotherapy staff and the pilot was approved by the hospital Research Ethics Committee.

Summary of results: The model resulted 340.2 hours of staff redeployment creating the equivalent of 1.62 posts. Themes identified by students that had a positive effect on the learning experience included: peer learning and joint treatment sessions, supervision and teaching while gaining independence, the pre-placement planning and organisation. Challenges for the tutor and educator included organisational issues and ensuring the standard of care for patients.

Conclusions: This placement model may be a valuable option when placement capacity is limited, contributing to the physiotherapy service while maintaining, and possibly enhancing, the learning experience for students.

Take-home messages: This model may increase placement capacity, contribute to physiotherapy services and provide a high-quality learning experience for students.

11W9

Factors influencing teaching in clinical environment: A qualitative study

Roghayeh Gandomkar, Mahvash Salsali and Azim Mirzazadeh*(Tehran University of Medical Sciences, Tehran, Iran)

Background: Clinical teaching is at the center of medical education. It is impossible to train competent physicians without effective clinical teaching. Complexity of clinical teaching, current changes in medical environment and the diverse and competing roles of clinical teachers have highlighted some concerns for them in the clinical environment. This study aims to explore clinical teachers' perception of the clinical teaching context.

Summary of work: A qualitative study has been conducted. Data derived primarily from interviews with clinical teachers, using purposive sampling, informal interviews and observations. A content analysis approach was used to analyze the data.

Summary of results: ''Educational structure', 'professional duties' and 'Motivational factors' were contextual factors affecting clinical teaching. Time constraints, diverse and overloaded clinical teachers' duties, low payment, lack of teaching recognition, research highlighting in faculty promotion and teachers' role challenges were the most important factors impacting clinical teaching.

Conclusions/Take-home messages: These findings have implications for policy makers of medical education and clinical faculty members to improve quality of clinical teaching.

11W10

The effect of a gender limitative policy in medical education in Iran on knowledge, performance and learning

Hadi Zamanian[1], Leila Bahramkhani[2], Fatemeh Laloha*[2] and Amir Ziaee[2] ([1]Tehran University of Medical Sciences, Tehran; [2]Ghazvin University of Medical Sciences, Ghazvin, Iran)

Background: In the last decade, a policy was made by policy makers to limit male medical students from performing some special procedures and examinations in Gyneco-obstetrics wards/emergencies. In this study we want to assess how medical students reached their educational objectives after their period of attendance in the Gyneco-obstetrics ward regarding their gender.

Summary of work: 81 intern medical students from Ghazvin University Medical School attending Gyneco-obstetrics ward were included. Knowledge and performance about some skills such as external and internal genital examination, NVD and etc, was assessed via MCQs and expert observation.

Summary of results: There was a significant difference between the genders. Reaching knowledge based objectives was good in 40% of female interns and 12.5% of males. Reaching practical objectives was good in 80% of females and 12.5% of males. The most important problems were with communication with patient and performing the techniques.

Conclusions/ Take-home messages: As shown, in male medical students we have a remarkable deficit in skills and also in learning even cognitive objectives in Gynecology field. The above mentioned limiting policy resulted in such deficit that may cause some problems for male medical students and future doctors. A policy analysis and change is necessary.

11W11

'Firm Tutors' improve medical students' clinical placements

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Background: Early clinical placements are challenging for medical students. Anonymity causes problems with Trusts teaching across several sites. We describe the results of introducing 'firm tutors' overseeing small groups (5-6) of 48 third year students during two 14 week placements.

Summary of work: Students' views were evaluated by questionnaire, 20 statements were rated, 5 point Likert scale, (0-strongly disagree, 4-strongly agree), high scores indicating excellence. Tutor's views were evaluated by 1:1 interviews.

Summary of results: Student overall mean scores remained similar to historical data, autumn 08/09[2.64 v 2.64] spring 08/09[2.76 v 2.84]. However, areas influenced by firm tutors improved in relation to clinical teaching in medicine and surgery (>3.5). Four questions on overall quality of placement improved. The students' perception of the value of professional behaviour assessment and SSAs fell (< 2). Tutors enjoyed getting to know 'their' students and helping them develop. All the tutors have continued into a second year. Arranging mutually convenient meeting times was the greatest challenge.

Conclusions: Firm tutors improved our medical students' introduction to, and perceptions of, their initial clinical placements in a large tertiary teaching hospital across two sites.

Take-home messages: These findings have supported the College of Medicine including the concept of 'firm tutors' in the new clinical curriculum for 2010/11.

11W12

Role playing: A potential technique to enhance humanistic attitudes and behaviors in medical students

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Background: All medical schools need to produce compassionate doctors, but none is ready to practice in real life. Role-play is widely used to learn assertive behavior through practice.

Summary of work: To create excitement and engagement in class of medical English, 120 MEDSWU students were divided into 6 groups for taking 6 assigned scenarios, including chest pain, upper airway obstruction, ankle injury, premature membrane rupture, fever with rash and swallowing foreign body in esophagus. Each studied a person's life story and performed as if one were doctor, nurse, patient, relatives and officers. All scenes were videotaped. After class, learning outcomes were assessed in domains of knowledge and communication skills, as well as their satisfaction on this activity.

Summary of results: In addition to passing the examination regarding signs, symptoms, clue diagnosis and managements, all students were satisfied, well-responded and enjoyable.

Conclusions: Role playing technique can be a very flexible and effective tool to anticipate some of the sensitive conditions and rehearse our students' performance in order to influence the outcome. Learner's feedback and comments is a crucial means to change one's behavior to fulfill a social role.

Take-home messages: To use variety of skills beyond expected, role playing technique is a challenging method to achieve humanistic views in medical students.

11W13

Self-directed practice scheduling is equivalent to instructor guided practice when learning Z-plasty

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Background: Medical educators look for more efficient ways to teach technical clinical skills. The literature in self-directed (SD) motor learning suggests that this is an effective approach. Our purpose was to look for equivalency between SD and teacher lead practice when learning the skill of Z-plasty.

Summary of work: Surgical residents learned three Z-plasty repairs on a synthetic model: a 30°, 45° or a 60° repair. Performance was evaluated on a pre-test of a 45° repair, followed by an hour of practice, and a post-test of a 45° repair. Fifteen participants were randomly assigned into one of two groups: SD, where they could choose to practice any of the three types of repairs in any order, or Guided where the practice order was prescribed.

Summary of results: ANOVA results showed improvement in completion time and expert based ratings from pre-test to post-test for both groups. There was no learning advantage of guided practice over SD practice (p < .05).

Conclusions: Many skill centers are offering 24 hour access, but, teaching staff are often not available leaving trainees to manage their own practice sessions. Our findings suggest that self-directed practice schedules may be suitable for learning complex technical skills.

Take-home messages: Self directed learning is as good as instructor guided practice.

11W14

Successful cannulation by medical students: Does it require supervision?

A M Gwozdz*, M Klingenberg and D Gill (University College London Medical School, Division of Medical Education, London, UK)

Background: Cannulation, often performed by junior doctors, is the second-most common invasive procedure for hospital patients. However, medical students' competency/preparedness for unsupervised cannulation has not been assessed. European Working Time Directive implementation has resulted in loss of supervised teaching for undergraduate students.

Summary of work: We assessed cannulation performance by 1st year clinical students to quantify the impact of supervision. Cannulation was taught to all students by the end of their first attachment as part of the competency in the practical skills curriculum. At the end of the year, students were invited to complete a self-reflective questionnaire that attempted to establish how many supervised/unsupervised cannulations were performed clinically, and how many of each were successful.

Summary of results: 277 students completed the questionnaire. 8 students did not attempt cannulation, while 21 students reported not having any supervised cannulation attempts. Linear regression analyses were used to compare the number of successful cannulation outcomes with the number of supervised attempts (slope=0.82, 95% confidence interval (CI)=0.76-0.87, P<0.0001) and unsupervised attempts (slope=0.78, 95% CI=0.74-0.82, P<0.0001). Overall, cannulation performance was not improved by supervision.

Conclusions: Although students often request more supervised cannulation, these results demonstrate the importance of initial practical skills teaching.

Take-home messages: Cannulation success appears to be independent of supervised practice.

11W15

Rational clinical examination: A survey of the application of clinical skills taught in respiratory medicine

R H Kassamali*[1], S Noor[2] and R Mukherjee[1] ([1]Birmingham Heartlands Hospital, Birmingham; [2]School of Medicine, Morriston Hospital, Morriston, Swansea, UK)

Background: Current research defines precision and accuracy of items of clinical examination[1]. We set out to examine if doctors naturally carry out the more precise items of respiratory clinical examination from the repertory they learn as medical students.

Summary of work: An online questionnaire was emailed to doctors in the Heart of England NHS Foundation trust to all grades of doctors.

Summary of results: Responses were from 105 participants from a range of specialties and grades. The majority frequently carried out the respiratory examination as a routine with some items of high precision.

Conclusions: The kappa values (signifying precision) correlate with items of routine respiratory examination. Practicing doctors tend to develop their own rational examination routine which can be improved by adding items of high precision (e.g. crico-sternal distance) which are not routinely taught.

Take-home messages: Explicit teaching of the rationale for clinical examination based on evidence can be included in the clinical teaching of undergraduate medical students to make it relevant and useful.

Stone H, Mukherjee R. Evidence based clinical teaching in respiratory medicine. Proceedings of the Association for Medical Education in Europe 2007, 2: 5. (AMEE 2007: Trondheim, Norway).

11X   Posters: e-Learning, Technology, Virtual Patients and Evaluation

11X1
Exploring knowledge, attitudes and behaviors of medical students towards using computer technology in learning

Rehab Abdel Hai[1], Sahar Yassin[1], M. Fouad Ahmad[2] and Uno GH Fors[3] ([1]Department of Public Health, Cairo University; [2]National Tempus Office, Egypt; [3]Virtual Patients Lab, Department LIME, Karolinska Institutet, Stockholm, Sweden)*

Background: Computer literacy is no longer an issue for debate. Therefore developing countries' medical schools are adopting strategies for integrating medical informatics into their curriculum. The School of Medicine at Cairo University is considering such strategies in view of the high enrollment numbers.

Summary of work: The pattern of internet and computer use of three different grade levels was investigated in terms of frequency, purpose and self-rating skills of use.

Summary of results: Findings showed that the majority of students owned a computer. 40% reported its use for internet surfing, and 28% for entertainment. The number of weekly internet browsing hours ranged from 2 to 10, with males showing significantly longer browsing hours than females ($P < 0.001$). Students considered the internet the main source for information research with minimal numbers mentioning the library or instructors. Students that registered for online courses were 19% and about 80% of students agreed to the appropriateness of integration computer technology into their education, with no statistical significance between males and females.

Conclusions: Our results indicate that students favour the use of computers and the internet over traditional teaching methods.

Take-home messages: Hence, incorporation of adequate computer enhanced courses should be introduced into the medical curriculum at Cairo University and other similar universities.

11X2
From reality to fantasy – Perceived value of virtual learning resources by medical undergraduates

Rachel Lindley, James Giles and Kurt Wilson (University of Manchester, Community Based Medical Education, Manchester, UK)*

Background: Rapid evolution of technologies in online environments has the potential to offer enhanced virtual learning. However, little is known about current student perceptions regarding value and utility of this technology.

Summary of work: 4th year undergraduate focus groups explored current and future use of virtual learning resources. These were led by a peer interviewer. Semi-structured group interviews[2] with a total of ten students were conducted. Data were transcribed and analysed using constant comparative methods.

Summary of results: Students valued internet learning resources. Most useful were resources that had been endorsed by medical professionals. Other resources, although helpful were perceived as less reputable and students expressed guilt and uncertainty in their use. Students' ideal technology would include features allowing a single point of access for endorsed resources, immediate communication with peers and tutors, and self-assessment with instant feedback.

Conclusions: Tutor endorsement of high quality internet learning resources with a single point of access to these would be highly valued by students.

Take-home messages: Whilst technology exists to support student learning further development must focus on the assessment and endorsement of resources and ease of access for students. This warrants further discussion.

11X3
Learning in the virtual environment, even on a 'rough day'?

James Giles, Kurt Wilson and Rachel Lindley (University of Manchester, Community Based Medical Education, Manchester, UK)*

Background: Experiential learning, starting in year 1, is a common feature in UK medical curricula. How do students anticipate that a virtual learning environment (VLE) could support their experiential learning?

Summary of work: A pilot VLE was designed to outline our vision of this medium to support experiential learning. A clinical record system was a key component, populated with patient medical histories. Other resources included records of investigations, results and medication. Videoed interviews were provided for some patients. Students were informed that a fully operative system would allow them to upload their own experiences and compare these with existing resources.

Student-led focus groups totalling ten 4th year undergraduates explored the VLE. Semi-structured group interviews were conducted to capture their impressions.

Summary of results: Initial results suggest the VLE was seen as a novel approach to enrich experiential learning. Anticipated benefits included tutor involvement for direction. They feared over-assessment of their online activity, particularly on 'rough days'.

Conclusions: The VLE was seen as an environment in which experiential learning could be enriched and guided through tutor involvement. They worried about assessment through this medium.

Take-home messages: How can we maintain benefits of the VLE for experiential learning, whilst minimising student fears?

11X4

Open-access e-Learning courses: Potential for implementation

M Pellinen*, M Kaila, L Teikko and J P Turunen (The Finnish Medical Society Duodecim, Helsinki, Finland)

Background: We started to offer online courses for all Finnish physicians in 2004. The aim was to design practical tools for work and medical studies.

Summary of work: Open-access courses are available on different topics for self-studying. Courses consist of text, pictures, videos, podcasts and animations. Topics are selected from proposals by physicians, national evidence-based clinical practice guidelines or medical textbooks. After acceptance by an expert panel, the content of the course is produced by clinicians. All courses are evaluated and piloted before publishing. Most courses include an exam and a certificate for specialist education.

Summary of results: We have published 17 courses, average of 4 new courses per year. 5 -10 new proposals are received annually. The user feedback has been very encouraging. The number of visitors on the web site has stabilized to 1,5 -2,0 million hits per year. The most popular topics have been Basic Infection Control in Healthcare, Resuscitation and Injection of Medicines. Also nurses and other professionals are active users of our courses.

Conclusions: Our free of charge e-Learning courses are widely used by health care professionals in Finland.

Take-home messages: Open-access, free of charge online courses attract a broad user base and may therefore be highly efficient educational tools for implementation.

11X5

Development of an interdisciplinary blended learning course using virtual patients and skills training for advanced pediatric emergency training

R Lehmann*, A Simon, B Toenshoff, G F Hoffmann and S Huwendiek (University Childrens Hospital Heidelberg, Germany)

Background: Studies show deficiencies in the emergency treatment of children. Therefore a blended learning course including virtual patients (VPs, www.virtualpatients.de) as preparation for a skills training is planned according to Kern et al. "Curriculum development for medical education: A six-step approach". So far there are only limited data available on using VPs as cognitive preparation for an interdisciplinary skills training involving physicians and nurses.

Summary of work: The overall course design is preliminary planned according to Kern et al. In summer 2010 we will perform a needs assessment of the targeted learners to further specify the design. Among others, the following questions will be addressed using quantitative and qualitative approaches: Where are most urging areas for further training? How can this training be designed to best suit both nurses and physicians as preparation for pediatric emergencies? In specific: Should VPs designed for nurses and those for physicians be designed differently in terms of content or design?

Summary of results: The overall course design will be presented including the results of the needs assessment of the target learners (physicians and nurses).

Conclusions Take-home messages: The design of an innovative blended learning team training course incorporating VPs and skills training will be presented.

11X6
Virtual patient journeys in undergraduate medicine
K Taylor and C Jackson (Bute Medical School, St Andrews, UK)*

Background: A number of demographic and policy drivers, require future doctors to understand patients experience of living with long term conditions. This necessitates an understanding of health and disease as a process or 'journey' rather than as isolated episodes. It also requires an appreciation of the inter-disciplinary and cross-sectoral care required and the role that patients have in managing and caring for their own well-being.

Summary of work: A new course was developed for undergraduate medical students which offered the opportunity to choose from a menu of 'virtual patient journeys'. The course took place for one afternoon a week for 5 weeks. Each journey explored different points in the care of a patient through experiential clinical learning. Thus students were exposed to different patients in different contexts and with different professional perspectives. Students were encouraged to compare, discuss and question their learning by means of an educational blog.

Summary of results: The course has been favourably evaluated in terms of its educational value, efficiency, cost and utility.

Conclusions: This course is a cost-effective and educationally powerful means of introducing medical students to patients' longitudinal experience of health and illness. It also demonstrates the potential to broaden students' experience of primary care and include the wider community in medical education such as the voluntary sector and patient support groups.

Take-home messages: There may be wider value in this approach as a means of encouraging students to develop a holistic approach to patients' experience of living with a long-term condition.

11X7
Mapping virtual patient cases based on knowledge type and cognitive depth
Shekhar Kumta, Lester Critchley, Alex Yung, Yan Jin and Joseph Leung (The Teaching and Learning Resource Centre, The Chinese University of Hong Kong, Hong Kong)*

Background: Virtual Patients (VPs) or Computer based interactive cases are being increasingly used in formative and summative assessments in health care. In order to become effective learning tools, VPs should demand higher cognitive skills of those who attempt them and should be reviewed for their educational content and cognitive dimensions before they are used in the curriculum.

Summary of work: We reviewed 90 active VPs from a repository of 210 cases and mapped them using a modified Bloom's taxonomy for a) Type of Knowledge -Factual, Conceptual, Procedural and metacognitive and b) Cognitive depth - recall, analysis, evaluation. Content experts in 6 disciplines assessed VPs for instructional design and educational objectives, content validity and quality of feedback. We tracked 212 students over a 3 year period for the frequency and type of VPs used.

Summary of results: Majority of our VPs (74%) involve higher cognitive demands. More students re-attempted and returned to VPs that required higher cognitive skills - Analysis/Application 64% (n=135), Evaluation 80% (n=170), Metacognitive knowledge 54%, in comparison with Recall Cases 12% (n=25).

Conclusions: Students generally welcomed VPs provided they were demanding enough in terms of cognitive depth. Indeed, Good quality VPs should require the students to do much more than recall facts. Thoughtfully constructed cases should reflect different depths of learning and demand higher cognitive skills or else students do not find them engaging.

Take-home messages: Students generally welcomed VPs provided they were demanding enough in terms of cognitive depth.

11X8
Comparison of virtual patients and traditional case-based discussion in a neurology rotation
J J Cerqueira, V H Pereira, P Morgado, N J Sousa and M J Costa (Life and Health Sciences Research Institute, School of Health Sciences, University of Minho, Braga, Portugal)*

Background: An expected outcome of virtual patients (VP) over traditional paper cases is increased students' engagement. This work evaluates students' perceptions on the introduction of Virtual Patients (Imperial College, London) versus slide-based case-discussion in neurology seminars.

Summary of work: Annually, our 5th year (6 year curriculum) neurology rotation includes two seminars, with the topics "Patient with disturbed consciousness" and "Patient with limb weakness", each consisting on presenting and discussing 4 cases, routinely delivered with powerpoint slides. We compared the impact of replacing the cases of the second seminar by VP, discussions ensuing only after each student had individually completed the case in a computer. Students' perceptions were collected immediately after the seminars (7-point Likert scale) and compared in the two contexts (non-parametric tests).

Summary of results: VP had superior ratings (p<0.05) on: "overall session", "case presentation format", "case clarity" and "session usefulness". "Opportunity to actively participate in the discussion" was identically rated with or without VP. Overall most students preferred the VP to the traditional slide-based seminars (57%).

Conclusions/Take-home messages: The VP conquered student engagement in neurology case discussions.

Acknowledgements: Maria Toro-Troconis and Ashish Hemani (Virtual Patients program at Imperial College London).

11X9

Evaluation of different designs of virtual patients using the eViP design evaluation instruments

S Oberle*[1], B Hanebeck[1], S Huber[1], R Nawrotzki[2], C Harter[3], E Schönit[1], N Schäfer[1], B Tönshoff[1] and S Huwendiek[1] ([1]Centre for Virtual Patients; [2]Anatomy and Cellbiology II; [3]Biochemistry Centre, University of Heidelberg, Germany)

Background: Electronic virtual patients (VPs) are increasingly used in medical education. So far, VPs of different design have seldom been compared using the same standardized evaluation instruments. The presented work summarizes the evaluations comparing different designs of VPs set up for different educational scenarios.

Summary of work: 7 VPs got adjusted due to the needs of each scenario they were meant for including use within seminars, as wrap up of seminars and as preparation for skills training. Subject areas included anatomy, biochemistry, child and youth psychiatry, surgery and paediatrics. Approximately 200 students and 5 VP designers evaluated the VPs using the eVIP (electronic Virtual Patients project, www.virtualpatients.eu) evaluation instruments http://www.virtualpatients.eu /resources/evaluation-tool-kit/). The usefulness of the evaluation instruments was evaluated qualitatively by VP designers.

Summary of results: Feedback of students and VP designers will be presented in detail with respect to each scenario the corresponding VPs were made for. The overall feedback was positive and helpful to further improve VP design according to the VP designers.

Conclusions: VPs can be adjusted in design to suit different educational scenarios. The eViP design evaluation instruments proved to be helpful to further optimize VP design.

Take-home messages: The eViP design evaluation instruments help improving VPs.

11X10

Using interactive video-cases as a source for reflection

S Koole*[1], J Cohen-Schotanus[2], M Valcke[1] and A Derese[1] ([1]Ghent University, Faculty of Medicine and Health Sciences, Gent, Belgium; [2]University of Groningen, Faculty of Medicine, Groningen, The Netherlands

Background: Frequently used methods to evaluate reflection (e.g. reflective writings, interviews) are all limited in linking the reflection to the actual situation. Filming the situation can make this link observable, but is unsuitable to use in large populations and/or multiple measurements.

Summary of work: Interactive video-cases (doctor-patient encounters filmed through doctor's perspective) were developed as a source of reflection. Each case had six stops with an appearing countdown timer and a question (e.g. What would you answer/do/investigate now?). Subsequent to the case, student reflections were facilitated by six questions and assessed using scoring rubrics based on the case and a three factor reflection model (awareness- and understanding the experience and reflective outcome). Each factor was scored on 10 with a maximum score 30.

Summary of results: The reflection was assessed for 273 fourth and fifth year medical students at Ghent University by completing two video-cases on two occasions. Reflection scores had an inter-individual distribution between 0-30 with an average of 19.29 (SD 4.48).

Conclusions/Take-home messages: Interactive video-cases are feasible in large populations and/or multiple measurements and can be used as a source for reflection, resulting in reflection scores with sufficient inter-individual distribution.

11X11
Major incident tabletop exercises: 'The Next Generation'

J S Mooney[1], P A Driscoll[2] and L S Griffiths[1] ([1]University of Salford, School of Computing, Science and Engineering; [2]Emergency Department, Salford Royal Foundation NHS Trust, Salford, UK)*

Background: Major Incident (MI) and Emergency Planning tabletop exercises conventionally rely on paper plans to deliver scenario-based training. We have utilised an inexpensive, electronic whiteboard to display bespoke interactive software created to examine MI planning within a particular environment.
Summary of work: Connecting a Nintendo-Wii handset to a computer and projector provides a proprietary-comparable, highly portable, improvised interactive whiteboard surface. Utilising this technology we ran an exercise to determine our new Paediatric Emergency Department's MI Plan. The software was purpose-built to permit scrutiny of patient flow within our own physical environment and captured the team's output. Questionnaires were retrospectively completed by participants.
Summary of results: Both the 'whiteboard' technology and the software used were readily accepted by the Medical clinicians running and participating in the exercise. The main outcome was whether the setup facilitated MI Plan development. The collated data found strong agreement with this and allowed action cards to be developed for future MI use.
Conclusions: We positively applied the feedback generated to develop the new Paediatric Unit's MI Action Cards. Future work will involve retesting this new MI Plan.
Take-home messages: We developed a unique electronic system for updating and delivering bespoke MI training that was readily accepted and used by medical clinicians without a Computer Science background.

11X12
Podcasting practical skills?

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Background: For a few years now, podcasts have been seen as an inexpensive and effective teaching modality. Recent times have seen the number of podcasts available to medical students soar, but most of these are based around the discussion of general medical topics and theoretical knowledge. I aimed to investigate the feasibility of using a podcast for revision of practical skills taught as part of the clinical teaching in a UK medical school.
Summary of work: I wrote a brief podcast revising the abdominal examination, and e-mailed the download link to twenty 3rd and 4th year Keele Medical Students who had asked to be involved in the trial. I then e-mailed them all a link to an on-line survey engine, on which I had constructed a questionnaire regarding the podcast.
Summary of results: There was a 100% completion rate for the questionnaires. All felt that podcasting had a role to play in provision of a medical undergraduate course, though only 45% currently used them. The situations in which the podcasts were used varied significantly. All felt that podcasts would be beneficial to students learning abdominal examination, and 72% of the sample felt that podcasts could be used to teach or revise practical skills.
Conclusions: Despite the fact that all of the students had volunteered to be involved, only 45% are using podcasts, and so there is still a large potential for this modality to expand in provision of coursework.
Take-home messages: From this sample practical/clinical skills can be feasibly taught with podcasts.

11X13
How often do students use Wikipedia as a source of anatomical information?

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Background: Wikis are collaborative website tools, the most popular example being Wikipedia. As anatomists, we are concerned about the accuracy and reliability of this resource which students increasingly rely upon.
Summary of work: Students were surveyed to determine their use of Wikipedia. Wikipedia entries relating to upper limb anatomy were accessed on a specific date and reviewed by expert anatomists. The information was assessed for accuracy, usefulness and clinical relevance.

Summary of results: Surveys were designed to determine how often students consulted Wikipedia and other online resources, what type of information they accessed and their opinion of the quality of information retrieved. Our findings will be discussed.

Conclusions: Wikipedia is a readily available resource, widely accessed by students in the early years of their training. The anatomical information reviewed suggests that it is of variable quality. Our scientific skills curricular theme is designed to raise student awareness of the limitations of such online resources and direct them to more reliable information.

Take-home messages: Wikipedia contains some impressive anatomical resources, the basis of which is a renowned anatomical text. Despite this, students should be educated to treat the resource with caution although there is potential for a Wiki based anatomical text.

11X14

The uptake of podcasting and portable media players amongst UK medical students

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Background: There is an increasing drive to utilize technology in augmenting teaching and improve learning. Web based learning is well established but portable media players (PMPs) are now becoming vehicles for learning media with the advent of podcasting.

Summary of work: A questionnaire was submitted to medical students studying at Nottingham University to evaluate the uptake and their opinions of podcasts and PMPs.

Summary of results: One-hundred responses were obtained. All students had heard of podcasting [1]00%) and the vast majority are already using audio podcasts (98%). Video podcasts are used by 54%. Students overwhelmingly own PMP capable of playing audio (94%) with many (60%) capable of playing video. Students were keen to use podcasts to revise for both knowledge and clinical skills (7.29 / 10 and 7.76 / 10). They were against the idea of replacing teaching sessions with podcasts (2.59 / 10) but were very much in favour of them supplementing traditional teaching (9.11 / 10 - p = <0.0001)

Conclusions: Podcasts are already used by nearly all students to augment their learning. They wish to see them used to supplement rather than replace existing teaching.

Take-home messages: Podcasting is popular and used by nearly all students on their existing PMPs.

11X15

Features of e-learning instruments used by the students of the "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania

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Background: Using e-learning instruments is now a tendency in medical learning. The differences between the type of medical students and the local cultural differences, may requires different techniques for implementing those instruments.

Summary of work: A Claroline-type e-learning platform was used and the educational material created was appropriate for the distance learning of bio-statistics. This material was made available to 1st-year students of the Faculty of Health Sciences, specialty dental technicians from our University. These students were studying biostatistics as a compulsory subject as part of the 1st-year curriculum. Study of this material was not compulsory, although the students were constantly advised about its existence and usefulness.

Summary of results: Access to this educational material was monitored for establish a pattern of the students' access to it and the way that they used it (how many days/week, how many hours/day, number of hits, which type of material etc).

Conclusions: The authors establish an "e-learning profile" for the target population which can be useful for other institutions of the same type, who wants to implement e-learning techniques.

Take-home messages: To ensure the success of implementing e-learning instruments in medical learning we consider that is important to take care of the specific "e-learning profile" of the target population.

11X16

How to incorporate your basic science e-learning program into existing courses of an integrated medical curriculum

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Background: Apart from appropriate design, educational setting and content of e-learning programs, also integrating e-learning in courses of the medical curriculum requires full attention. Without adequate integration into courses e-learning is ineffective and learning goals will not be met.

Summary of work: This "tips & tricks" poster provides practical tools for basic scientists, faculty, and e-learning developers in order to successfully incorporate their e-learning program into existing courses / an existing curriculum. We have been struggling for many years with the practical course integration of our curriculum-wide pharmacology e-learning program. Unwilling course coordinators, content disagreements, e-learning without recognition or assessment are common problems with integration. We provide criteria and monitoring parameters in order to solve these problems.

Adequate integration involves collaboration with different people, co-creation of teaching materials, practical course incorporation, blended learning, continuous assessment and update of the e-learning, and assessment of students on content. Each criterion has its own monitoring parameters, which vary from logging program utilization, and content evaluation to assessment of the students.

We developed criteria and monitoring parameters which help determining whether an e-learning program is successfully integrated in a curriculum.

Conclusions: Each medical curriculum should evaluate whether e-learning and its integration are successful and (cost-) effective.